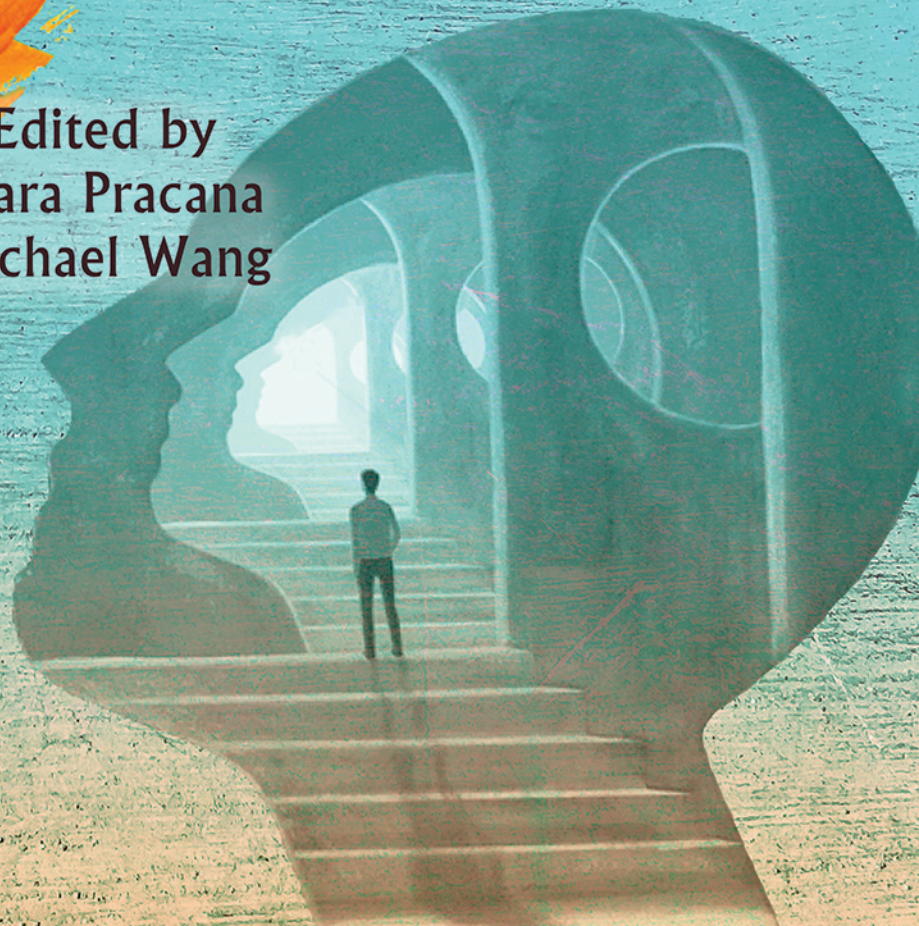


# Psychological Applications and Trends

# 2024

Edited by  
Clara Pracana  
Michael Wang





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## **2024**

**Edited by:**

**Clara Pracana**

**&**

**Michael Wang**



*Edited by:*

- Prof. Clara Pracana, Full and Training Member of the Portuguese Association of Psychoanalysis and Psychoanalytic Psychotherapy, Portugal,

- Prof. Michael Wang, Emeritus Professor of Clinical Psychology, University of Leicester, United Kingdom

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## FOREWORD

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Dear Participants,

This book contains a compilation of papers presented at the International Psychological Applications Conference and Trends (InPACT) 2024, organized by the World Institute for Advanced Research and Science (WIARS), held in International Psychological Applications Conference and Trends (InPACT) 2024, held in Porto, Portugal, from 20 to 22 of April 2024. This conference serves as a platform for scholars, researchers, practitioners, and students to come together and share their latest findings, ideas, and insights in the field of psychology.

Over the next few days, we will be exploring some of the most cutting-edge research and theories in psychology. We have a diverse range of topics and speakers lined up for you, covering themes and sub-themes. The conference proceedings and program include eight main broad-ranging categories that cover diversified interest areas:

- **CLINICAL PSYCHOLOGY:** Emotions and related psychological processes; Assessment; Psychotherapy and counseling; Addictive behaviors; Eating disorders; Personality disorders; Quality of life and mental health; Communication within relationships; Services of mental health; and Psychopathology.
- **EDUCATIONAL PSYCHOLOGY:** Language and cognitive processes; School environment and childhood disorders; Parenting and parenting related processes; Learning and technology; Psychology in schools; Intelligence and creativity; Motivation in classroom; Perspectives on teaching; Assessment and evaluation; and Individual differences in learning.
- **SOCIAL PSYCHOLOGY:** Cross-cultural dimensions of mental disorders; Employment issues and training; Organizational psychology; Psychology in politics and international issues; Social factors in adolescence and its development; Social anxiety and self-esteem; Immigration and social policy; Self-efficacy and identity development; Parenting and social support; Addiction and stigmatization; Psychological and social impact of virtual networks.
- **LEGAL PSYCHOLOGY:** Violence and trauma; Mass-media and aggression; Intra-familial violence; Juvenile delinquency; Aggressive behavior in childhood; Internet offending; Working with crime perpetrators; Forensic psychology; Violent risk assessment; Law enforcement and stress.
- **COGNITIVE AND EXPERIMENTAL PSYCHOLOGY:** Perception, memory, and attention; Decision making and problem-solving; Concept formation, reasoning, and judgment; Language processing; Learning skills and education; Cognitive Neuroscience; Computer analogies and information processing (Artificial Intelligence and computer simulations); Social and cultural factors in the cognitive approach; Experimental methods, research and statistics; Biopsychology.
- **ENVIRONMENTAL PSYCHOLOGY:** Environmental behaviour studies; Place attachment, Restorative environments; Pro-environmental behavior; Architectural psychology; Environment Psychology Theories and Methods; Environmental risk perception and management; Environmental impact assessment; Environmental consciousness; Interdisciplinary research.
- **HEALTH PSYCHOLOGY:** Biological, Physiological and Cognitive Models; Research methods and measurement; Individual differences and Habits; Illness-related and sick role beliefs; Acute and chronic illness; Dealing with Pain; Health Promotion and Intervention.
- **PSYCHOANALYSIS AND PSYCHOANALYTICAL PSYCHOTHERAPY:** Psychoanalysis and psychology; The unconscious; The Oedipus complex; Psychoanalysis of children; Pathological mourning; Addictive personalities; Borderline organizations; Narcissistic personalities; Anxiety and phobias; Psychosis; Neuropsychoanalysis.



InPACT 2024 received 526 submissions, from more than 43 different countries all over the world, reviewed by a double-blind process. Submissions were prepared to take the form of Oral Presentations, Posters, Virtual Presentations and Workshops. 189 submissions (overall, 36% acceptance rate) were accepted for presentation at the conference.

As we all know, psychology is a vast and complex field that encompasses a wide range of topics, from the study of human behaviour to the workings of the brain. It is a field that has made enormous strides in recent years, and it continues to evolve at a rapid pace. At this conference, we hope to not only share the latest research and developments in psychology but also to foster a sense of community and collaboration among attendees. We believe that by working together, we can continue to advance the field of psychology and make important contributions to our understanding of the human mind and behaviour.

We would like to express our sincere gratitude to all of our speakers, sponsors, and attendees for making this conference possible. This book includes an extensive variety of contributors and presenters that are hereby sharing with us their different personal, academic, and cultural experiences.

The conference also includes:

- One keynote presentation by Dr Tori Snell (Consultant Clinical Psychologist, Central and North West London NHS Foundation Trust; Director for International Relations – Association of Clinical Psychologists – UK (ACP-UK); Clinical Associate – Al Razi Medical Centre, Baghdad).
- Two Special Talks, one by Prof. Clara Pracana (Full and Training Member of the Portuguese Association of Psychoanalysis and Psychoanalytic Psychotherapy, Portugal), and one by Prof. Dr. Michael Wang (Emeritus Professor of Clinical Psychology, University of Leicester, United Kingdom).

This volume is composed with the full content of the accepted submissions of the International Psychological Applications Conference and Trends (InPACT 2024). We hope that this book of proceedings will be a valuable resource for those in attendance, as well as for those who could not join us. Thank you for your participation, and we look forward to a productive and stimulating event!

Lastly, we would like to thank all the authors and participants, the members of the academic scientific committee, and, of course, the organizing and administration team for making and putting this conference together.

Looking forward to continuing our collaboration in the future,

Prof. Clara Pracana

*Full and Training Member of the Portuguese Association of Psychoanalysis and Psychoanalytic Psychotherapy, Portugal  
Conference and Program Co-Chair*

Prof. Michael Wang

*Emeritus Professor of Clinical Psychology, University of Leicester, United Kingdom  
Conference and Program Co-Chair*

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## KEYNOTE LECTURE

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### **THE SLOW ROAD TO DECONSTRUCTING PSYCHOLOGY: A PERSONAL JOURNEY FROM FIELD WORK TO CLINICAL PRACTICE WITH WAR AFFECTED PEOPLE**

**Dr. Tori Snell**

*Consultant Clinical Psychologist, Central and North West London NHS Foundation Trust;  
Director for International Relations - Association of Clinical Psychologists – UK (ACP-UK)  
(United Kingdom)*

*Clinical Associate – Al Razi Medical Centre, Baghdad (Iraq)*

#### **Abstract**

An important direction of travel for psychology involves the deconstruction, or decolonisation, of its largely ethnocentric infrastructure. The need for a more considered path can be applied to (post) conflict settings. Research into the experiences of people affected by war and armed conflict tends to be needs-led e.g., by humanitarian or non-governmental organisations (NGOs) or else it seeks to understand the relation between stress exposure and mental health in the (post) conflict context. These approaches can be ‘extractive’, meaning that information is gained in ways that are more transactional than collaborative and with interpretations that risk being over simplified. Reflections on applying psychological theories, diagnoses (including diagnostic screening tools), and interventions with children and adults caught up in war-related violence and its ongoing aftermath in Iraq from 2006 to the present will be shared in this presentation to highlight the authority of their experiences and what was learned. Ethical dilemmas relating to research and clinical practice will be explored drawing from current perspectives.

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#### **Biography**

Dr Tori Snell, BA (Hons), BSc (Hons), MSc, DClInPsy is a Consultant Clinical Psychologist working in the Addictions Directorate of Central and North West London NHS Foundation Trust (CNWL). Having completed a first degree in history, she started out as a journalist with the Washington Post followed by a beat on an Ohio daily (The Medina County Gazette) and, later, Reuters. Tori lived for many years in Southeast Asia, the Gulf and the Middle East as a trailing diplomatic spouse and ‘stay-at-home’ mother. Witnessing the disproportionate effects of historic and ongoing conflict on existing inequalities within these communities was central to her decision to switch careers. In 2008, she gained a place on the NHS-funded doctorate in clinical psychology at the University of Leicester. Prior to training, she worked in Jordan with a governmental organisation to assess the psychological experiences of recruits to the Iraqi security forces and with non-governmental organisations, including the Japanese non-profit NICCOD, evaluating psychosocial interventions, and providing support for children and families from Iraq and Palestine. The work with NICCOD was under the clinical supervision of the Consultant Psychiatrist, Dr Numan Ali with whom she still works remotely as an associate in his Baghdad-based clinic. From 2007-2019, Tori was appointed to several boards within the Norway-UK based Children and War Foundation and served as the English language editor of the Arab Journal of Psychiatry (2008-2023). Since 2015, she has held an honorary clinical teaching post on the Leicester DClInPsy course; and, as part of advocating for her profession, holds an elected post as a Director with the Association of Clinical Psychologists UK (ACP-UK).





## SPECIAL TALKS

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### ON TRANSIENCE: THE CHALLENGE OF CHANGE

**Prof. Dr. Clara Pracana**

*Portuguese Association of Psychoanalysis and Psychoanalytical Psychotherapy,  
Lisbon (Portugal)*

#### Abstract

The purpose of this talk is to reflect upon impermanence and change, from a psychological and psycho-analytical perspective. With change, comes loss and sometimes gain. Humans don't like change, we were not hardwired for that. It makes us suffer, specially with loss that come with it. This can include many types of change, some lighter, some very difficult like unemployment, divorce, aging and the loss of beauty; others that may be really dramatic, like disease and death.

It's our duty, as professionals, to reflect about it and help others to cope with this painful reality of life.

**Keywords:** *Transience, transitoriness, change, aging, loss, disease, death, mourning.*

---

#### *Nothing Gold Can Stay*

*Nature's first green is gold,  
Her hardest hue to hold.  
Her early leaf's a flower;  
But only so an hour.  
Then leaf subsides to leaf.  
So Eden sank to grief,  
So dawn goes down to day.  
Nothing gold can stay.*

*Robert Frost*

Before we start reflecting about transience, I believe we need to agree on the concept.

The Oxford Dictionary states: transience is the state or fact of lasting only for a short time; transitoriness.

I'd like to open up a bit these notions. In this talk, transience will refer to impermanence, to change, to temporality. The important thing is: With them, comes loss; or, a few times, gain.

My purpose will be to discuss with you the challenges of change in our lives, in the lives of our patients and consequently in our work.

We all know, I suppose, that change is part of life and nothing really stays for long, starting by our own perishable bodies. But that's theoretical. Another thing is to deal with it and accept this reality. That's most of the time painful and raises anxiety or, as we say these days, stress.

Long ago, humankind started to worry about the sad realities of life, on top of all, death. Paleontologists tell us that it took a long while before humans (the Neanderthals, as it seems) started to bury their dead (chimpanzees don't worry about this). Rituals followed, to guarantee that the loved ones

will be comfortable in the afterlife. This belief constitutes a gigantic leap in terms of capacity for abstraction and symbolism.

More recently, relatively speaking, the Greek philosopher Zeno (300 BC) and the Stoics in Ancient Rome dealt extensively with impermanence, change, suffering old age, death. The core of Buddhism is similar: how to prepare for change, sickness, old age, death. All these people worried about how to live a good life and be a comfort to others.

Centuries afterwards, I don't think we're prepared for change. I asked Chat GPT plus to provide me with what were the major causes of stress. Here's what he/she/it said:

1. **Life Transitions:** Major life transitions, such as starting a new job, moving to a new city, getting married, or having a baby, can be sources of stress due to the significant changes and adjustments they entail.

2. **Workplace Changes:** Changes in the workplace, such as restructuring, layoffs, changes in leadership, or implementing new technologies, can lead to increased stress and anxiety among employees.

3. **Global Events:** Global events, such as pandemics, economic downturns, political unrest, or natural disasters, can bring about significant changes that contribute to heightened stress and anxiety on a societal level.

4. **Personal Changes:** Personal changes, such as relationship breakdowns, loss of a loved one, health issues, or financial instability, can also be sources of stress and anxiety for individuals.

5. **Statistics:** While I don't have the most current statistics, research has shown that individuals who experience multiple life changes or transitions within a short period are more likely to experience higher levels of stress and anxiety.

6. **Coping Strategies:** It's important for individuals to develop healthy coping strategies to manage stress and anxiety related to change. This may include seeking social support, practicing mindfulness and relaxation techniques, maintaining a healthy lifestyle, and seeking professional help if needed.

If you are facing significant changes in your life that are causing you stress or anxiety, consider reaching out to a mental health professional or counselor for support. They can provide guidance and tools to help you navigate through these challenging times.

I also had a look at the Holmes and Rahe Stress Scale, maybe still the most used one:

Table 1.

| Life event                            | Life change units |
|---------------------------------------|-------------------|
| Beginning or end of school            | 26                |
| Business readjustment                 | 39                |
| Change in church activities           | 19                |
| Change in eating habits               | 15                |
| Change in financial state             | 38                |
| Change in frequency of arguments      | 35                |
| Change in health of family member     | 44                |
| Change in living conditions           | 25                |
| Change in number of family reunions   | 15                |
| Change in recreation                  | 19                |
| Change in residence                   | 20                |
| Change in responsibilities at work    | 29                |
| Change in schools                     | 20                |
| Change in sleeping habits             | 16                |
| Change in social activities           | 18                |
| Change in working hours or conditions | 20                |
| Change to different line of work      | 36                |
| Child leaving home                    | 29                |
| Death of a close family member        | 63                |
| Death of a close friend               | 37                |



|                                  |     |
|----------------------------------|-----|
| Death of a spouse                | 100 |
| Dismissal from work              | 47  |
| Divorce                          | 73  |
| Foreclosure of mortgage or loan  | 30  |
| Gain a new family member         | 39  |
| Imprisonment                     | 63  |
| Major holiday                    | 12  |
| Major mortgage                   | 32  |
| Marital reconciliation           | 45  |
| Marital separation               | 65  |
| Marriage                         | 50  |
| Minor mortgage or loan           | 17  |
| Minor violation of law           | 11  |
| Outstanding personal achievement | 28  |
| Personal injury or illness       | 53  |
| Pregnancy                        | 40  |
| Retirement                       | 45  |
| Revision of personal habits      | 24  |
| Sexual difficulties              | 39  |
| Spouse starts or stops work      | 26  |
| Trouble with boss                | 23  |
| Trouble with in-laws             | 29  |
| Vacation                         | 13  |

**Score of 300+:** At risk of illness.

**Score of 150-299:** Risk of illness is moderate (reduced by 30% from the above risk).

**Score < 150:** Slight risk of illness.

(Source: en.Wikipedia)

As you can see, all of the listed predicaments are related to change, even if it may be for the better. The authors stress that the assessment may vary accordingly to the different countries and cultural contexts, which make perfect sense. However, my point is that our brains, human brains, are not hardwired for change.

When Elisabeth Kübler-Ross wrote in 1969 her best-known work “On death and dying”, she described the five stages that most individuals experience when faced with their imminent death: Denial, anger, bargaining, depression, and acceptance. These five stages have since been applied to grief, as I presume you know, and not only to terminal patients. Loss, grief, mourning.

I propose that we can help our patients through a process of change that involves loss, considering these five stages and steering them along the painful path.

In addition, as a psychoanalyst, I also think we should look at change from the perspective that Freud wrote about in 1916, in a small text titled “On Transience”. Let’s see what he tells us:

*Not long ago I went on a summer walk throughout a smiling countryside in the company of (...) a young but already famous poet. The poet admired the beauty of the scene around us but felt no joy in it. He was disturbed by the thought that all this beauty was fated to extinction, that it would vanish when winter came, like all human beauty and all the beauty and splendour that men have created or may create (Freud,S.,1916, p. 305).*

The poet got depressed with the idea that all that beauty would disappear in a few weeks. So do we in retrospect, when we remember when we were much younger and stronger, when our parents or grandparents were still with us, when we were children and careless about what life would inevitably bring. This attachment to the past makes us suffer and miss the days of yore. When we should be living and enjoying the present with a view to the future, we plunge ourselves into mourning and melancholia. What a waste of time!

Let's return to Freud again:

*I did dispute the pessimistic poet's view that the transience of what is beautiful involves any loss its worth.*

*(...) On the contrary, an increase! (...) Limitation in the possibility of an enjoyment raises the value of enjoyment (S. Freud, 1916:305)*

But Freud's arguments, much longer than I quoted, made little impression upon the poet. Freud concludes that some emotional factor was at work which was disturbing the poet's judgment.

*What spoilt (...) enjoyment of beauty but have been a revolt in [his mind] against mourning. (...) to the psychologists mourning is a great riddle (S. Freud, 1916:306)*

Freud proceeds exploring this issue. According to him, humans possess a certain amount of capacity for love (libido) which is directed to oneself when we are babies and later is diverted from ego to objects, the first being the mother: "Libido clings to its objects and will not renounce those that are lost even when a substitute lies ready to hand. Such then is mourning".

*Mourning, as we know, however painful it maybe, comes into a spontaneous end. When it has renounced everything that has been lost, then it has consumed itself, and our libido is free to replace the lost objects by fresh ones equally or still more precious (S. Freud, 1916:307)*

To know more about Freud's theory on mourning, one should read his masterpiece written a year later, titled "Mourning and Melancholia". I won't go into detail at this time, let's just mention that Freud in this text links melancholia (a major form of depression, to put it simplistically), to pathological mourning.

As a therapist, I've seen quite a number of cases that can be diagnosed as pathological mourning, e.g., an incapacity to let go of the lost object and which involves an identification with it. It's painful and can go on for many years. There's a difference, as Freud stresses, between melancholia and the normal stages of mourning.

Which brings us back to the five stages of mourning that can be applied, if only partially and not always in the same sequence, to the suffering and stress coming from change that is experienced as painful. Denial, anger, bargaining, depression and acceptance are expressions of how individual deal with change and loss. It's stressful and painful.

I propose all this suffering comes from our inability to accept and even embrace change. Change defies our self-confidence, makes us waver, it's scary.

Take the example of a divorce. It brings many changes and losses: a breakup that brings the loss of a relationship (maybe already lost years ago but one still clings to it's memory), the moving from home in certain cases, the need to share the children and the change it brings, the loss of many habits we've been accumulating for years. The change in habits, although it may seem a small thing, it's nothing of the sort. I've seen in my practice that it's one of the main challenges that a change like a divorce may bring. People cling to habits as if they were their reason of being, they entrench behind them as if their identity depends on them.

Take another example: the changes that age brings. Every look in the mirror makes us long for the days of yore. Some deny it and resort to cosmetic surgeries - I'm not judging, just noting. As with the new wrinkles that appear almost from day to day, every ache in the back reminds us how rigid and old we're becoming, every stair becomes a challenge, some movements impossible to achieve. Some people become bitter and bitter and apparently don't reach the last stage: acceptance.

Let's take another common example of change that has an emotional impact: moving house. Studies show that dealing with the uncertainty of a new environment may bring higher levels of anxiety, disorientation and even fear. On the other hand, I've seen in my clinical practice patients that welcome this kind of change and feel enthusiastic about the opportunity to decorate the new home, get a fresh start, even make new friends. I suppose it's more about the way we deal with change that matters, not so much change itself - which is a reality of life. Embracing change and not fighting it should be, in my opinion, something that we should help our patients to learn.

Every change brings loss but it's also an an opportunity to gain something new. However, sometimes - should I say most times - mourning overcomes us. Mourning is a subject that should interest us therapists, since it maybe very complex and frequently not elaborated in the healthiest manner, as I mentioned above.

To sum it up: Change being a constant of life, what can we do to help our patients (and ourselves) to deal with it? Every move or process that brings acceptance must be pursued. We must bear with the patients through the whole process of mourning and act as a mind “container” (as Wilfred Bion put it), to the mental afflictions that come with it.

There are also other techniques that may help. I’m a great believer in meditation, especially if practiced regularly. It helps prepare to accept impermanence and change. It’s best to start early, and not to wait for change and loss to take place. The regular practice (preferably daily) is a kind of protection against the suffering and the anxiety that will come eventually. If you want to know more about this subject, we had a lecture on Psychoanalysis and Buddhism at InPact 2022, during which a colleague and I delved into the subject. We established a strong connection between Bion and his “theory of thinking” and the buddhist teachings. The therapist, as I mentioned, should act as container for the stress and fears that come with change. The main transformation, however, is to be able to accept.

In the same vein, I find also very helpful a model entitled Acceptance and Commitment Therapy, developed by Steven C. Hayes years ago. He asserted that “negative” human emotions should be experienced as a part of the whole life. As he wrote in 2009: “Acceptance, mindfulness, and values are key psychological tools needed for that transformative shift.” (Psychology Today, 9/1/2009).

A famous Portuguese psychoanalyst, my mentor and friend, used to say that we should have a few theories and models in the back of our minds. They’ll flow naturally in the therapeutic setting when the situation calls.

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## **Biography**

Clara Pracana is a psychoanalyst, psychotherapist, coach, author and lecturer. She was born in the Azores, Portugal. She has a Ph.D. in Applied Psychology and a Masters in Clinical Psychology and Psychopathology. She is a founding and full member of the Portuguese Association of Psychoanalysis and Psychoanalytical Psychotherapy, Portugal. She is a regular lecturer on psychoanalytical topics and has published several papers and four books. She is also a certified coach with the International Coaching Community (ICC). As a psychoanalyst, counselor, and coach, she has a private practice in Lisbon. Her research addresses anxiety, guilt and shame, depression, emotional intelligence, leadership, change, motivation, and group dynamics.





# THE ROLE OF THE EXPERT CLINICAL NEUROPSYCHOLOGIST IN THE UK CIVIL COURTS

**Prof. Dr. Michael Wang**

*Emeritus Professor of Clinical Psychology, University of Leicester (United Kingdom)*

## Abstract

In the UK, clinical neuropsychologists are often instructed by personal injury solicitors in cases of acquired or traumatic brain injury. Their role includes neuropsychological assessment and examination to determine condition and prognosis, as well as to advise on rehabilitation and future care needs. This leads directly to estimates of compensation to cover costs for rehabilitation and future care for the rest of the client's life. Because the UK court system is adversarial, there are usually two neuropsychological experts, one representing the client/patient, and one representing the defendant (usually an insurance company). This presentation will summarise common neuropsychological tests and profiles in acquired brain injury cases. It will also describe the various medico-legal consultation phases and outcomes.

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## Biography

Prof. Michael Wang, BSc(Hons), MSc(Clin.Psy), PhD, C. Psychol., FBPSS, is Emeritus Professor of Clinical Psychology in the Clinical Psychology Unit, Centre for Medicine, University of Leicester, and former Director of the National Health Service-funded Doctoral Postgraduate Clinical Psychology Training Course (2005-2014). He is a former Chair of the Division of Clinical Psychology of the British Psychological Society. Prof. Wang is also a full practitioner member of the BPS Division of Neuropsychology and a member of the BPS Division of Health Psychology. He is Chair of the Association of Clinical Psychologists UK. He has worked as a clinical psychologist for 40 years. Prior to his appointment in Leicester he was Director of the 6-year, integrated Doctoral Clinical Psychology Training Course at the University of Hull. Throughout his academic career he has maintained an Honorary Consultant role in the NHS, treating patients with anxiety disorders, depression and obsessional compulsive disorder. He has more than 20 years' experience of examining patients with traumatic brain injury for the UK courts. He obtained his three degrees from the University of Manchester: following graduating with a BSc in Psychology in 1978 he began his professional postgraduate training in Clinical Psychology in the Faculty of Medicine. Subsequently he completed a research PhD in 1990 which investigated learning and memory in alcoholics. Over recent years Prof Wang has gained an international reputation for his research on cognitive and memory function during general anaesthesia. In 2004 he organized the 6th International Symposium on Memory and Awareness in Anaesthesia and Intensive Care (in Hull) – the foremost international forum for clinical research in this particular field. He has held appointments on a number of prominent committees in the British Psychological Society including the professional accrediting body for clinical psychology training, and a committee that is in the process of determining national standards for competence in the use of neuropsychological tests. He has served as an expert advisor on a NICE (UK) Committee in relation to the monitoring of depth of anaesthesia and also as an expert member of the Royal College of Anaesthesia's National Audit Project 5 (a national audit of anaesthetic awareness reports). In 1999 he was made Fellow of the British Psychological Society and is also a Fellow of the Royal Society of Medicine. In 2015 he was awarded the Humphry Davy Medal by the Royal College of Anaesthetists for his contribution to the understanding of accidental awareness during general anaesthesia. Prof. Wang has published more than 60 papers in peer-reviewed journals, and numerous book chapters. He has been an invited speaker at international conferences on more than 30 occasions. In collaboration with colleagues he has won more than £1.2 million in research funding. He has supervised more than 40 doctoral research projects over the past 25 years. He has been a regular contributor and session chair at recent InFACT conferences, and recently joined the conference team as a co-organiser.



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The background features a teal, textured surface with visible brushstrokes and some cracking. On the left side, there are large, expressive brushstrokes in shades of orange and red. A white square frame is partially visible, overlapping the orange brushstrokes and the teal background.

# Oral Presentations





## PSYCHOTHERAPEUTIC PLAYBACK THEATRE: THEATRE AS THERAPY

António-José Gonzalez<sup>1</sup>, Margarida Pedroso de Lima<sup>2</sup>, & Luís Preto<sup>1</sup>

<sup>1</sup>*Ispa, Instituto Universitário, ApsyCI (Portugal)*

<sup>2</sup>*Faculdade de Psicologia e C. da Ed. da Universidade de Coimbra, CINEICC (Portugal)*

### Abstract

Playback Theatre (PT) will soon accomplish its 50 anniversary. From the very beginning, its effects on both audiences and performers led to the use of the expression “the therapeutic question”, referring to feedback related to many of the therapeutic factors and effects of group psychotherapies. Acknowledging its therapeutic potentiality, for more than a decade now, a therapeutic version of PT, called Psychotherapeutic Playback Theatre (PPT), was developed and practiced. In Portugal, a research project on the topic of PPT, funded by the Foundation for Science and Technology (FCT), was initiated in 2023. Its preliminary results will be presented in this paper. We will start by sharing a short depiction of the project, then follow it with an abstract of the systematic review of the literature published in the context of the project, and conclude by presenting some data concerning the participants involved in the PPT groups since established. The latter includes both the group of psychotherapists who received the first-ever training on PPT offered in Portugal and the therapy-centered participants of the groups that were established throughout the country.

**Keywords:** *Group therapy, Psychotherapeutic Playback Theatre, impact study, expressive arts.*

---

### 1. Introduction

In the middle of the 1970s, in New York, Jo Salas and Jonathan Fox presented their model of improvised community theatre, inspired both by Psychodrama and oral tradition, which they called Playback Theatre (PT) (Salas, 2013; Fox, 1994). Although the main goals of this initiative were community-centered, it became clear that many of the participants would experience effects that resemble group therapy advantages and effects, in what became known as the “Therapy Question” (Fox, 2013). These effects became, throughout the years, a subject of research in many different contexts and countries, and the benefits of participating in PT sessions were documented in different areas.

Different authors showed that PT, among other effects, can: facilitate and improve empathy, while also facilitating a change within reactions to aggression among children and adolescents in forensic contexts (Bornmann & Crossman, 2011); facilitate interventions among people experiencing mental illnesses (Moran & Alon, 2011); facilitate the development and understanding of empathy among adolescents in the school context (Ng & Graydon, 2016); help reduce both social and personal stigma associated with people living with mental disorders (Yotis et al., 2017); facilitate an improved mutual understanding between police officers and former prisoners, culminating in improved interactions / attitudes (Smigelsky & Neimeyer, 2018); help promote both mental and emotional well-being among older adults (Chung et al., 2018), as well as their social involvement, personal transformation and creativity (Keisari et al., 2020), and facilitate group cohesion, empathy, construction of new meanings, thus assisting in the therapeutic processes in general, including that of group therapy (Gonzalez et al, 2022).

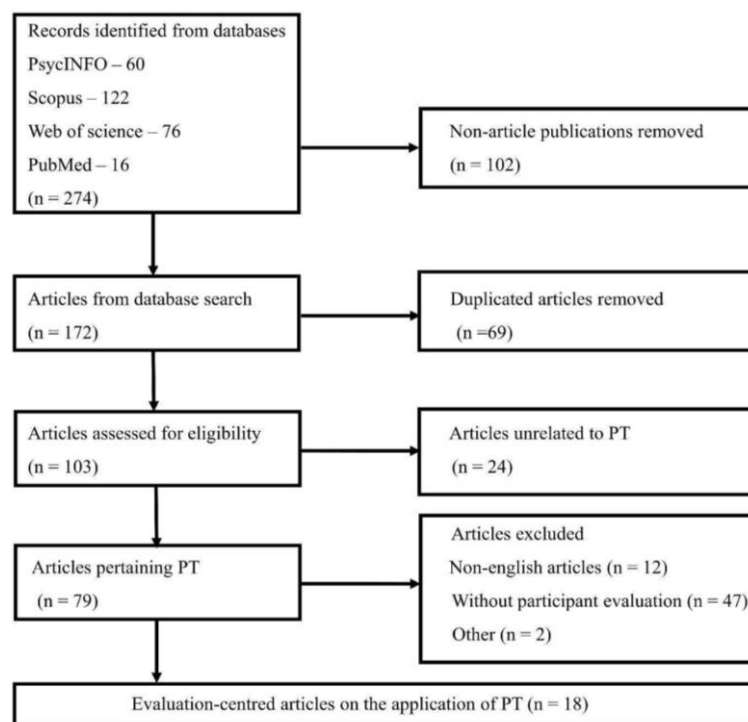
These research initiatives were pivotal in promoting the appearance of Psychotherapeutic Playback Theatre (PPT) (Kowalsky et al., 2022), as well as in the building of the research-grant application submitted in 2021 by the authors of this paper to the Portuguese Foundation for Science and Technology (FCT). Having been approved said research project will reach its end in 2024 (FCT Exploratory Project “Therapeutic Playback Theatre: Impact study”, reference 2022.07713.PTDC). In the context of this project, around 30 group psychotherapists were recruited and trained in the therapeutic application of PT. Of this group of trainees, some implemented therapeutic groups that followed this new format. The main aim of the project is to assess both the most impactful effects that PPT has on its participants, and the experience of everyone who took part in its implementation, therapists and participants alike. Furthermore, an Implementation Manual for therapists, as well as a systematic review of literature on the topic of Playback Theatre applications were produced. We will now start by presenting an abstract of the literature review.

## 2. Systematic review of literature

As part of the above-mentioned project, and to facilitate the preparation of the training program, we sought to identify all scientific literature published since 1990 on the topic of Playback Theatre applications. For that, we used four well-known electronic databases (PsycINFO, Web of Science, PubMed, and Scopus), and the keywords “playback theater” OR “playback theatre”, searching for “title”, “abstract”, and “keywords”.

We started with a universe of 274 written documents, 172 of which were from peer-reviewed journals. Eliminating duplicated articles brought the number of papers to 103. However, only 79 were found to have been focused on PT. We then eliminated 12 non-English written works, 47 that did not use any kind of evaluation tools, and 2 additional articles for other reasons, which brought our search to a final tally of 18 articles (see Figure 1).

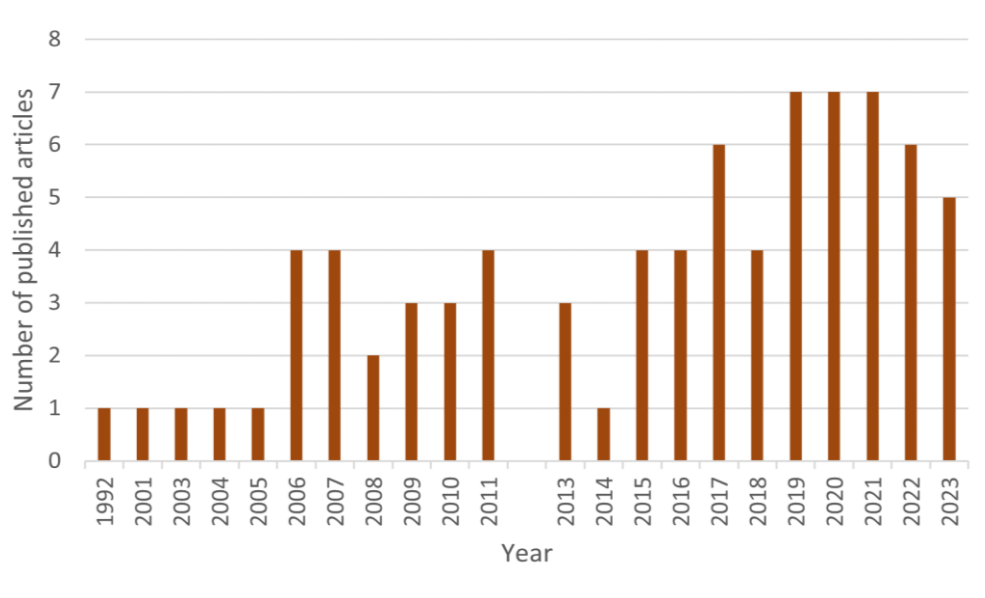
Figure 1. Selection criteria for PT literature review (from Gonzalez, Lima, & Preto, in press).



The main results of this review can be seen in our final document, soon to be published in *The Arts in Psychotherapy* (Gonzalez, Lima, & Preto, in press). For the purpose of this presentation, we will simply underline the fact that, as can be seen in Figure 2, the number of publications has been increasing throughout the years, with research being conducted in more than 20 countries, as well as with audiences/participants of different ages groups, from children to older adults. Some of the contexts of application were primary schools, high schools, universities, prisons, older adult centers, communities of people affected by natural disasters, and personal development groups, among others.

Furthermore, we found effects of Playback Theatre in such diverse areas as lowering symptoms associated with depression, anxiety, PTSD, and ADHD; enhancing self-esteem, self-concept, meaning and purpose in life, confidence, creativity and spontaneity, comprehension of others and of the world; increasing the understanding of the emotions of others, empathy, and the ability to express oneself. Several beneficial aspects were found concerning communitarian issues, raising the sense of community, generating mutual understanding, and, in some cases, improving relations between groups dealing with conflicting views, such as former prisoners and police officers.

Figure 2. Number of publications (following chosen criteria) on PT since 1992 (from Gonzalez, Lima, & Preto, in press).



### 3. Training

One of the most critical components of this project consisted of recruiting therapists motivated to receive training in the therapeutic application of Playback Theatre. Knowing that we had limited time for the training process, we focused our recruitment by targeting individuals with previous experiences with (therapeutic) groups, and preferably knowledgeable in Expressive Arts, hence at ease with theatrical forms. We gathered more than 30 professionals and started the training in June 2023, which was concentrated on weekends, so that people residing in cities other than Lisbon could take part. The training is still going on, in the form of supervision meetings, intervision, and moments centered on the sharing of different experiences. More than 20 therapists successfully finished their training.

The training was delivered by two experts in Psychotherapeutic Playback Theatre (PPT), who were trained at the Israel Institute of Psychotherapeutic Playback Theatre and who, since, have authored the main books and papers on this subject (Kowalsky et al., 2022; Keisari et al, 2022). One of the experts is a dramatherapist and conductor of PT groups with older adults, while the other is one of the founders of PPT. Additionally, one of the leading researchers from the project, a psychodramatist and theatre director for more than 20 years and a playback for 7 years, also provided training in the therapeutic application of PT. Training merged theoretical contents with the practice of the formats of PPT, doing so by using the training group members' shared personal stories to approach the dynamics of a therapeutic group.

As part of the implementation of the project, a handbook for PPT trainees, but that can be used by other audiences interested in group psychotherapy, was created and published (Lima, Gonzalez, & Preto, 2023). It is available in an Open Access format through the following web address (<http://hdl.handle.net/10400.12/9510>). This manual covers the general framework of PT, as well as some main concepts from Narrative Therapy, Psychodrama, Dramatherapy, the power of the Expressive Arts in therapy, the contributions of Humanistic Psychology, and the specific aspects of group psychotherapy. Its main aim is to facilitate the work of the PPT psychotherapists, through the organization of a proposed therapeutic sequence, inspired in a model of group developmental stages.

Being a handbook produced in the context of a research project, it also contains a set of suggestions for a research protocol, including a research design and instruments for data collection. This manual has been used by the trainees in the implementation of their therapeutic groups and their research designs.

### 4. Implementation of therapeutic groups

At the moment these lines are being written, PPT groups are being implemented. Starting in January 2024, most of the trained therapists began, usually in teams of two or three therapists, their own PT therapeutic groups, thus honoring the challenge that was issued during the recruitment and training stages. Groups are formed by adults and are being developed in both private clinics and public health facilities. Extreme caution was taken in terms of ethics, with informed consent forms being delivered to all



participants, with all the needed information about the process and the research design, inviting people to take part in it.

The trained therapists are being accompanied in supervision, using an online platform, which makes it possible for all trainees to participate. Groups are being developed, or expected to start soon, throughout the Portuguese territory, from North to South, including the islands.

## 5. Preliminary results

In terms of its execution, the project, which will finish at the beginning of the second semester of 2024, has been a success. Most of the outcomes and goals are either finished (Implementation Manual, Systematic Literature Review, training, implementation of at least 6 PPT groups, 2 communications in international meetings) or ongoing (assessment papers, English version of the Manual, communications of the results in more national and international meetings and congresses).

There are currently 12 groups already active, and about three more are expected to start, including in Porto, Aveiro, Coimbra, Leiria, Lisboa, Cascais, Faro, and Funchal. All in all, we expect that almost 100 participants will be involved until the end of this year, most of them finishing at least 12 sessions of PPT, and thus contributing to our impact study. We are using a control group, to better assess the impacts of this new form of group therapy on participants.

Apart from quantitative measures, qualitative methods are being used, including interviews and analysis of audiovisual documents recorded during the sessions. These results will start to be published throughout this year.

## 6. Discussion

The use of arts, especially theatre, in psychotherapeutic contexts, has been developing in recent years, as we could confirm in the number of publications found in our literature review. They are a resource that brings relief to many, and that complements the exclusive use of talking therapies. Deepening our knowledge of the specific mechanisms that underlie the impacts of expressive arts is only possible with thorough research, including quantitative and qualitative data collecting.

Furthermore, group psychotherapy continues to be an invaluable format, even more so in times like ours, where societies are creating citizens more and more closed in individuality, and closed to the sense of otherness. To disseminate not only this new format of group psychotherapy but also the scientific studies that validate this and other therapies is a joint task to be done by the practitioners and researchers communities all together.

### *Acknowledgments*

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We want to acknowledge the extraordinary work of our trainers Nir Raz and Shoshi Keisari, all the motivation of the training therapists, and all the participants who accepted to be part of this research project, making it possible to contribute to the knowledge in the area of group psychotherapy through the arts.

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# HOW DOES SOLUTION-FOCUSED MANAGEMENT INFLUENCE FOLLOWERSHIP BEHAVIOR?

**Minoru Nishinobo**

*Department of Management & Organisation, National University of Singapore Business School  
(Singapore)*

## Abstract

The purpose of this research is to: (1) empirically clarify how solution-focused/problem-focused communication what is called “the solution management” in the workplace influences the followership behavior of Japanese non-managers and (2) empirically clarify the difference in the followership behavior of Japanese non-managers focusing on the difference in the nationalities of their manager. To fulfill these purposes, we took an empirical approach to verify hypotheses derived from past research. We conducted 300 full-time employees in Japanese organizations from a diverse range of industries to participate in this research through the Internet survey company. However, we excluded some answers because inappropriate responses were included. We wanted to examine the followership behavior of Japanese followers toward their managers, so we selected the respondent who was in a non-managerial position and whose manager was in a managerial position. Thus, the final analysis included 273 responses. The results of our analysis revealed the following two points. First, solution-focused management has a positive effect on followership (active behavior). Second, followers were more likely to take followership (critical behavior) and followership (considerate behavior) when their manager's nationality was not Japanese.

**Keywords:** *Solution-focused management, followership behavior, nationality of manager.*

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## 1. Introduction

This research aims to empirically examine how solution-focused management in the workplace influences the followership behavior of Japanese non-managers. And how differences in the followership behavior of Japanese non-managers depend on whether the managers' nationality is Japanese or non-Japanese. The study of followership has been inadequate because it has received less attention than leadership research (Tanoff and Barlow, 2002). In recent years, followership has been given attention in different countries (Ehrhart and Klein, 2001) and research is slowly accumulating. However, Matsuyama and Mori (2022) pointed out that fewer studies have examined the independent variables of followership than those that have examined the outcome of followership. In order to develop followership theory in the future, research on the independent variables of followership will be necessary.

## 2. Literature review

### 2.1. Definition of followership

Most followership studies to date have defined followership as the influence or act of influence exerted by a follower (Matsuyama, 2016). For example, Crossman and Crossman (2011) defined it “as the opposite of leadership in a leadership/followership continuum, a direct or indirect influential activity, or as a role or a group noun for those influenced by a leader”. Looking at the definitions in Japan, followership is defined as “followers share organizational goals with leaders and act toward those goals to directly or indirectly influence the leader and the organization” (Nishinobo and Furuta, 2013). This research would be based on the definition of Nishinobo and Furuta (2013). Because their definition of followership is based on interviews with people working in Japanese organizations.

### 2.2. Independent variable of followership

Researchers have shown to have a positive influence as independent variables of followership so far are affective commitment (Nishinobo, 2014; 2015a; 2023), leadership (maintenance behavior)

(Nishinobo, 2014; 2023), official position (Nishinobo, 2015a; 2022; 2023), years of nursing experience (Nishinobo, 2022), existence of key persons (Nishinobo, 2023), middle managers' behavior (strict and rigorous management behavior, management behavior of trust and approval) (Persol Research and Consulting, 2019). As reviewed above, there is less research on the independent variables of followership than the outcome of followership (Matsuyama and Mori, 2022; Matsuyama et al., 2023). Herdian et al. (2022) reviewed past research on independent variables and dependent variables of followership, and similar trends were found. This research focuses on solution-focused/problem-focused communication, which is a workplace-level variable. That is why past research suggests that solution-focused/problem-focused communication may be an independent variable of followership.

### **2.3. Solution-focused management**

As Kitai et al. (2017) point out, the effects of past research on solution-focused management have not been measured using a large sample size, and only successful cases have been reported. Kitai et al. (2017) examined an empirical study. The results of the analysis showed that solution-focused management didn't influence proactive behavior. However, the interaction between goal interdependence and solution-focused communication had a positive effect on proactive behavior. We point out several problems in their study. First, the measurement scale of job crafting was used in this research. Furthermore, only two items were being used for each solution-focused/problem-focused communication questionnaire. That's why the reliability problem-focused communication was low at 0.528. Therefore, valid and reliable measurement scales for solution-focused management should be used in future research.

## **3. Theory and hypotheses**

### **3.1. The effect of solution-focused approach on followership**

Proactive behavior is seen as one element of followership behavior. For example, Uhl-Bien et al. (2013) categorized followership behavior into nine elements, and one of them is proactive behavior. Although this research differs from the above studies in its definition and positioning of followership, there is no problem in considering proactive behavior as an aspect of followership. This is because proactive behavior is similar to the concept of followership (active behavior), which is the position of this research. The definition of followership in this research is "followers share organizational goals with leaders and act toward those goals to directly or indirectly influence the leader and the organization". In other words, organizational goals are shared between leaders and followers, and a state of high goal dependence is assumed. In light of these arguments, we proposed the following:

- Hypothesis 1: Solution-focused management positively influences followership (active behavior).

### **3.2. The effect of the nationality of the manager on followership**

We couldn't find that kind of research in past research that Japanese followers do followership behavior toward foreign managers. Komatsu and Kougo (2013) reported that Japanese followers tend to feel positive about foreign managers' clear goal setting, division of roles, open communication, and positive feedback. In other words, Japanese followers may find it easier to take followership behavior when their manager is a foreigner. In light of these arguments, we proposed the following:

- Hypothesis 2: Japanese followers take followership behavior when their manager is a foreigner.

## **4. Methods**

### **4.1. Participants and procedure**

We wanted to examine the followership behavior of Japanese followers toward their managers, so we selected the respondent who was in a non-managerial position and had a manager in a managerial position. Thus, the final analysis included 273 responses. The survey was conducted on February 22, 2023. The web survey screen provided explanations about ethical considerations and guarantees of anonymity, and consent for participation in the survey was confirmed.

### **4.2. Measures**

Affective commitment was used as a control variable in this research because we wanted to examine the influence of purely solution-focused management on followership. This is because affective commitment is an independent variable of followership and proactive behavior. We used Kitai's (2014) measurement scale for affective commitment. A 5-point scale of responses (from 1 = I don't think so at all

to 5 = I think so very much) was used against the 3 question items. We used Kitai’s (2020) measurement scale of solution-focused management. Kitai (2020) developed a reliable and valid instrument to measure solution-focused/problem-focused communication. A 5-point scale of responses (from 1: not at all agree to 5: completely agree) consisted of a total of 14 items with 7 items each for solution-focused/problem-focused communication. We used the Persol Research and Consulting’s (2019) measurement scale of followership. This scale is based on Nishinobo (2015b) with modifications. Nishinobo’s (2015b) measurement scale had 53 items, and some of the questions were difficult for business persons to answer. The measurement scale revised by Persol Research and Consulting (2019) overcame these problems and simplified them. Parsol Research and Consulting (2019) conducted a questionnaire survey (N = 2,000). After analysis, the reliability of the scale showed sufficient internal consistency. That’s why we use this scale in this research. The items of followership are 25 total including 12 items of followership (active behavior), 7 items of followership (critical behavior), and 6 items of followership (considerate behavior). A 5-point scale of responses (from 1: never to 5: always) was used against the 25 question items.

## 5. Results

The average age of the participants was 36.04 years (SD = 8.2). In terms of gender, there were 148 men (54.2%) and 125 women (45.8%), with 202 Japanese (74.0%) and non-Japanese (26.0%) supervisors, 64 (23.4%) with 0 to 4 years of service, 61 (22.3%) with 5 to 9 years, 56 (20.5%) with 10 to 14 years, 44 (16.1%) with 15 to 19 years, 28 (10.3%) with 20 to 24 years, 13 (4.8%) with 25 to 29 years, and 7 (2.6%) with 30 years or more. We first checked the ceiling and floor effects for all the questions and found no problems. Subsequently, we conducted an exploratory factor analysis of solution-focused management and followership. After analysis, each two and three factors were extracted with an eigenvalue greater than 1. Since both the factor structures were as clear as a priori dimension. Based on the results of the exploratory factor analysis, the number of factors for solution-focused management and followership were set to 2 and 3, respectively, to determine the goodness of fit. Solution-focused management was CFI=.923, GFI=.878, AGFI=.831, RMSEA=.086, AIC=228.0, and followership was CFI=.897, GFI=.822, AGFI=.788, RMSEA=.076, AIC=803.6. Thus, we judged the goodness of fit was within the acceptable range.

Table 1. Means, standard deviations, reliability coefficients, and correlation coefficients.

|  | Mean | SD   | Cronbach $\alpha$ | 1     | 2    | 3     | 4     | 5     | 6     | 7     |
|--|------|------|-------------------|-------|------|-------|-------|-------|-------|-------|
| 1 Gender dummy(1:Male)   | 0.54 | 0.50 |                   |       |      |       |       |       |       |       |
| 2 Length of Service(1:5-9 years, 2:10-14 years, 3:15-19 years, 4:20-24 years, 5:25-29 years, 6:more than 30 years) | 1.92 | 1.60 |                   | .16** |      |       |       |       |       |       |
| 3 Affective Commitment   | 2.88 | 0.86 | 0.77              | .08   | .04  |       |       |       |       |       |
| 4 Solution-Focused communication   | 2.79 | 0.87 | 0.91              | .03   | .03  | .63** |       |       |       |       |
| 5 Problem-Focused communication  | 2.94 | 0.74 | 0.85              | -.03  | -.03 | .41** | .55** |       |       |       |
| 6 Followership (Active Behavior)   | 2.96 | 0.73 | 0.93              | .04   | .03  | .56** | .67** | .53** |       |       |
| 7 Followership (Critical Behavior)   | 2.59 | 0.79 | 0.89              | .03   | .06  | .33** | .45** | .44** | .60** |       |
| 8 Followership(Considerate Behavior)   | 2.49 | 0.87 | 0.89              | .03   | .03  | .35** | .57** | .43** | .64** | .71** |

Note: \*\*p<0.01

Table 2. Hierarchical multiple regression analysis to followership.

| Variable   | Followership (Active Behavior) |          |          | Followership (Critical Behavior) |          |          | Followership (Considerate Behavior) |          |          |
|--|--------------------------------|----------|----------|----------------------------------|----------|----------|-------------------------------------|----------|----------|
|  | Model1                         | Model2   | Model3   | Model1                           | Model2   | Model3   | Model1                              | Model2   | Model3   |
| Gender (1 : Female)  | 0.04                           | -0.01    | 0.01     | 0.03                             | 0.00*    | 0.02     | 0.04                                | 0.01     | 0.03     |
| Years of Service (1: 0-4 years, 2: 5-9 years, 3: 10-14 years, 4: 15-19 years, 5: 20-24 years, 6: 25-29 years, 7: more than 30 years) | 0.02                           | 0.01     | 0.01     | 0.05                             | 0.04     | 0.05     | 0.01                                | 0.00     | 0.01     |
| Affective Commitment   |                                | 0.56***  | 0.20***  |                                  | 0.33     | 0.05     |                                     | 0.35***  | -0.02    |
| Solution-Focused Communication   |                                |          | 0.42***  |                                  |          | 0.25**   |                                     |          | 0.47***  |
| Problem-Focused Communication  |                                |          | 0.22***  |                                  |          | 0.28***  |                                     |          | 0.18**   |
| Adjust R <sup>2</sup>  | -0.01                          | 0.31***  | 0.50***  | 0.03*                            | 0.13***  | 0.26***  | 0.02*                               | 0.14***  | 0.34***  |
| F value  | 0.31                           | 31.12*** | 46.32*** | 3.38*                            | 11.13*** | 17.13*** | 2.86*                               | 12.19*** | 24.47*** |

Notes: \*\*\*p<0.001, \*\*p<0.01, \*p<0.05; VIF<2.304

Table 1 shows the mean, standard deviation, correlation coefficient, and reliability coefficient for each variable used in this research. We measured the reliability of the scale based on the two-factor model of solution-focused management and the three-factor model of followership. We confirmed the sufficient reliability of each scale. Thus, we considered that each measurement scale ensured a certain degree of internal consistency. Therefore, we decided to use the mean value of the items comprising each factor as the variable score for subsequent analyses. The reliability coefficient results also confirm that the

measurement scale for solution-focused management developed by Kitai (2020) is sufficiently reliable in this research. Finally, we used multiple regression to test our hypothesis 1 (Table 2). The results of the analysis showed that solution-focused/problem-focused communication, or solution-focused management, had a positive influence on followership (active behavior). Therefore, Hypothesis 1 was supported. In addition, solution-focused management influences all dimensions of followership. Thus, solution-focused management was shown to be an independent variable of followership. We also confirmed that collinearity was ruled out, as the VIF values were under 2.304. A t-test was performed to test hypothesis 2. The results showed that followers were more likely to engage in followership behavior (critical behavior) ( $t(211) = 3.02, p < 0.01$ ) and followership (considerate behavior) ( $t(211) = 2.93, p < 0.01$ ) when their managers were non-Japanese (Table 3). However, there was no statistically significant difference in followership (active behavior). Hypothesis 2 was partially supported.

Table 3. T-test for differences in the nationality of the manager.

|                       |              | Followership<br>(Active behavior) |         | Followership<br>(Critical behavior) |         | Followership<br>(Considerate behavior) |         |
|-----------------------|--------------|-----------------------------------|---------|-------------------------------------|---------|--|---------|
|                       |              | Mean                              | t value | Mean                                | t value | Mean                                   | t value |
| Manager's Nationality | Japanese     | 2.94                              | -0.66   | 2.51                                | -3.02** | 2.40                                   | -2.93** |
|                       | Non-Japanese | 3.00                              |         | 2.83                                |         | 2.74                                   |         |

Notes: \*\*  $p < 0.01$

## 6. Discussion

### 6.1. Discussion of study 1

Solution-focused communication promotes positive emotions and suppresses negative emotions by finding solutions to problems. It also enhances self-efficacy in problem solving. Furthermore, solution-focused communication has the effect of promoting further solution-focused communication statements (Kitai et al., 2017). Many followers have high levels of positive emotions and problem-solving self-efficacy in workplaces where are taken solution-focused communication. As a result, followers may be more likely to take positive action.

### 6.2. Discussion of study 2

We would like to discuss the results of Hypothesis 2 from the perspective of organizational socialization. Chao et al. (1994) presented the following 6 dimensions of learning content for recruits as direct and primary outcomes of organizational socialization. 1) Politics, 2) History 3) Relationships 4) Organizational goals and values 5) Language 6) Job proficiency. Non-managerial position of Japanese followers were not necessarily newcomers in this survey, but they may undergo more organizational socialization if they have non-Japanese managers. Japanese followers with foreign managers may be learning new 2) history and 4) organizational goals and values in the process of organizational socialization. As Komatsu and Kougo (2013) stated, because of the clear goal setting and division of roles, open communication, and positive feedback provided by foreign managers, Japanese followers may have experienced new organizational socialization, and by adapting to it, they may have increased their organizational commitment and become highly satisfied with their job. As a result, Japanese followers may have taken more followership behaviors.

### 6.3. Practical implications

The practical implications of the above research results are two points. First, each department should attempt to share the organizational goals it has permeated with all organizational members. Second, organizational development based on solution-focused management should be implemented. The content of communication in the workplace is intended to develop an organization that prioritizes solution-focused communication over problem-focused communication. These are expected to elicit more followership behavior from followers.

### 6.4. Limitations and future research direction

The limitations and future research direction of this research are described in five points. First, there was a bias in the personal attributes of the data collected. Only 71 (26.0%) of  $N = 273$  Japanese followers had a foreign manager. For this reason, the results of this research can't be discussed by applying them to all Japanese workers immediately. Second, this research only analyzes the relationship between the nationality of the manager and the followership behavior of Japanese followers from an empirical aspect. This research didn't provide any background or mechanism as to why the nationality of the manager makes a difference in the followership behavior of Japanese followers. Therefore, further analysis from both empirical and qualitative perspectives is needed. Third, this research didn't take into account the manager's leadership. When comparing the followership behavior of Japanese followers

across nationalities of their managers, we should consider the manager's leadership in the future. Fourth, this research analyzed the results of the followers' responses. Future research should examine the followership behavior of followers as seen by their leader. Fifth, we can't determine how goal sharing should be done. For example, it is not possible to determine whether it is more effective to share goals in a concrete or abstract way, or whether it is more effective to share both at the same time. Future research will also need to be conducted on the methods and frequency of goal sharing by leaders.

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## THE MEMORY DIVISIONS OF TULVING VERSUS SQUIRE – ADVANTAGES AND DISADVANTAGES FOR NEUROPSYCHOLOGY AND MEMORY ASSESSMENT

**Hans J. Markowitsch<sup>1</sup>, & Angelica Staniloiu<sup>1,2</sup>**

<sup>1</sup>*Department of Psychology, University of Bielefeld/Bielefeld (Germany)*

<sup>2</sup>*Department of Psychiatry and Psychotherapy, Oberberg Clinic/Hornberg (Germany)*

### Abstract

Though already at the beginning of the 20<sup>th</sup> century first attempts on long-term memory subdivisions had been proposed, it was only in the 1970ies and 1980ies that such divisions were recognized by a wide audience. From Endel Tulving came in 1972 the division of memory into episodic and semantic memory, from Mishkin and Petri in 1984 that on a ‘memory’ and a ‘habit’ system. Larry Squire then a bit later suggested a very elaborated outline of memory subdivisions. Commonalities of all proposals are the distinction between simple and complex, or unconsciously/implicitly versus consciously/explicitly acting. Tulving – in interaction with one of the authors (HJM) – nowadays divides into five long-term memory systems, of which two are unconscious (“anoetic” in his terminology), two conscious (“noetic”) and one self-conscious (“autonoetic”). These are – from simple to complex: ‘priming’, ‘procedural memory’, ‘perceptual memory’, ‘semantic memory’ and ‘episodic memory’. Squire’s subdivisions of memory are – compared to Tulving’s – both more simple in one way and more complex in another way: As a more simple distinction he uses the terms ‘declarative’ (consciously processed) and ‘nondeclarative’ (unconsciously processed) memory. He then divides ‘declarative memory’ into semantic and episodic memory, or memory for facts versus for events. ‘Nondeclarative memory’ he divides – similarly to Tulving – into ‘procedural’ and ‘priming’ memory, but then in addition into ‘simple classical conditioning’ and ‘nonassociative learning’. Advantages of Tulving’s model are the simpler divisions, and – above all – the clear separation of ‘episodic’ from ‘semantic’ memory. This last distinction is of major importance, as both neurological and psychiatric are usually not disturbed in ‘declarative memory’ in general, but only in its episodic part, while semantic facts are preserved. Therefore, to speak of impairment in ‘declarative memory’ is not useful. The further detailed diversification of ‘nondeclarative memory’ in Squire’s model is theoretically relevant, but of not much use in the general clinical practice (and is rarely ever tested in patients). Therefore, Tulving’s model of memory subdivisions is recommended from a practical-clinical point of view.

**Keywords:** *Episodic memory, semantic memory, procedural memory, priming.*

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### 1. Introduction

Everyone is familiar with the distinction of memory into short-term and long-term memory. Short-term memory lasting for seconds or incorporating about five bits of information (Miller, 1956; Cowan, 2001). Repeating a short telephone number being an example. Long-term memory on the other hand is seen as principally unlimited in capacity and time. While this distinction still is seen as widely sufficient for people outside the memory field, there was a movement towards a refinement and towards more distinction of long-term memory since more than a century (Ziehen, 1908; Schneider, 1928). Schneider (1928), for example, observed and tested the memory capacities of war veteran patients from World War I and concluded that they may be poor on verbal memory tests, but still show some automated or routine forms of memory. Based on such detailed observations on old memory researchers (e.g., also Semon, 1904), Tulving in 1972 came to the conclusion that memory is not a unity, but has to be divided into an episodic and a semantic memory system (see also Staniloiu et al., 2020a). Eleven years later he refined this assumption in a ground-breaking monography on episodic memory (Tulving, 1983). A year later and based on animal research, Mishkin and Petri (1984) so to say reinvented the distinction of Schneider from 1928 and proposed the distinction between a ‘memory’ and a ‘habit’ system – implying a conscious system of remembering and an unconscious system which produces schematized habits.



This distinction was thereafter taken up by both Endel Tulving and by another eminent memory researcher, Larry Squire. Both of them then developed frameworks or models of memory systems which included the same, “untouched” short-term memory system and a number of long-term memory systems (Tulving & Markowitsch, 1998; Tulving, 2002, 2005; Squire et al., 1994; Squire, 1993).

## 2. The Models

Tulving, in interaction with the first author (HJM) developed the long-term memory model depicted in Figure 1 and Squire the one depicted in Figure 2.

Figure 1. The long-term memory systems after Tulving.

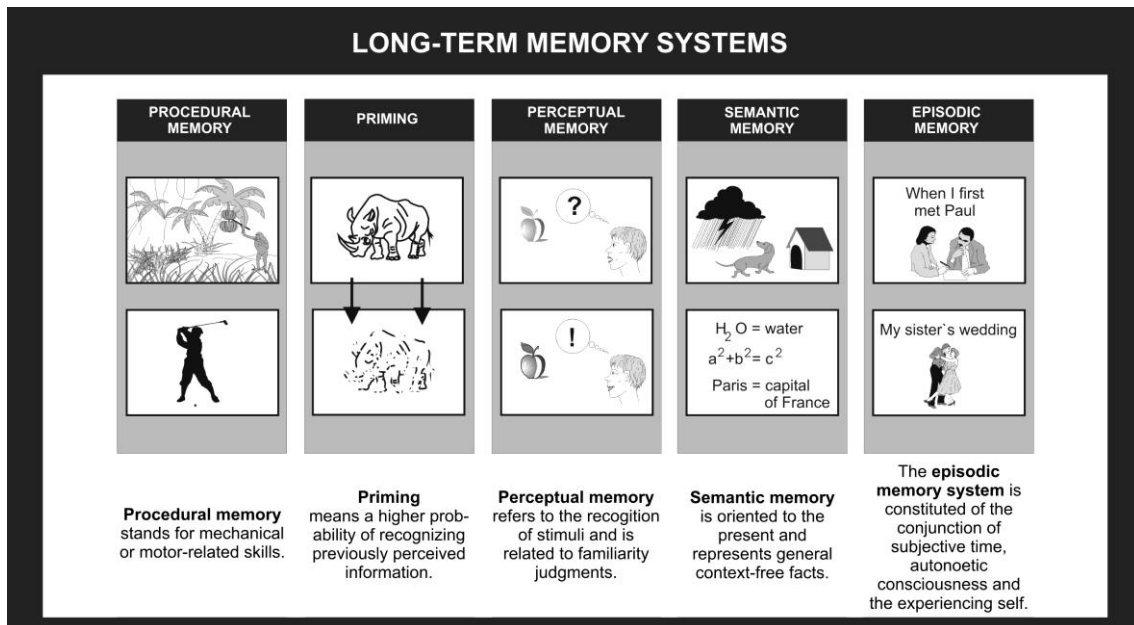
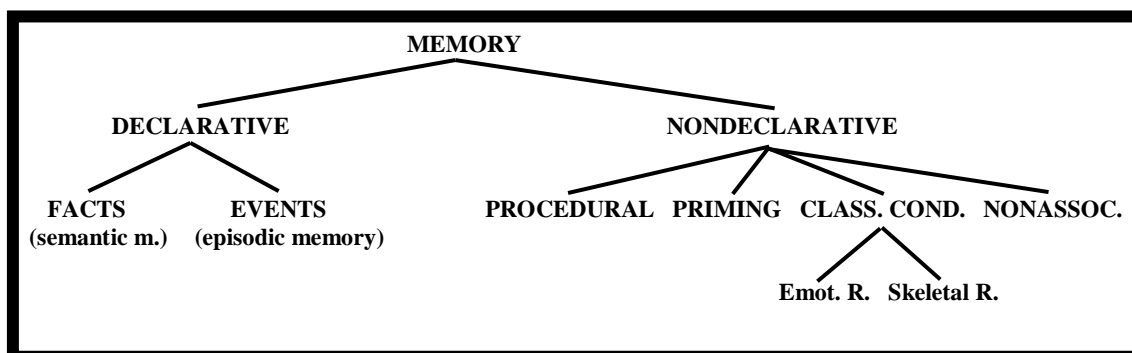


Figure 2. The long-term memory systems after Squire.

(Abbreviations: m. = memory; CLASS. COND. = classical conditioning; NONASSOC. = nonassociative; Emot. R. = Emotional Responses; Skeletal R. = Skeletal Responses)



### 2.1. Tulving’s model

Tulving’s model is based on five long-term memory systems. *Procedural memory* is largely motor-based, but includes also sensory and cognitive skills (routines). *Priming* refers to a higher likelihood of re-identifying previously perceived stimuli. *Perceptual memory* allows distinguishing an object, item, or person based on distinct features. *Semantic memory* is context-free and refers to general facts; it encompasses general knowledge of the world. *Episodic memory* is context-specific with respect to time and place. It allows mental time travel and is based on self-reflection (autooiesis). Examples are events such as the last vacation or the dinner of the previous night. The terms “remember” and “know” describe the distinction between episodic and semantic memory, as remembering requires conscious

recollection embedded in time and space and with an emotional flavoring, while knowing represents a simple, though conscious, yes/no distinction without further connotations. Tulving (2005) assumes that during ontogeny (as well as during phylogeny) memory development starts with the procedural and priming memory systems and ends with episodic memory, a system that he reserves for human beings, while all other systems can be found in animals as well. With respect to dimensions of consciousness, Tulving considered the first two memory systems as being *anoetic*, the next two as *noetic*, and the episodic to be *autonoetic*. So, in line with data from memory research in human infants (Nelson & Fivush, 2004, 2020) he emphasizes that the semantic (*noetic*) memory system develops before the episodic (*autonoetic*) memory system. Only this last one is based on self-consciousness and – consequently – on a developed ego.

## 2.2. Squire's model

Squire distinguishes into two major branches of memory: declarative (about which can be spoken) and nondeclarative (which works without semantic descriptions). The declarative system has two divisions (fact and event memory), which for Squire seem to be of equal importance, as he put them on the same level. The nondeclarative memory systems are manifold and contain the same priming and procedural memory systems which can be found in Tulving's classification, but in addition two forms of simple learning (classical conditioning and nonassociative learning) which are based on phylogenetically old brain structures below the cerebral cortex and reaching down to the spinal cord.

Squire's model has on the one hand several similarities with that of Tulving (the incorporation of episodic, semantic, procedural, and priming memory systems and the distinction into consciously processed = declarative and unconsciously processed = nondeclarative memory systems), on the other hand it has important differences. The severest difference is that Squire uses the term 'declarative' to incorporate both episodic and semantic memories. Subsuming both of these systems creates the following problems:

- Noetic and autonoetic memory processing is not differentiated.
- Most neurological and many psychiatric patients with memory problems have their memory problems in episodic memory only; therefore, describing that their 'declarative' memory is impaired fails to make justice to their deficit.
- The subdivision of declarative memory into fact (semantic) and event (episodic) memories lets them appear on an equal, non-hierarchical level.

## 2.3. Comparison of the memory systems of Squire and Tulving

Tulving sees a clear hierarchy between the consciously processed memory systems, where episodic memory stands at the top. This hierarchical arrangement is justified, as episodic memory processing requires a synchronous activation of factual and emotional components which then constitute the representation of an event (Staniloiu & Markowitsch, 2020). Furthermore, self-reflection (*autonoesis*) is required to attribute the events as having been experienced by oneself in the past. We *remember* the episode by traveling back in time. Fact memory on the other hand is a pure knowledge-based system, where he *know* that a table has a plate and legs. Semantic memory therefore is a system oriented towards the present – no time traveling is required to name an item a table and we usually do not have an emotional relation to tables.

This differentiation in complexity is reflected in memory development, where children first acquire facts about their environment – that is, they learn in a semantic manner. Only later in life and based on narratives (conversations with their parents) they acquire episodic memory and perform mental time travels (cf. Figures 2 and 3 of Markowitsch & Staniloiu, 2022, or Figure 1 of Nelson & Fivush). Vice versa, brain diseases such as dementia first lead to a deterioration and decay of episodic memories, while semantic fact memories remain preserved for a long time (e.g., Lecouvey et al., 2019; Seidl et al., 2011; Urbanowitsch et al., 2013).

## 3. Example and conclusions

A proper example for the discrepancy between fully preserved semantic or fact memory and fully blocked episodic or event memory are patients with the psychiatric disease condition, named 'Dissociative amnesia' (Staniloiu & Markowitsch, 2014; Staniloiu et al., 2018, 2020b). These patients usually have no memory of their personal past, that is no episodic memory, while they can function normally in everyday situations because of their preserved semantic and procedural memory. They know who is president of their country or who was Einstein, though they cannot remember their closest relatives.

This example demonstrates the usefulness of Tulving's hierarchy of memory systems and speaks against the careless use of the term 'declarative memory'. A cautious reflection of memory terminology is therefore advisable both in research and clinical applications.

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## GROSSLY REDUCED EFFORT – A MATTER OF WILL OR OF POSSIBILITY?

Angelica Staniloiu<sup>1,2</sup>, & Hans J. Markowitsch<sup>1</sup>

<sup>1</sup>*Department of Psychology, University of Bielefeld/Bielefeld (Germany)*

<sup>2</sup>*Department of Psychiatry and Psychotherapy, Oberberg Clinic/Hornberg (Germany)*

### Abstract

*Introduction:* In the past time we have studied a number of patients with dissociative amnesia – a condition in which retrograde amnesia and deficits in attention and concentration stand in the center. Already decades ago, but especially nowadays, we were confronted with patients without a history of dissociative amnesia who nevertheless manifested a similar symptomatology with respect to their lack of effort or inability to fulfill usual criteria for individuals with normal intelligence level. All three had no evidence of brain damage, but evidence of various stressful situations in their past. *Patients:* We will concentrate on three patients with the described symptomatology who were studied neuropsychologically in detail. At the time of testing, Patient 1 was a young man of 29 years, Patient 2 of man of 45 years, and Patient 3 a woman of 54 years of age. All had university education. While Patient 1 lived alone, the other two patients lived with their partners. *Patient 1.* Patient 1 had given up his studies and his job as an IT-specialist. He seemed to be unable to retain information for more ten minutes. His attention and concentration abilities were far below average. Problem solving abilities were normal. Retrograde memory was at least partially impaired. The lack of brain abnormalities was proven both with magnetic resonance imaging and fluor-positron emission tomography. *Patient 2.* Patient 2 had worked as a high-school teacher, but gave up due to major problems with long-term memory and attention and concentration, all of which were confirmed neuropsychologically. *Patient 3.* Patient 3 was medical doctor who stopped working in her private practice due to severe and lasting exhaustion which in part originated from additional stress during the covid-time. Her long-term memory was normal, but she had problems with more complex forms of attention and concentration and working memory. *Discussion and Conclusions:* Especially individuals in mentally demanding positions seem to be affected by long-term stressful situations for which they apparently had not developed sufficient coping strategies. However, contrary to patients with dissociative conditions, these individuals are fully self-conscious and reflect on their past. We argue that these patients do not have a reduced will – at least not consciously – but just do not have the possibility to make enough effort long-term, because they immediately fall back into a pattern of stress reactions.

**Keywords:** *Stress, attention, concentration, memory.*

### 1. Introduction

Patients – whether neurological or psychiatric – usually require a firm diagnosis. If patients deviate negatively in their intellectual level without showing any overt brain damage – as measurable via brain computer or magnetic resonance tomography – a psychiatric diagnosis is likely (Markowitsch & Staniloiu, 2022). A number of psychiatric diagnoses are accompanied by intellectual decline, as was already noted by Bleuler (1911) who used the label ‘dementia praecox’ for patients with schizophrenia. Nowadays, there are two patient groups with significant and frequently lasting intellectual decline. For one, patients with dementia (e.g., Irlé et al., 1987; Markowitsch et al., 2000; Seidl et al., 2011), and secondly patients with dissociative or functional or psychogenic amnesia (Staniloiu & Markowitsch, 2014, 2015; Markowitsch & Staniloiu, 2016). In fact, there may even be a relation between these two groups of patients (Staniloiu & Markowitsch, 2010). This second group is of interest, as their deficits are reversible in principle (e.g., Lucchelli et al., 1995), and as their diagnosis is a psychiatric one (though they apparently show neurological changes [e.g., Brand et al., 2009], which, however, should be evident in any psychiatric disease [Pietrini, 2003] and was proposed already long ago [Maudsley, 1870]).

While we studied a number of patients with dissociative amnesia over the last years (e.g., Fujiwara et al., 2008; Staniloiu et al., 2018, 2020; Staniloiu & Markowitsch, 2012), we noted over the years an increasing number of patients with no typical syndromes of dissociative amnesia and no apparent brain damage, but with a strong lack of initiative and effort, accompanied by symptoms of mild depression. Three of these patients will be described in the following.

## **2. Case Reports**

The patients came to us, because they or their relatives reported that they lack initiative, cannot deal with their work situation anymore, and feel weary throughout the day. Two of them had brain scans and all three intensive neuropsychological testing. The two older ones lived in a relation and had children. None of them showed any evidence of malingering as assessed with respective tests (Rey-15-item test; Lezak et al., 2012; Test of Memory Malingering [TOMM]; Tombaugh, 1996; Amsterdam-Short-Term-Memory Test; Schagen et al., 1997).

### **2.1. Patient 1**

Patient 1 was a 29-year-old male computer specialist who had given up his position as he said that he became unable to retain information for more than 5 or 10 minutes. This memory deterioration developed over several months, but then remained stable. There were no obvious somatic or psychic problems prior to the memory loss. Serum analysis showed no abnormalities. No drug problems were noted. Nevertheless, he became unable to take care of himself and returned to his parents' home. At the time of our investigation, he did not work on anything and just stayed home. When asked, he could not say what might happen with him in the future. Nevertheless, he seemed of good mood. His social abilities, his general capacity to think, as well as abilities to read, write, and calculate were preserved. Old memories were partly preserved – he at least recognized a number of past general events, but usually could not give details, reminding the investigators of an overgeneral memory effect (Barry et al., 2021; Donix et al., 2010). Though his behavior was somewhat distant, shy, and clumsy, he did not show tendencies of depression.

The patient received various electrophysiological recordings, magnetic resonance imaging (MRI), and FDG-positron-emission-tomography (PET). No abnormalities were found in the EEG studies (including visual and auditory evoked potentials). MRI-results were essentially normal. Brain glucose metabolism was normal, corresponding to that other male, age-matched control individuals.

Two extensive neuropsychological investigations were done 8 and 14 months after symptom onset. His IQ was above average as was short-term memory with digit spans of 9 (forward) and 6 and 7 (backward) at both testing dates. Simple attention tests were normal, more complex ones (Trail-Making Test B – TMT-B; Tombaugh, 2004) subnormal. He could not reproduce the Rey-Osterrieth Figure after 30 min. delay. (Lezak et al., 2012). Similarly, he scored poor in further tests of long-term memory, obtaining, for example, a score below 50 in the delayed-recall index of the revised Wechsler-Memory-Scale (Härting et al., 2000). In tests of retrograde memory, he was mainly normal, but was unable to identify any of 36 “famous faces” from the time of his early youth.

In repeated psychiatric interviews no evidence of personality disorder or of psychiatric alterations was found. A few weeks after the first neuropsychological examination, he entered a psychoanalytically oriented focused psychotherapy.

### **2.2. Patient 2**

Patient 2 was a male high-school teacher of 45 years of age, who had given up his job, as he felt overwhelmed with his work. Especially, he stated that he could not maintain concentration over longer periods of time and is forgetful. He took a mild anti-depressant during the time of the investigation. He, however, was able to drive with his car over long distances.

Application of neuropsychological tests revealed normal short-term memory, but reduced attention and concentration, especially in more demanding tests (TMT-B; d2-R; Brickenkamp & Zillmer, 1998; Brickenkamp et al., 2010). While his verbal IQ was at 104, he showed a reduced performance in general screening tests of his intellect (MoCA; DemTect; Nasreddine et al., 2005; Calabrese & Kessler, 2000). Problem solving abilities and decision making appeared undisturbed. In long-term memory tests, however, he was two or more standard deviations below the norm (Wechsler-Memory-Test-Revised; Rey-Osterrieth Figure). Old memories appeared preserved.

### **2.3. Patient 3**

Patient 3 was a female general practitioner of 54 years of age. She had had increasing problems with maintaining her practice since the start of covid-infections and stopped working at the end of the

main epidemic as she felt quickly overburdened and had increasing attacks of migraine. She complained about rapid exhaustion, disturbances of concentration, a general reduction in performance, sleeping problems and depression (against which she takes medicine). Neuropsychological testing revealed the following remarkable results: Her verbal IQ was high (130). In the complex TMT-B and in the Attention Quotient of the WMS-R she was subnormal. Problem solving ability and cognitive flexibility were normal. Contrary to the other two patients she was in the normal range in long-term memory tests (WMS-R, Rey-Osterrieth Figure), or only marginally subnormal (Doors Test; Baddeley et al., 1994). Old memories appeared preserved.

MRI revealed no conspicuities.

### 3. Discussion and conclusions

The three described cases have several commonalities. They show people in the middle of their life who had been successful in their professional life, but became unable to continue working. All had university education. All had problems in more complex functions of attention and concentration, requiring working memory abilities (TMT-B). Old memories appeared preserved in all three of them. Anterograde long-term memory was impaired in the two men, while the woman in general had no problems in the applied verbal and nonverbal tests. Probably her very high IQ helped her to maintain the requirements for successful encoding of information. On the other hand, she and Patient 2 had to take medicine against depression, where it can be asked whether the depressive symptoms induced the intellectual deteriorations and the inability to work, or whether the inability to work then led to the outbreak of depressive symptoms.

Though we did not follow-up the patients long-term, the inability to work apparently remained stable for years, implying a poor prognosis. All three patients, however, seemed to be less concerned about their condition than expectable. This lack of concern has parallels to the phenomenon of *belle indifférence*. *Belle indifférence* is a condition that since the end of the 19<sup>th</sup> century was associated with patients with dissociative disease conditions; it means that the patients appear paradoxically careless or unconcerned towards their own disease condition and fate. This lack of concern was found – at least in weakened form – in all three patients. Again, the question is, whether the condition of *belle indifférence* appeared as a consequence of initiative and the patients' weariness and weakness, or whether it was existing from the start and subsequently led to the changed behavioral pattern.

The main question refers to the etiology of this disease. Is it a consciously made decision to make life easier and refrain from the stress of working? Or are there certain predispositions, and if so, are they in acquired character or in genetic predispositions? In other words, is it a "free" decision of the patient to refrain from working? Or is there an accumulating burden of tasks which makes life less and less bearable? These questions dig into the territory of philosophy. But they also touch the patient's personality and developmental aspects.

We consider it likely that there is a gradual multifactorial development of the disease condition. The personality structure of the patient certainly plays a major role, together with some genetic factors. Environmental variables add to the likelihood of developing a changed personality structure. Among the environmental variables, stress is a major one. This had also been found in patients with dissociative amnesia (Markowitsch, 1999; DSM-5; Staniloiu et al., 2020; Palamarchuk et al., 2023) and underlines similarities between the two disease conditions. Stress leads to an overflow of stress hormones (Bremner, 2005; Lupien et al., 2009) and changes the hypothalamic–pituitary–adrenal axis (Heim et al., 2008), blocking the retrieval of stress-related memories (Markowitsch, 2002; Staniloiu & Markowitsch, 2015; Wolf, 2009). Especially stress, induced by traumatic events during childhood or youth, seems to result in a long-term change in the brain's response to further stress situations later in life (Spiegel et al., 2013; Staniloiu & Markowitsch, 2014; Markowitsch & Staniloiu, 2016).

There is much evidence in all of our patients that they suffered from major episodes of stress in their past life. And we postulated in what we termed the 'two-hit hypothesis' (Staniloiu & Markowitsch, 2014) that two or more major stress- or trauma-episodes can lead to dissociative amnesia. Similarly, we now would extend this hypothesis to cover the type of patients described herein as well. Along this line, we argue that these patients do not have a reduced will – at least not consciously – but just do not have the possibility to make enough effort long-term.

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# THE EXPERIENCES OF ADOLESCENT DAUGHTERS OF MOTHERS DIAGNOSED WITH BORDERLINE PERSONALITY DISORDER

**Marlize Heppell, & Lindi Nel**

*Psychology Department, University of the Free State (South Africa)*

## Abstract

This study aimed to describe, interpret and gain deep insight into the lived experiences of adolescent (aged 12–18) daughters with mothers diagnosed with Borderline Personality Disorder (BPD). As this disorder is characterized by substantial impairment in terms of interpersonal functioning and implies a deeply-rooted identity disturbance, the question is how this will affect the mothering abilities of women diagnosed with the disorder. Specifically, mothering adolescent daughters in the fifth developmental phase where they are confronted with identity forming versus identity confusion. It seems that the need of the adolescents for parental and specific maternal support is in discordance with the maternal capacities of BPD mothers. An anxious/ambivalent, avoidant, or insecure/disorganised attachment is likely to be established even before the child reaches the adolescent phase. The risk exists for a transgenerational pattern to develop and risk and protective factors play an important role in this regard.

This qualitative study was interpretative and phenomenological and eleven participants were interviewed on two occasions 6 months apart.

**Keywords:** *Borderline Personality Disorder, adolescent daughters, attachment, transgenerational pattern, parenting styles.*

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## 1. Introduction

The study investigated the experiences of adolescent daughters (12 – 18 years) with mothers diagnosed with borderline personality disorder (BPD) and attempted to generate knowledge specific to psychology and to inform clinicians on treatment options and programme planning. The study also aimed to address the need in the literature about the therapeutic and emotional needs of adolescent daughters of mothers diagnosed with BPD and will expand on existing literature on this topic.

## 2. Attachment forming

According to Jung (1959) The Great Mother, as a universal archetype, emerges from a collective cultural repository and has ambivalences through her positive-negative nature. Mothers can open doors to their children's futures or keep their children looking through clouded windows at the world for the rest of their lives. As Rytovaara (2014, p. 212) puts it, "The Great Mother is seen to possess life and death, beginning and end". In this first relationship lies hidden the power of unlocking their potential, believing and trusting, hoping and finding the sweet spot of emotional attachment. If this relationship fails the child, it can have far-reaching consequences. Neumann (1955, p. 33) describes it as follows: "The Great Mother forms a unity in which positive, negative, and ambivalently balanced constellations stand side by side". An infant's first connection with another human being is with the mother or her replacement. Rytovaara (2014) states that the maternal archetype can be viewed from behind the mother one can explicitly remember; the mother can be an internal object and one's first reflection in the relational field.

This initial relationship between an infant and the mother will direct the child in a variety of manners, may cause the development of psychopathology in later life, influence later relationships and the ability to connect emotionally to others, and be the cornerstone of the child's self-esteem. Research by Thompson et al. (2022) stated that different people can have different attachment relationships with children and in different contexts and children can as a result draw on different working models based on their different attachment experiences. Allen (2021) noted that each developmental period encompasses different psychological changes that will bring along unique child-parent interactions and different attachment-related emotions and cognitions which will affect the interpretation of those measures.

Thompson et al. (2022) refer to some attachment researchers who will include proximity maintenance as another important function of attachment relationships. Attachment relationships also differ from other close relationships in being secure or insecure with the latter being represented by attachment anxiety, avoidance, or disorganisation (Thompson et al., 2022).

Evidence exists that there is an association between an insecure attachment style during childhood and mental health issues (for example depression and self-harm) in late adolescence. IWM's derive from the child's relationships with attachment figures and it guides the child's interaction with these attachment figures (Thompson et al., 2022). From the child's perspective, the early parent-child relationship is a summary of the interaction history across multiple contexts they have with the parent. Theodore Waters (2021, p. 82) explains that IWM's "contain multiple constructs that unfold in a particular developmental sequence, change in latent structure, and undergo extensive generalisation and elaboration across development".

### 3. Borderline Personality Disorder

Seen against this background, mothers diagnosed with borderline personality disorder (BPD) have specific challenges to build and maintain stable relationships with their offspring. As this disorder is known for long-standing impairment in various domains of life, including identity disturbances (Lieb et al., 2004), volatility in interpersonal challenges and difficulties with impulse and affect regulation (Fineberg et al., 2018), such mothers might experience severe challenges to form stable mother-daughter relationships.

In probing the personality structure of BPD, the primary concern is the ego-structure pathology which included nonspecific manifestations of ego-weakness (e.g., a lack of anxiety tolerance) as well as defence strategies such as primitive idealization, splitting, excessive projection and projective identification and omnipotence that can be associated with devaluation (Kernberg, 1967, 1975). The question is how this will affect the mothering abilities of women diagnosed with the disorder. Specifically, mothering adolescent daughters (aged 12 – 18) who find themselves in the fifth developmental phase when they are confronted with identity forming versus identity confusion (Erikson, 1950). In this phase, attachment has already been established but a revision of the internal working models usually occurs as adolescents are better equipped than younger children to critically review their internal working models.

When the maternal IWM is based on low maternal expectations and trust, it will probably be carried over from one generation to the other (Bretherton, 1992). The major objective of this study was to investigate the risk factors for developing a transgenerational pattern and determine what elements will protect the adolescent daughter from this repeated pattern.

### 4. Research methodology

This qualitative study is situated within the context of the hermeneutic phenomenological worldview and aims to describe, interpret, and gain deep insight into the lived experiences of adolescent (aged 12 – 18) daughters with mothers diagnosed with BPD. Eleven adolescent daughters were selected for participation. The selection process took place according to principles of interpretative phenomenological analysis (IPA), which recommends that participants be selected due to their insight into the investigated phenomenon (Pietkiewicz & Smith, 2014). The recruitment process strived to find a sample that met the homogeneity criteria and the participants were interviewed by the researcher herself (as a clinical psychologist) by means of in-depth, semi-structured interviews on two occasions, six months apart. The researcher purposively sought adolescent daughters with mothers who were diagnosed with BPD. The sample was taken from participants residing in the North West Province in South Africa. As the mothers were all diagnosed with BPD by psychiatrists in private practice, it can be assumed that most of them are from more affluent families. The data were analysed through a thematic analysis and four themes were deduced from the interviews: (1) experiencing complex interpersonal dynamics, (2) experiencing emotional dysregulation, (3) not managing the system and (4) having positive expectancies.

### 5. Research findings

It became evident from the interviews with the adolescent daughters that they experience a significant amount of inconsistent behaviour from their mothers, which might contribute to the elevated anxiety levels that some participants reported. They also reported high levels of conflict in their mother relationships and generally in their lives. Stepp et al. (2013) stated that mothers diagnosed with BPD are more likely to be intrusively insensitive, being critical and communicating negatively with frightening comments, as was reported by several participants in this study. Self-esteem issues existed in most of the

participants. The mother-daughter relationships were compromised, and a lack of trust towards their mothers existed in most cases. Participants reported regular disruptive changes in their family environments as their mothers would engage in divorce proceedings or separations and relocate, leading to educational adjustments. Several participants in the study moved in with their grandparents due to their troublesome mother relationships or their mother's disruptive interpersonal problems. Reversed role expectations were clear from a couple of interviews, and some participants mentioned having a sister-like relationship with their mothers or perceiving their mothers as their best friends. Stepp et al. ((2013) stated that mothers diagnosed with BPD tend to engage in role confusion and may reinforce their children to take on a parental or friend role. It can also be expected that these mothers may experience high levels of distress in fulfilling their maternal duties, which could lead to abuse due to frustration and feelings of hopelessness (Stepp et al., 2013). Several participants in this study mentioned their mother's substance (alcohol and medication) and physical abuse and neglect, contributing towards the role confusion that exists between some of the mothers and daughters.

A lack of boundaries was one of the themes deducted from the interviews, and it can be assumed that some mothers used a permissive parenting style in which case there will be little emphasis on discipline and structure (Roman et al., 2016). Some of the daughter's mothers used a neglectful/disengaged parenting style and were detached from their daughters with little communication, low parental warmth and almost no limit-setting. The unpredictability and inconsistency in their mother's behaviour caused severe distress in most of the participant's lives, and it became evident that a mother with inconsistent behaviour causes more psychological distress than a consistently avoidant mother, for instance. Participants mentioned feeling insecure about what to expect from their mothers as it varies from being close to being detached. Their emotional withdrawal/detachment from their mothers (to protect themselves) can be understood from this perspective of unpredictability. Detachment became more manageable for participants who knew what to expect from their mothers than those exposed to continuous inconsistent maternal behaviour and experienced higher levels of distress.

A lack of consistency in forming attachments may result from a disorganised child who feels frightened and sees the mother as frightening, according to Davies (2004). Furthermore, a child's inability to sustain a stable and secure attachment in childhood contributes to BPD aetiology (Trull et al., 2003). The importance of parental and specific maternal support in the adolescent phase is in discordance with the maternal capacities of BPD mothers. The research indicates that adolescents whose mothers were diagnosed with BPD exhibited more delinquency, aggression and attention problems than mothers with no psychiatric diagnosis (Barnow et al., 2006). Adolescents with mothers diagnosed with BPD reported higher levels of depression, anxiety and lower self-esteem than adolescents of mothers diagnosed with other personality disorders, major depressive disorder and healthy controls (Barnow et al., 2006).

## 6. Conclusion

It became evident from the results that the younger adolescents (12 – 13 years) still expected their mothers to change and that their mother relationships would improve. Results indicated that the younger adolescents remained loyal towards their mothers. The findings reflect a commitment that externalised the reasons for their mother's behaviour as either being 'lifestyle' or the effect of her previously failed relationships, the maternal grandmother's role in her life, or other external factors. Secondly, the adolescents' expectations of their mothers were generally relatively low. In the middle phase of adolescence (14 – 15 years), the adolescent daughters gradually become more disillusioned, and when they reach the phase of being older adolescents (16 – 18 years), they tend to detach from their mothers, and they will eventually individuate to protect themselves. Thirdly, several risk and protective factors were identified that could contribute towards the transgenerational patterns to be formed or protect the child from that happening. These include environmental risk factors like childhood trauma and neglect, family dynamics (for example the role of the fathers or stepfathers) and the role of parental psychopathology and behaviour (for example the constant conflict). Environmental protective factors refer to the availability of psychological and psychiatric help. Individual risk factors include aspects like the child's psychopathology, temperament, and level of competence. Individual protective factors refer to the child's level of insight, IQ and resilience and low levels of maternal expectations. The role of peers can be regarded as either a risk or a protective factor.

The findings were in line with existing literature referring to childhood trauma and neglect as a significant risk factor (Zanarini et al., 2020), with up to 71% of BPD patients disclosing some form of abuse during childhood (Lieb et al., 2004; Widom et al., 2009). Unstable family dynamics, low socio-economic status of family, economic adversities (Cohen et al., 2008) and parental psychopathology and maladaptive behaviours are regarded as potential risk factors for developing BPD by Johnson et al. (2002), as well as the child's psychopathology (Stepp & Lazarus, 2017) and the child's temperament (Vaillancourt et al., 2014).

In summary a discordance exists between the needs of an adolescent daughter and the maternal potential of a mother diagnosed with BPD. These unfulfilled needs of the adolescent daughter occur in conjunction with an attachment style of either being anxious/ambivalent, avoidant or disorganised/insecure and contribute towards forming a transgenerational pattern. Risk and protective factors might contribute to or prevent this pattern from forming, and the potential role of early psychological interventions needs to be exploited.

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# THE APPLICATION OF AWARENESS INTEGRATION THEORY, A TRAUMA-INFORMED CARE MODALITY: A SYSTEMATIC REVIEW

**Foojan Zeine<sup>1,2</sup>, Nicole Jafari<sup>3,4</sup>, & Kenneth Blum<sup>5-14</sup>**

<sup>1</sup>California State University, Long Beach, California (USA)

<sup>2</sup>Founder @Awareness Integration Institute

<sup>3</sup>Chicago School of Professional Psychology (USA)

<sup>4</sup>Founder & Principal @Cross-Cultural Research & Educational Institute

<sup>5</sup>Department of Molecular Biology, Adelson School of Medicine, Ariel University, Ariel 40700 (Israel)

<sup>6</sup>Division of Addiction Research & Education, Center for Sports, Exercise, and Mental Health,  
Western University of Health Sciences, Pomona, CA 91766 (USA)

<sup>7</sup>Division of Reward Deficiency Clinics, TranspliceGen Therapeutics, Inc., Austin, TX (USA)

<sup>8</sup>Division of Clinical Neurology, The Kenneth Blum Institute of Neurogenetics & Behavior, LLC., (USA)

<sup>9</sup>Department of Medicine, University of California, Riverside School of Medicine, Riverside, CA (USA)

<sup>10</sup>Department of Psychiatry, Mt. Sinai School of Medicine, New York, NY (USA)

<sup>11</sup>Centre for Genomics and Applied Gene Technology, Institute of Integrative Omics and Applied  
Biotechnology (IIOAB), Nonakuri, Purba Medinipur, West Bengal 721172 (India)

<sup>12</sup>Department of Psychiatry, University of Vermont School of Medicine, Burlington, VA (USA)

<sup>13</sup>Institute of Psychology, ELTE Eötvös Loránd University, Egyetem tér 1-3, Budapest (Hungary)

<sup>14</sup>Department of Psychiatry, Wright State University Boonshoft School of Medicine,  
Dayton VA Medical Centre, Dayton, OH (USA)

## Abstract

Individuals impacted by trauma often have difficulty making sense of past traumatic events, memories, thoughts, feelings, and physical responses. Awareness Integration Theory (AIT) offers a trauma-informed care model by integrating emotional, cognitive, and somatic disconnects, helping the individual reach mental equilibrium. This innovative and non-invasive technique is based on Trauma-informed care principles, understanding the pervasive nature of trauma while promoting an atmosphere of healing. Using scientific techniques of self-awareness, neuroplasticity, internalization, and integration, AIT assists the individual in creating a trauma narrative by acknowledging the traumatic cognitive and emotional schemes yet bypassing the re-traumatization of these events that may inadvertently lead to the client's regressive mode. Using trauma-informed care philosophy, AIT approaches the core beliefs, emotions, and physical/physiological attributes, helping the individual become aware of their experiences and the emotional and cognitive aftermath that led to their current state of being. The AIT technique includes a) creating the trauma narrative script accounting for the sequence of events that led to the traumatic experience, b) empowering the individual by reviewing the story and finding the internal psychological disconnects, c) recreating the narrative in an integrated modality connecting the emotional, cognitive, and behavior domains of self and moving forward.

**Keywords:** *Awareness Integration Theory, trauma-informed treatment, trauma-informed care, trauma narrative, psychological integration.*

## 1. Introduction

Choosing the appropriate treatment modality is essential in expediting the process of recovery from trauma. One treatment venue is to focus on specific traumatic experiences while exploring the gravity of impact and the individual's learned coping mechanism before designing the proper treatment plan. However, Trauma-Informed Care (TIC) is an approach that, while recognizing the impact of trauma on the person, avoids re-traumatizing the individual by not directly discussing the trauma itself. According to the United States Center for Substance Abuse (Center for Substance Abuse Treatment, 2014), Trauma-Informed practices reinforce the importance of acquiring trauma-specific knowledge and skills to meet the specific needs of clients, accepting that individuals are affected by trauma regardless of its

acknowledgment. TIC stresses the importance of addressing the client individually rather than applying general treatment approaches.

Similarly, Awareness Integration Theory (AIT), an effective trauma treatment modality, focuses on the individual's needs and strengths rather than the sense of powerlessness that ignites the trauma. AIT treats the client as an individual with unique needs and characteristics who uniquely copes with trauma; therefore, by focusing on areas of life that trauma has impacted and integrating the individual's resiliency, one avoids re-traumatization. It builds on the strengths and resilience of clients in the context of their environments and communities (Zeine, 2016).

## **2. Objectives**

This paper aims to demonstrate that Awareness Integration Theory (AIT) utilizes a Trauma-Informed Care modality by emulating such principles as integrating a safe space, setting boundaries and empowerment, and a spirit of collaboration. The authors demonstrate evidence-based research that supports the application of AIT as an effective model for helping individuals impacted by traumatic events who suffer from the consequences of complex trauma disorder.

## **3. Methods**

Using standardized search engines, the authors conducted a comprehensive systematic review, exploring the definition and philosophy of trauma-informed care (TIC) principles. Additionally, they investigated the efficacy of AIT as an effective therapeutic modality encompassing the TIC's main ideologies. AIT's efficacy as an online and in-person psychotherapy treatment has been researched numerous times. Historically, AIT has been the subject of numerous research studies conducted on multiple applications of treating mental health disorders such as depression, anxiety, and stress reduction.

Personal Growth Institute researched AIT's F2FC therapeutic sessions, showing a decrease in depression by % 76 and anxiety by %60 while increasing self-esteem by %43 and self-efficacy by %20 (Zeine et al., 2017a). A study on the American college student population using the Awareness Integration Theory in a hybrid modality showed an overall 68% decrease in depression and a 21.72% decrease in anxiety (Zeine et al., 2017b). In a workshop setting, the AIT has also been tested on separated or divorced individuals, resulting in a 27.5% improvement in depressive moods, a 37% decrease in feelings of anxiousness and anxiety while showing a 15% increase in self-esteem, and a 13% boost in self-efficacy (Madani & Zeine, 2022). Additional studies utilizing AIT via telehealth resulted in a decrease in anxiety by %50 and an increase in self-esteem by %60, and in another case study, decreased depression by %66, anxiety by %75, and post-traumatic stress disorder (PTSD) symptoms by %66 (Zarbakhsh & Zeine, 2023).

## **4. AIT as a trauma-informed care construct**

A Trauma-Informed approach fully integrates knowledge about trauma into all aspects of life to recognize the signs and symptoms of trauma without the possibility of re-traumatization (Substance Abuse and Mental Health Services Administration, (2014). To do so, the following five guiding principles offer the structure of 1) safety, 2) choice, 3) collaboration, 4) trustworthiness, and 5) empowerment (Harris & Falot, 2001).

AIT Trauma-Informed Care approach aims to understand the pervasive nature of trauma that has been inflicted on the individual while promoting a healing environment and avoiding re-traumatization. Using AIT, the practitioner provides a physically and emotionally safe environment for establishing trust and boundaries, supporting autonomy and choice, creating collaborative relationships and participation opportunities, and using strengths and empowerment-focused perspective to promote resilience are ways in which the principles of Trauma-Informed Care work to reduce re-traumatization and promote healing (Zeine, 2016).

## **5. The antecedent of genetics and self-awareness**

A high degree of stress brought on by traumatic experiences can lead to the malfunction of the brain reward circuitry. Dopamine neurotransmitters responsible for pleasure, learning, and motivation can run low or be blocked from reaching the intended brain receptors by stress. Low dopamine secretion in a stressed individual may lead to unhealthy behaviors and post-traumatic stress disorder. Blum and colleagues have linked this poor circulation of dopamine to Reward Deficiency Syndrome (RDS) (Blum et al., 1996; Blum et al., 2000). Dopamine deficiency may also be correlated to hereditary and genetic dispositions.

Conversely, PTSD shares many genetic influences common to other psychiatric disorders. For example, PTSD shares 60% of the same genetic variance as panic and generalized anxiety disorders (Blum et al., 2012). Anxiety and depressive moods interfere with the accuracy and clarity of self-awareness and decrease dopamine secretion. However, increased dopamine improves the retrieval accuracy of self-judgment (autonoetic, i.e., explicitly self-conscious) metacognition memories (Joensson et al., 2015). To develop a trauma-informed recovery plan, the clinician must be aware of all the intricate parts of trauma-induced factors and the client's inner capacity to fight the inner demons.

## 6. Discussion

The Awareness Integration Therapy aims to promote awareness and integrate all fragmented elements of the self from the past into the present. The basic approach of AIT entails recognizing clients' negative and irrational core beliefs that have stemmed from a little or big trauma, the cognitive or emotional formulas clients have developed as coping mechanisms, and the identities they have created, maintained, and operated to survive and upgrade them to a workable narrative for the current conditions of the client's life. AIT enables the release of emotional and bodily charges from unintegrated experiences, memories, and negative belief systems. Using AIT, clients are guided through six phases by an organized set of questions in all areas of life relevant to the client's life, such as career, finances, intimate relationships, parents, children, etc. Each phase includes a set of questions and a distinct goal (Zeine, 2016). AIT's trauma-informed care uses the five guiding principles recommended by the Institute on Trauma and Trauma-Informed Care (2015) and a final phase of awareness integration: safety, choice, collaboration, trustworthiness, empowerment, and integration (Blum, 1997).

### 6.1. Safety

Globally, healthcare professionals unanimously follow the universal 'Precautions Law,' which mandates safety first (avoiding exposure to harmful substances) when treating clients. In trauma-informed care, the same principle is practiced when treating clients with traumatic experiences (Blum, 1997). AIT trauma-informed care integrates awareness and self-discovery to ensure the client's physical and emotional safety by addressing what has impacted the individual rather than what is wrong with them. Since AIT is a client-centered approach, it allows for the safety of the client from the first session. The collaboration of the therapist and client through open-ended inquiring questions, investigating information from their subconscious world, and delicately bringing it to the surface to be chosen or purged. Explaining the six phases and what the client can expect every session allows trust to be built for the client to enable the process to unfold (Zeine, 2016).

Phase One intends to raise the client's awareness of their perceptions, emotions/ feelings, and actions about their external environment and how those constructions affect their life. During this stage of therapy, generalized belief systems, dualities, responsibility, and accountability toward a particular attitude create specific results and impacts in life (Zeine, 2016).

### 6.2. Choice

Having choices and control over what they can expect through AIT integration of traumatic experiences encourages the client to stay steadfast in their commitment to recovery (Zeine, 2016; Blum, 1997). The AIT technique includes a) creating the trauma narrative script accounting for the sequence of events that led to the traumatic experience, b) empowering the individual by reviewing the story and finding the internal psychological disconnects, c) recreating the narrative in an integrated modality connecting the emotional, cognitive, and behavior domains of self and moving forward. Trauma-informed AIT phase two consists of three functions:

1. Raising awareness of the client's projections of others' opinions and feelings about them.
2. Improving the client's ability to observe others' behavior towards them and the meanings the client attributes to that behavior.
3. Identifying how these constructs impact the client's life.

This phase significantly impacts recognizing how much a client lives in their assumptions about others' intentions and lives based on those assumptions rather than relating to others through direct communication and clarity. This phase also supports reality-checking false beliefs or assumptions about others or concepts.

### 6.3. Collaboration

AIT helps clients learn the importance of collaboration, which can result in more choices and help them positively experience their treatment journey (Keesler et al., 2017; Zeine, 2016). Additionally, the more choice an individual has and the more control they have over their service experience through a



collaborative effort with service providers, the more likely the individual will participate in services and the more influential the services may be. Phase Three strives to increase clients' understanding of their thought processes, feelings, and behaviors concerning their identity as they take on a role in different areas of life. This is the most significant phase since it focuses on the client's understanding of their identity, and these questions, in particular, capture the client's core beliefs about themselves, how they feel and value themselves, which determines their self-esteem, and whether they treat themselves with nurturance or harshly (Zeine, 2016).

#### 6.4. Trustworthiness

Establishing boundaries and consistency can be evident in establishing consistent boundaries and clarifying what is expected regarding tasks<sup>12</sup>. The overarching goal of Phase Four, the most complex of the six AIT phases, is to deepen the therapeutic process so that the therapist successfully guides the client toward discovering, acknowledging, and owning the emotional meanings that the individual has often unconsciously assigned to her significant and traumatic past experiences in terms of her thoughts, emotions, and body responses. The therapist assists the client in identifying, fully experiencing, and then clearing the impact of the previous and ongoing assignment of emotional meanings, thereby facilitating the client's liberation from the invisible memory chains that have kept the individual in a chronic state of fear, sadness, anxiety, or other multiple negative emotions that are maladaptive in her current life. Each network of negative fundamental beliefs, related feelings, and body location represents a combination code to a specific memory. For this network to be disassembled, it must be regarded as significant to link to the memory that the client first gave the meaning to the self. The original memory is accessed, connections changed, and then stored with these new modifications in a neurobiological reconsolidation process. The association of the event with powerlessness and helplessness modifies toward strength and resiliency that is recognized and acknowledged at the time of the event. The concept of "bridging" or closing the gap between the vulnerable state, which has become stuck in time, and the resilient survived one today is also included in Phase Four. This bridging condition is characterized by integrating all aspects of the self into a system that is not segmented or separated (Zeine, 2016).

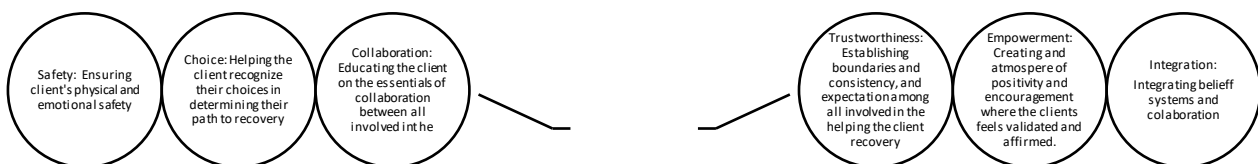
#### 6.5. Empowerment

AIT helps individuals identify and recognize their strengths and build vital interpersonal allies (Blume, 1997). Finally, focusing on an individual's strengths and empowering them to build on them while developing more vital coping skills provides a healthy foundation for individuals to fall back on if and when they stop receiving services. In Phase Five, the therapist investigates the client's selected values concerning areas of life previously discussed. Encouraging clients to think, feel, and act to actualize a chosen value system from their robust and proven skill set will result in a desired attitude and identity. Short and long-term goals are created and scheduled due to this new commitment, and action plans are set to achieve the intended outcome. During this phase, the therapist determines the client's abilities and skills that require improvement. The ability to choose who one wants to be and act creates a powerful identity and a fulfilled life (Zeine, 2016).

#### 6.6. Integration

In Phase Six, the client selects a set of values, situationally suitable emotions, and behaviors from which to operate and live. The client then designs an external symbol or structure as a reminder to reinforce these beliefs and self-programming. Collaborating with friends, family, colleagues, and the community to form sustainable structures around goals ensures attaining a fulfilled life (Zeine, 2016).

Figure 1. Incorporating AIT in trauma-informed therapy. Adapted from (Keesler et al., 2017).



## 7. Conclusion

Clients seeking treatment to combat their pain, terror, and loss of past trauma face an uphill battle mainly due to unconscious resistance, such as genetic antecedents, unchecked self-awareness, or lack of integration of the human psyche (mind, body, spirit), can interfere with the individual's recovery efforts. Genetic testing, such as GARS that explores dopamine and RDS possibilities is vital. To design realistic trauma-informed recovery strategies, a parallel process of recovery combining GARS and AIT seems to be a win-win situation. We can confidently say that the number of individuals with trauma-induced mental illnesses is on the rise. As complicated as such a parallel system may be, it represents a recovery movement and the drive for trauma-informed care. What needs to be added is a heightened awareness of the interconnected, living nature of our systems and a recognition that significant changes in one part of the corporate "body" can only occur if the whole body also changes.

Accessing the memory and creating healthier schemes (memory narratives) requires integrating mind, body, and spirit. Clients may consciously seek treatment yet be unable to fight the destructive forces of the unconscious mind. On the other hand, the genetic antecedents of dopamine deficiency may be the culprit in the process of treatment, adversely impacting the healing process. The foreknowledge of the roots of trauma-induced mental health crises can help develop recovery strategies based on Awareness Integration Theory, which can be instrumental in providing a safe and empowering space for clients to work through their painful memories and rebuild new cognitive pathways.

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## PERCEIVED SOCIAL SUPPORT AND ANXIETY: THE MEDIATING ROLE OF SELF-COMPASSION AND THE MODERATING ROLE OF CULTURE

Lubna Tannous-Haddad<sup>1</sup>, & Efrat Barel<sup>2</sup>

<sup>1</sup>*Department of Behavioral Sciences, The Max Stern Yezreel Valley College (Israel)*

<sup>2</sup>*School of Psychological Sciences, University of Haifa (Israel)*

### Abstract

The aim of the study was to examine whether perceived social support is related to anxiety and whether self-compassion accounts for the relationship between perceived social support and anxiety, among Jewish and Arab in Israel. 520 participants (309 Jews, 211 Arabs; 49% male, 51% female; M age=40.31, SD=12.03), filled an online questionnaire that included: Demographic information, self-compassion, social support and anxiety scales. Results showed that higher levels of perceived social support were associated with lower levels of anxiety. Self-compassion acted as a mediator between perceived social support and anxiety. In addition, culture had a moderating effect on the relation between perceived social support and self-compassion as well as on the relation between self-compassion and anxiety: The mediation effect is stronger for Arabs compared to Jews. The results confirm previous research of self-compassion as a mediator and add to the unfolding research of possible interaction between culture and self-compassion.

**Keywords:** *Self-compassion, perceived social support, anxiety, culture.*

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### 1. Introduction

Perceived social support refers to individuals' beliefs regarding the availability of support within their social networks. Perceived social support has been positively linked to better psychological well-being (Alsubaie, Stain, Webster & Wadman, 2019; Harandi, Taghinasab, & Nayeri, 2017) and showed negative associations with anxiety (Metts et al. 2023), stress (Suwinyattichaiporn & Johnson, 2022; Hou, Zhang, Cao, Lei, & Liu, 2023), and depression (Suwinyattichaiporn & Johnson, 2022). Yet, these associations are not necessarily direct but rather mediated. Recent studies underscore self-compassion's role in mediating the relationship between perceived social support and negative psychological well-being. Wilson, Weiss & Shook, (2020) found that self-compassion was one of three factors that accounted for perceived social support and psychological wellbeing outcomes. Similarly, Chan, Yip & Tsui, (2023), investigated the impact of family support on the recovery of people with mental illness and explored the potential mechanisms underlying this impact. They found positive associations between family support and self-compassion. Moreover, self-compassion demonstrated a correlation with lower symptom severity, enhanced social and work functioning, more optimistic perceptions of recovery, and increased life satisfaction.

The concept of self-compassion, as defined by Neff (2022), comprises three interrelated components: acknowledging suffering and failure as inherent aspects of humanity, mindfully experiencing these challenges, and responding with kindness and understanding towards oneself. Self-compassion has emerged as an important factor in mental health. Extensive research has established connections between self-compassion and variables such as depression, anxiety, mental health, and self-rated health (de Souza, Policarpo & Hutz 2020; Kotera, Van Laethem & Ohshima, 2020).

Emerging research shows nuanced behavior of self-compassion across diverse cultures. Self-compassion exhibited a noteworthy correlation with elevated levels of subjective well-being and concurrently lower levels of depressive and anxiety symptoms in Hong Kong students. However, these associations were not significant among students in the United States (Fung et al., 2021). Conversely, German employees demonstrated lower levels of mental health problems coupled with higher levels of self-compassion in comparison to their South African counterparts with self-compassion as the strongest predictor for mental health problems in both countries (Kotera Mayer & Vanderheiden, 2021). Notably, in another study, self-compassion played a negative predictive role in mental health problems among Japanese employees, but not among Dutch employees (Kotera et al. 2020). This highlights the need to

consider cultural variations in understanding the impact of self-compassion on psychological well-being.

The aim of the current study was to examine whether perceived social support is related to anxiety and whether self-compassion mediates the relationship between perceived social support and anxiety, among Jews and Arabs in Israel.

Our main hypotheses were:

1. Self-compassion mediates the relationship between perceived social support.
2. The mediated effect of self-compassion on perceived social support and anxiety is moderated by culture.

## 2. Method

### 2.1. Participants

Participants included 520 adults recruited online using methods described ahead. Inclusion criteria were being between 20 and 60 years of age and speaking the language in which the survey was administered (Hebrew or Arabic). No exclusion criterion was applied. The sample comprised 309 Jews (58.8%) and 211 Arabs (49%) male (51%) was female. Participants' mean age was 40.3 (SD=12.02) years.

### 2.2. Procedures

The current study was based on data collected by the authors in a cross-sectional survey conducted in Israel. An anonymous online questionnaire using Qualtrics (<https://www.qualtrics.com>) was created. The survey was sent to participants online by iPanel (<https://www.ipanel.co.il>), a large Israeli panel service. The complete study protocol was approved by the College Institutional Review Board. Questionnaire completion was voluntary, and respondents were told that they could stop their participation at any point. Data from participants who completed the survey were excluded from the final analysis if their responses were implausible (e.g., they chose the same answer throughout the questionnaire). The final analysis included 520 participants.

### 2.3. Measures

**2.3.1. Demographic.** The demographics questionnaire included items on culture, parenthood, gender, age, residence, religion and education.

**2.3.2. Perceived social support.** The *Multidimensional Scale of Perceived Social Support*, (Zimet, Dahlem, Zimet & Farley, 1988;  $\alpha=0.94$ ). The 12-items instrument comprises of 3 subscales that measure support from family, friends and significant others. Responses are on a scale of 1 (Strongly disagree) to 7 (Strongly agree). The mean score computed such that a higher score reflects more support coming from the institution. The MSPSS was translated and adapted to Hebrew by Statman (1995), that reported high internal reliability (0.93 for the family subscale, 0.91 for the friends subscale and 0.91 for the significant others subscale). In the current study, the internal reliability (Cronbach's alpha) was 0.95.

**2.3.3. Self-compassion.** The *Self-Compassion Scale Short Form* (Raes et al., 2011) includes 12 items for evaluating self-compassion through 6 sub-scales: self-kindness, self-judgement, common humanity, isolation, mindfulness, and over-identification. Each represented by 2 items. Responses are on a scale of 1 (Almost never) to 5 (Almost always). To compute a composite score, the negative items were reversed scored, and the sum across all items was computed. Higher scores indicated greater self-compassion. In the current study, the internal reliability (Cronbach's alpha) was 0.78.

**2.3.4. Anxiety.** The *DASS-21* (Lovibond and Lovibond 1995; Hebrew version, retrieved from DASS21 website <http://www2.psy.unsw.edu.au/dass/>) includes 21 items for evaluating depression (7 items), anxiety (7 items), stress (7 items), and a total score (21 items). All items use a 4-point Likert scale, ranging from never (0) to most all the time (3). A score above 11 on the depression scale indicates severe depression; a score above 8 on the anxiety scale indicates severe anxiety; and a score above 9 on the stress scale indicates moderate or severe stress. In the current study, the internal reliability (Cronbach's alpha) was 0.91 for anxiety.

### 3. Results

#### 3.1. Hypothesis 1: Testing for the mediation effect

In Hypothesis 1 we expected that self-compassion would mediate the relationship between perceived social support. To examine this hypothesis, we followed the four-step procedure to set up mediation effect (Baron & Kenny, 1986). Regression analysis revealed that. In the first step social support negatively predicted anxiety (see Model 1 of Table 1). In the second step, social support positively predicted self-compassion (see Model 2 of Table 1). In the third step, after controlled for social support, self-compassion negatively predicted anxiety (see Model 3 of Table 1). At last, after controlled for self-compassion, social support negatively predicted anxiety. On the whole, a mediation effect was found, thus supporting hypothesis 1.

Table 1. Testing the mediation effects of social support on anxiety.

| Predictors                  | Model 1  |          | Model 2   |          | Model 3  |          |
|-----------------------------|----------|----------|-----------|----------|----------|----------|
|                             | $\beta$  | $t$      | $\beta$   | $t$      | $\beta$  | $t$      |
| <b>Social support</b>       | -.36     | -8.74*** | .53       | 14.10*** | -.21     | -4.83*** |
| <b>Self-compassion</b>      |          |          |           |          | -.35     | -8.07*** |
| <b>R<sup>2</sup> change</b> | .13      |          | .28       |          | .10      |          |
| <b>F change</b>             | 76.37*** |          | 198.70*** |          | 65.12*** |          |

\*\*\* $p < .001$

#### 3.2. Hypothesis 2: Testing for the moderated mediation

In hypothesis 2, the present study assumed that the mediated effect of self-compassion on perceived social support and anxiety will be moderated by culture. To examine the moderated mediation hypothesis, the current study estimated parameters for three regression models with PROCESS macro (model 59) by Hayes (2013). The present study estimated the moderating effect of culture on: the relation between social support and anxiety (model 1); the relation between social support and self-compassion (model 2); the relation between self-compassion and anxiety (model 3). The specifications of each model are summarized in table 1.

Moderated mediation was established if either or both of two patterns existed (Hayes, 2013): the path between social support and self-compassion was moderated by culture, and/or the relation between self-compassion and anxiety was moderated by culture.

As shown in Table 2, in Model 1 there was a significant main effect of social support on anxiety and this effect was not moderated by culture. Model 2 showed that the effect of social support on self-compassion was significant, and this effect was moderated by culture. We plotted predicted self-compassion against social support separately for Arabs and Jews (Fig.1). Simple slope tests showed the association between social support and self-compassion was stronger for Arabs ( $b_{simple} = 0.24, p < .001$ ) than for Jews ( $b_{simple} = 0.16, p < .001$ ). Model 3 showed that the effect of self-compassion on anxiety was significant, and this effect was moderated by culture. We plotted predicted anxiety against self-compassion separately for Arabs and Jews (Fig.2). Simple slope tests showed the association between self-compassion and anxiety was stronger for Arabs ( $b_{simple} = -3.44, p < .001$ ) than that for Jews ( $b_{simple} = -2.11, p < .001$ ).

Table 2. Testing moderated mediation effects of social support on anxiety.

| Predictors                       | Model 1 |         | Model 2 |         | Model 3 |          |
|----------------------------------|---------|---------|---------|---------|---------|----------|
|                                  | $b$     | $t$     | $b$     | $t$     | $b$     | $t$      |
| <b>Social support</b>            | -.37    | 1.83*** | .24     | 9.05*** |         |          |
| <b>Social support ✕ Culture</b>  | -.09    | -.35    | -.07    | -2.19*  |         |          |
| <b>Self-compassion</b>           |         |         |         |         | -3.44   | -7.48*** |
| <b>Self-compassion ✕ Culture</b> |         |         |         |         | 1.34    | 2.24*    |
| <b>R<sup>2</sup> change</b>      | .00     |         | .01     |         | .01     |          |
| <b>F change</b>                  | .12     |         | 4.80*   |         | 5.02**  |          |

\* $p < .05$

\*\*\* $p < .001$

Figure 1. Self-compassion as a function of social support and culture. Functions are graphed for two levels of culture: Arabs and Jews.

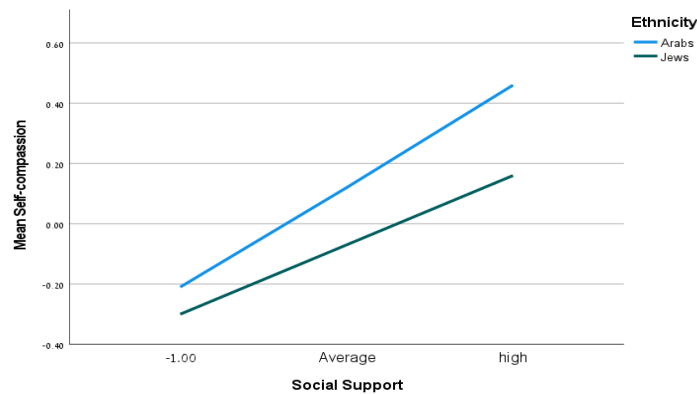
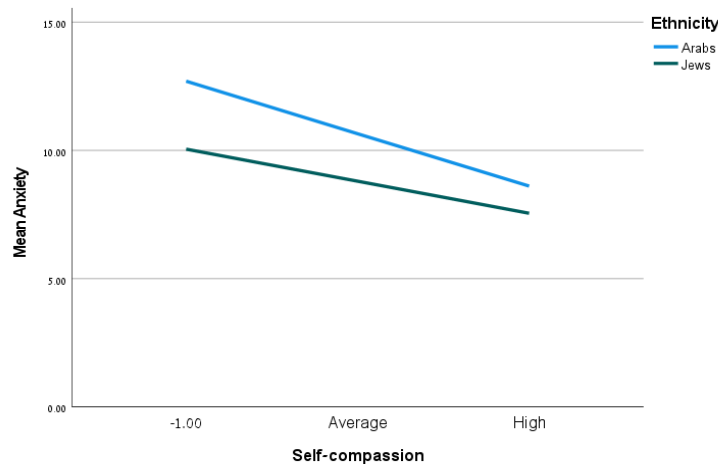


Figure 2. Anxiety as a function of self-compassion and culture. Functions are graphed for two levels of culture: Arabs and Jews.



#### 4. Discussion

Emerging research has shown that self-compassion has significant associations with different psychological wellbeing facets and that these associations may differ from one culture to another. Based on data collected from Jews and Arabs in Israel, our results showed that self-compassion mediated the relationship between perceived social support and anxiety. The mediation effect is in line with previous research accentuating the role of self-compassion as a mediator between perceived social support and wellbeing aspects, (Chan, et al., 2023; Wilson et al. 2020). This indicates that individuals who are offered greater support through their different social relationships are more likely to be compassionate to themselves and as a result have a more positive wellbeing.

In addition, we found that the mediation effect is stonger for Arabs as compared with Jews. The association between perceived social support and self-compassion was stronger for Arabs. This implies that perceived social support can play an important role in empowering self-compassion in the Arab society and consequently contribute to their psychological wellbeing. Also, the association between self-compassion and anxiety was stronger for Arabs. This aligns with contemporary research, which highlights varying correlations between self-compassion and well-being factors across diverse cultures (Fung et al., 2021; Kotera et al., 2020). These findings underscore the need for additional cultural investigations into self-compassion and psycho-cultural factors that may contribute to these observed differences. Further understanding of self-compassion across cultures can be significant for facilitating psychological wellbeing across diverse populations.

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# TEACHERS' WELL-BEING IN SLOVENIA: THE ROLE OF MINDFULNESS AND MINDFUL TEACHING

**Ana Kozina**

*Educational Research Institute (Slovenia)*

## Abstract

The need to support teachers is more pressing every day as the teacher shortage is becoming an acute problem across Europe. One of the possible mechanisms leading to teachers leaving the profession are increased levels of stress and burnout. Stress influences processes crucial for successful teaching and learning, that is attention, decision making and the quality of relationships. The increase in reported emotional difficulties reflected in increased levels of stress and burnout in teachers across Europe adds to the importance of co conceptual understanding of the underlying processes as well as support mechanisms for teachers' well-being. As mindfulness has documented benefits for one's own well-being as well as on relationships with others, it is one of the possible mechanisms of support. In the present paper, we empirically test this hypothesis by analysing the predictive power of mindfulness for teachers' well-being, e.g., well-being and burnout, as well as behaviour in the classroom, e.g., mindful teaching. In addition, we test the indirect paths leading from mindfulness to selected outcomes through mindful teaching. We use data from the Slovenian sample of the project "HAND IN HAND: Empowering Teachers Across Europe to Deal with Social, Emotional and Diversity Related Career Challenges" ( $n = 272$ ; 253 women). The teachers involved in the project "HAND IN HAND" were provided with a battery of measurement tools focusing on their social, emotional and diversity awareness competencies. In this paper, we will use the data from The Mindful Attention Awareness Scale, WHO-5 Wellbeing Scale, Mindfulness in teaching and Shirom-Melamed Burnout Questionnaire. The findings show significant direct paths from mindfulness to well-being, burnout and intrapersonal (and not interpersonal) dimension of mindful teaching. The indirect paths from mindfulness to wellbeing and burnout through mindful teaching were not significant.

**Keywords:** *Teachers, mindfulness, mindful teaching, burnout, well-being, Slovenia.*

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## 1. Introduction

Teachers across Europe face a multitude of challenges associated with the characteristics of their profession, e.g., new skills requirements and rapid technological developments, challenges associated with their teaching and classroom interactions, e.g., discipline and increasing social and cultural diversity. The challenges faced by teachers are adding to the frequency and intensity of their emotional problems and increased levels of stress that are potentially leading to burnout. One mechanism for supporting teachers lies in promoting their social and emotional competencies as well as diversity awareness.

Possessing and developing teachers' social, emotional competencies and diversity awareness has proved to be important, both for the teachers themselves and for those with whom they are in close contact. One of the possible mechanisms of support for teachers' social, emotional competencies and diversity awareness is mindfulness (Roeser et al., 2012). Mindfulness disengages individual from automatic thoughts, habits and unhealthy behaviours and can therefore play a significant role in fostering self-determined behaviour regulation and well-being. Additionally, it contributes to well-being and satisfaction directly by higher quality or moment-to-moment experiences. With being more attentive and present one can fulfil basic psychological needs which then leads to higher wellbeing and life satisfaction and lower stress (Brown & Ryan, 2003). Mindfulness leads to stress reduction via: a) lowered stress reactivity by cultivating self-regulatory processes and coping mechanisms; and b) non-judgement and compassion in stressful situations (Roeser, 2016).

The importance of mindfulness in educational setting is described in the Theory of change model (Roeser et al, 2012). The model stresses the importance of mindfulness training in teachers' professional development. More specifically, mindfulness training, when high in quality and characterised by teacher engagement, triggers teachers' skills, such as emotional regulation, mindfulness and self-compassion, that



subsequently cause increases in their own well-being and, in turn, more positive and constructive processes in the classroom, e.g., classroom organisation, emotional support. The Roeser model is supported by research revealing that mindfulness training shows an improvement in mindfulness and a reduction in stress and burnout (Benn et al., 2012; Dave et al., 2020; Jennings et al., 2017; Roeser et al., 2013), as well as an improvement in teachers' competencies (Roeser et al., 2013). But even though mindfulness has been in a front row of research in recent years also in the educational setting (Schonert-Reichl & Roeser, 2017) it hasn't been properly contextualised with measure focusing on the educational context. Therefore, in the current study we use a measure of mindfulness and teaching, that is how mindfulness is experienced in teaching (Frank et al., 2016). Mindfulness in teaching is characterised by two dimensions: intrapersonal and interpersonal. Intrapersonal dimension of mindfulness in teaching taps mindfulness directed towards ones' own experience. Interpersonal dimension considers ones' own awareness and behaviour towards others. More specifically it is described by a) listening with full awareness b) present-centered awareness of emotions experienced by self and others in interaction c) openness, acceptance and receptivity to others' thoughts and feelings d) self-regulation that included low emotional and behavioural reactivity and low automaticity in responses to the everyday behaviour of others e) compassion to self and to others (Duncan et al, 2009; Frank et al., 2016).

In the current study we will firstly analyse paths leadings from mindfulness to selected teachers' outcomes: well-being, burnout, and teachers' behaviour: mindful teaching. Further on we will test indirect paths leading from mindfulness to selected teachers' outcomes (well-being and burnout) through teachers' behaviour (mindful teaching).

## 2. Method

### 2.1. Participants

The data from Slovene sample of the "HAND IN HAND: Empowering teachers across Europe to deal with social, emotional and diversity related career challenges (HAND:ET)" project ( $N = 264$ ; 253 females; 207 teachers, 20 principals, 29 other school staff, 8 trainers) is used. On average they were 41,98 years old ( $SD = 7,67$ ) and had 15.27 years of experiences teaching ( $SD = 8.91$ ).

### 2.2. Instruments

Implementing HAND:ET project teachers were administered with a battery of measurement tools targeting their social, emotional competencies and diversity awareness competencies. In the current study we use: **The Mindful Attention Awareness Scale** (MAAS; Brown & Ryan, 2003) is a scale to assess dispositional mindfulness as a state of mind in which attention only observes what is happening in the present moment. It consists of 15 items on 6-point scale ( $\alpha = 0.889$ ). Low score represents high mindfulness. **WHO-5 Wellbeing Scale** (Topp et al, 2015) The World Health Organisation- Five Well-Being Index (WHO-5) is a short self-report questionnaire on the current well-being. It consists of 5 items on a 5-point scale ( $\alpha = 0.897$ ). High score represents high well-being. **Mindfulness in Teaching** (Frank et al., 2016) measures teachers' focus during instruction and daily school activities, emotional awareness, self-regulation, as well as responsivity and sensitivity during student–teacher interactions. It consists of 14 items on a 5-point scale measuring two dimensions: Intrapersonal mindfulness measures difficulty in remaining focused and present ( $\alpha = 0.834$ ) and Intrapersonal mindfulness that measures ability to respond to students in a controlled and positive manner ( $\alpha = 0.708$ ). High score represents high mindfulness in teaching. **Shirom-Melamed Burnout Questionnaire** (SMBQ) (Melamed et al., 1992) measures three dimensions of burnout: physical fatigue, cognitive weariness, and emotional exhaustion ( $\alpha = 0.934$ ). High score represents high level of burnout.

### 2.3. Procedure

This study is a part of the Erasmus+ project HAND in HAND: which included a field trial in five EU countries (Croatia, Slovenia, Portugal, Austria and Sweden). In September 2022, teachers completed a battery of questionnaires tapping into social, emotional, diversity awareness, and demographic information using online tools. Informed consents were gathered beforehand. For this study, we only present data from Slovenia for the selected measures. The original scales were translated into Slovenian using committee approach.

### 2.4. Data analyses

After examining descriptive statistics, correlations, and reliabilities using IBM SPSS Statistics 26, we conducted CFA (confirmatory factor analysis), and SEM (structural equation modelling) using Mplus (Version 8.1; Muthén & Muthén, 1998–2017). A maximum likelihood (ML) algorithm was used to handle

missing data and assess parameters in the model. Separate CFA models were conducted for each construct. If indicated by modification indices and justified by the content of the items, a correlation between these items was added. CFA models were brought into the mediation model in the second step. Item loadings were interpreted in accordance with Tabachnick and Fidell (2006), suggesting cut-off values of 0.32 (poor), 0.45 (fair), 0.55 (good), 0.63 (very good), or 0.71 (excellent). Model fit was assessed with chi-square ( $\chi^2$ ), comparative fit indices (CFI), root mean square error of approximation (RMSEA), and standardised root mean square residual (SRMR), following the recommendations by Hu and Bentler (1999) for a good fit: CFI > 0.95, RMSEA < 0.06, and SRMR < 0.08. For adequate fit, the following cut-off values were applied: CFI > 0.90, RMSEA < 0.08, and SRMR < 0.08 (Hair et al., 1998).

### 3. Results

Means, standard deviations, and correlations for the questionnaire mean scores are presented in Table 1 to provide a brief insight into the data; however, in the CFA and SEM analyses, questionnaire items were used as indicators of latent variables. Following the recommendation of Curran et al. (1996) for ensuring the multivariate normality required in SEM, no variables (items) needed to be transformed due to excessive skewness or kurtosis.

Table 1. Descriptive Statistics and Correlations across scales.

|   |                                 | <i>M</i> | <i>SD</i> | 1       | 2       | 3     | 4       |
|---|---------------------------------|----------|-----------|---------|---------|-------|---------|
| 1 | Mindfulness                     | 2.92     | 0.71      | -       |         |       |         |
| 2 | Mindful teaching: Intrapersonal | 3.93     | 0.53      | -.582** | -       |       |         |
| 3 | Mindful teaching: Interpersonal | 4.03     | 0.52      | -.129   | .305**  | -     |         |
| 4 | Well-being                      | 3.70     | 0.97      | -.259** | .115    | .142* | -       |
| 5 | Burnout                         | 3.40     | 1.10      | .442**  | -.367** | -.076 | -.592** |

Notes: \*  $p \leq 0.05$ , \*\*  $p \leq 0.01$ , \*\*\*  $p \leq 0.001$ .

CFA models for each construct were examined. The items were used as indicators in the models. Fit indices are summarized in Table 2.

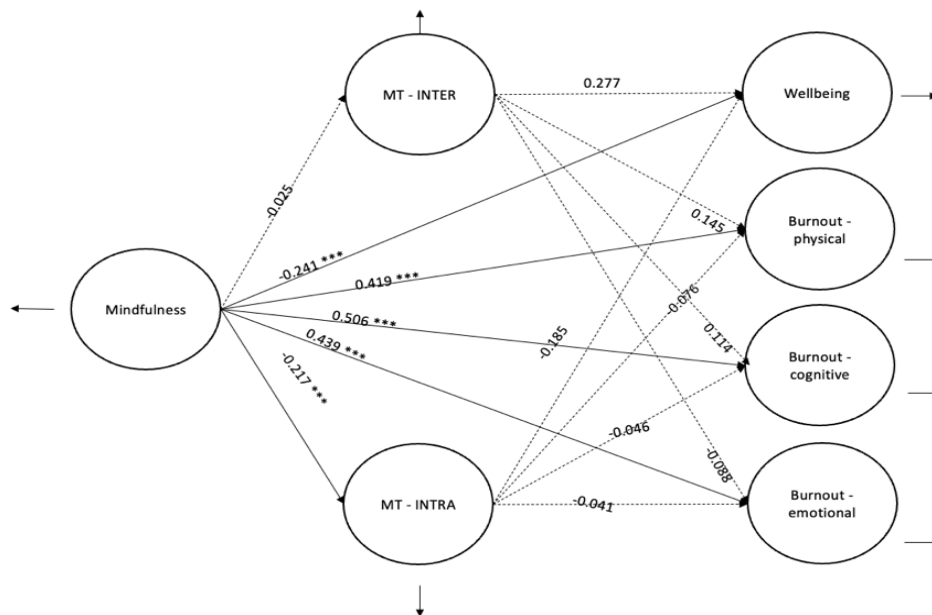
Table 2. Model Fit Indices for Latent Constructs.

| Scale            | $\chi^2$ (df) |     | CFI   | RMSEA [90% CFI]     | SRMR  |
|------------------|---------------|-----|-------|---------------------|-------|
| Mindfulness      | 285.652 (84)  | *** | .964  | 0.095 [0.083–0.108] | 0.043 |
| Mindful teaching | 183.450 (76)  | *** | .997  | 0.073 [0.060–0.087] | 0.019 |
| Well-being       | 1.596 (2)     | *** | 1.000 | 0.000[0.000–0.114]  | 0.004 |
| Burnout          | 272.826 (70)  | *** | 0.991 | 0.105 [0.092–0.118] | 0.027 |

Notes: \*  $p \leq 0.05$ , \*\*  $p \leq 0.01$ , \*\*\*  $p \leq 0.001$ .

Further on we investigated mediations models in which we analyse direct and indirect paths leading from mindfulness and mindful teaching to wellbeing and burnout. The model fits the data adequately:  $\chi^2(1046) = 1637.220$ ,  $p = .000$ ; CFI = .983; RMSEA = .046, 90% CI [.042, .051]; SRMR = .051.

Figure 1. Relationships between Mindfulness, Burnout, Well-being and Mindfulness in Teaching: Structural Equation Model. The numbers present completely standardised coefficient estimates. Solid lines represent significant paths or correlations and dashed lines indicate non-significant paths or correlations. \*\*\* $p < .001$ .



There are significant direct paths leading from Mindfulness to Wellbeing, Mindfulness in Teaching – Intrapersonal dimension (and not Interpersonal dimension) and all dimensions of Burnout. The indirect path from Mindfulness through Mindfulness in Teaching (both dimensions) is not significant.

#### 4. Conclusions

The current study explored the role of mindfulness in selected teachers' outcomes, well-being and burnout as well as teachers' behaviour, mindfulness in teaching. The increase in reported emotional difficulties shown in increased levels of stress and burnout in teachers across Europe (Roeser et al., 2012) adds to the importance of a conceptual understanding of the underlying processes as well as mechanisms to support teachers' well-being, such as mindfulness.

The findings show that mindfulness plays a significant role in teacher 's well-being in Slovenia. Higher mindfulness is significantly associated with higher well-being. One of the mechanisms contributing to well-being is higher quality or moment-to-moment experiences (Brown & Ryan, 2003) triggered by enhanced mindfulness. Further on, high mindfulness is associated with low level of all three measured dimensions of burnout. This finding is important as stress influences processes crucial for successful teaching and learning, such as attention (MacKenzie et al., 2007), decision-making (Shanafelt et al., 2003) and the quality of relationships (Durtschi et al., 2017). As for the connecting between mindfulness and mindfulness in teaching, a significant path was established leading from mindfulness to intrapersonal dimension of mindfulness in teaching and not to the interpersonal dimension of mindfulness in teaching. The indirect path from mindfulness to teacher's outcome through mindfulness in teaching was not significant as well. As there is conceptual overlap between mindfulness and mindfulness in teaching intrapersonal dimension the positive association was expected. The association between mindfulness and interpersonal dimension of mindfulness in teaching was not significant and this way our findings did not support the path from mindfulness to mindful behaviour in classroom. Further research in this direction is needed, especially in answering the question if mindfulness supports intrapersonal dimension of mindfulness in teaching what support interpersonal dimension of mindfulness in teaching? As relationships are core of educational process the interpersonal dimension is crucial.

Despite its limitation (cross sectional design, small sample size, reliance on self-report measures) the study does highlight important role of mindfulness for teachers' well-being, stress and burnout while the associations between mindfulness and mindful behaviour in classroom need to be explored further.

### Acknowledgments

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## STANDARDISING MEDICAL SECLUSION REVIEWS AT THE HARBOR PSYCHIATRIC HOSPITAL

Afifa Qamar, Chioma Elwa-Epaku, & Chandrashekar Gangaraju  
*Psychiatric Intensive Care Unit, The Harbor (England)*

### Abstract

**Background:** Seclusion is a common method used to contain severe behavioural disturbance in psychiatric patients. Given the nature of the treatment the Mental health act 1983 (2015) advise regular medical reviews of patients in seclusion. Medical reviews are often conducted by junior doctors with little or no psychiatric experience, and with little awareness of guidance, standard of reviews often vary. **Aim:** To understand the impact of a template on the quality of seclusion review documentation by Junior doctors within the hospital. **Methods:** We retrospectively collected data on seclusion reviews 1 month prior to any intervention. After discussion with MDT including psychiatrists, psychologists, nurses, and junior doctors, formulated a documentation template for reviews. All juniors were made aware of this template. Data was collected 1 month after implementation of template to assess their use. Doctors' opinions were also evaluated by feedback surveys. **Results:** Prior to the implementation of the template, although general physical health and reasons for seclusion were well documented, more in depth aspects were missed such as diet and fluid intake, physical observations, seclusion information and nursing team input. Following implementation of the template documentation of information in all relevant fields improved except for fluid and dietary intake. Junior doctors felt more confident in conduction seclusion reviews and nursing team felt more involved in reviews. **Conclusion:** Implementation of a template for documenting seclusion reviews improved quality of reviews by junior doctors and is expected to improve quality of care and patient safety and also communication between professionals.

**Keywords:** *Medical, seclusion review, guidance, template, standard.*

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### 1. Introduction

Seclusion is a psychiatric intervention used for patients with severe behavioural disturbances which pose a risk to themselves or others. Although practice worldwide varies, this typically involves the confinement of a patient in a minimally furnished room, whilst under supervision (Newton-Howes, 2013). Patients in seclusion are at an increased risk of physical harm due to their own mental illnesses as well as staff factors (Varpula et al., 2021). Often adjustments to usual patient care techniques are required due to the nature of patients' mental illnesses (Clark et al., 2022). In order to maintain patient safety regular medical and psychiatric reviews are conducted by medical professionals.

In the United Kingdom the Mental Health Act 1983 code of practice (MHA CoP) outlines the frequency and standards of medical seclusion reviews (Royal College of Psychiatrists, 2016). According to MHA CoP medical reviews should include a review of patients physical and psychiatric health, assessment of medication, review of observations, risk assessment and need to continue seclusion. The translation of these guidelines into local trust guidance and into clinical practice can be difficult. Medical reviews are often carried out by junior doctors with no training in psychiatry and little awareness of guidance. Audits in various trusts have highlighted the need for further junior doctor training to improve quality of seclusion reviews (Alkasser, 2023; Middleton, 2023).

In this quality improvement project, we aim to audit the medical seclusion review documentation at The Harbour Psychiatric Hospital, Blackpool, England. Furthermore, we aimed to improve patient safety by addressing quality of reviews and junior doctor confidence in completing them. This was carried out by implementing a new documentation template.

## 2. Methods

We conducted audits of medical review documentation prior to and after implementation of documentation template. Data was collected from one adult male and one adult female psychiatric intensive care unit ward.

### 2.1. Pre-intervention documentation audit

Initial data was collected from February 2023. 29 patient records were identified who had been under seclusion during the initial month of data collection retrospectively. Initial medical review documentation in patients' electronic records were reviewed. Documentation assessment criteria was determined after discussion with MDT including psychiatrists, psychologists, nursing team and junior doctors. Assessment criteria included: reason for seclusion, patient behaviour, mental state examination. Physical observations, fluid and diet intake, medication concordance and review, environment, nursing comments and seclusion duration were assessed.

### 2.2. Implementation of a template for documentation

A template for documentation of seclusion reviews (Figure 1) was created after discussion with the MDT. Junior doctors conducting medical reviews were made aware of the tool and the location of it. The template, whilst not exhaustive, had some explanation of some headings to help the junior doctor complete it as some junior doctors are new to psychiatry.

*Figure 1. Seclusion review template created for medical seclusion reviews*

**Physical Health Review for Patients in Seclusion Performa**

Date seclusion started:

Reason for seclusion:

Behaviour on ward (comment on what are nurses reporting regarding general behaviour throughout the day)

Seclusion room environment: (comment of cleanliness, temperature any forms of protest?)

Appearance of patient (comment on patient hygiene, clothing and facial expression)

Behaviour observed by doctor (comment on agitation, response to unseen stimuli, repeated behaviours, speech)

Medication review (comment on concordance with medication, reasons if not accepting, any side effects observed)

Fluid intake:

Diet intake:

Physical observations (report NEWS and if any concerns please elaborate, if non-contact obs repor any concerns)

Physical health concerns (comment on any physical health issues, if none please state no concerns)

Plan:

Junior doctor feedback was collected 1 month after implementation of the template anonymously through feedback forms. Informal feedback was also taken from the wider medical team. All 10 junior doctors at the hospital conducting reviews engaged in the feedback collection process.

### 2.3. Re-audit Post implementation of the template

In the month following the implementation of the documentation tool 12 patients were identified as being placed in seclusion. The same parameters were assessed for documentation standards as the pre-intervention audit. Electronic records were assessed retrospectively once the change had been made.

### 3. Results

Comparatively more areas of documentation were covered after implementation of the documentation tool. Initially only 3 areas were covered in most patients' records, which included reasons for seclusion (19 of 29 records), patient behavior (27 of 29 records) and general comments on physical health (20 of 29) (Figure 2). These also remained well documented after the template with 85% of records including this information (Figure 3) 14 of the 29 initial patient records had nursing comments.

Improvement was also seen in medication reviews with initially only 28% of records evidencing medication reviews improving to 85% of records. Other physical health parameters also improved with physical observations being recorded initially in only 34% of records, improving to 85%.

Fluid and dietary intake remained poorly documented in both audits. Initially only 5 of 29 records mentioned this and after implementation of the tool 2 out of 12 of the records did. Nursing documentation and barriers to diet and fluid monitoring were identified as factors contributing to this.

After implementation of the tool only two reviews were documented without using the tool. It was these two reviews which showed the poorer standard of documentation. On further inspection of notes, these were completed by locum doctors who were not aware of the tool.

Figure 2. Figure showing the areas documented (purple) and not documented (grey) prior to any intervention.

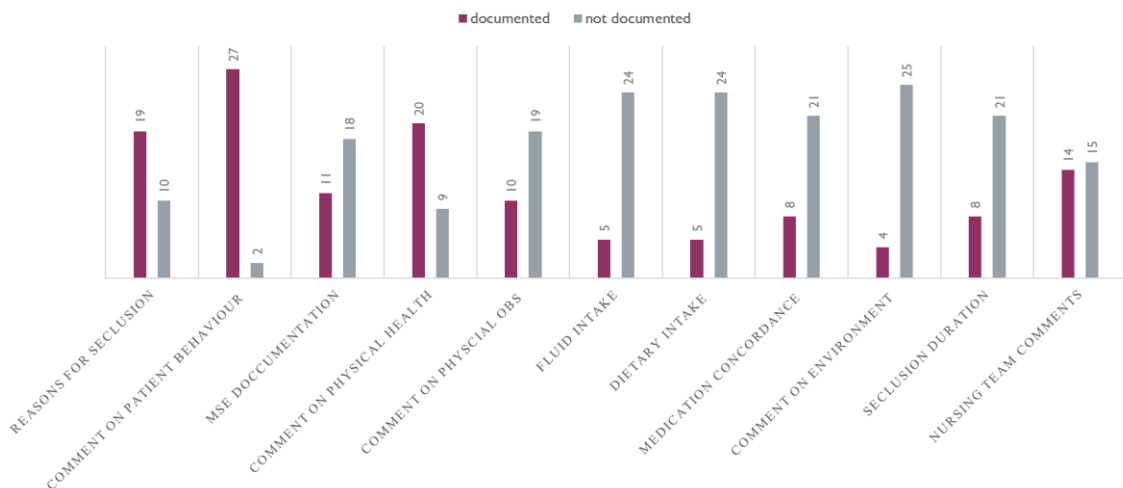
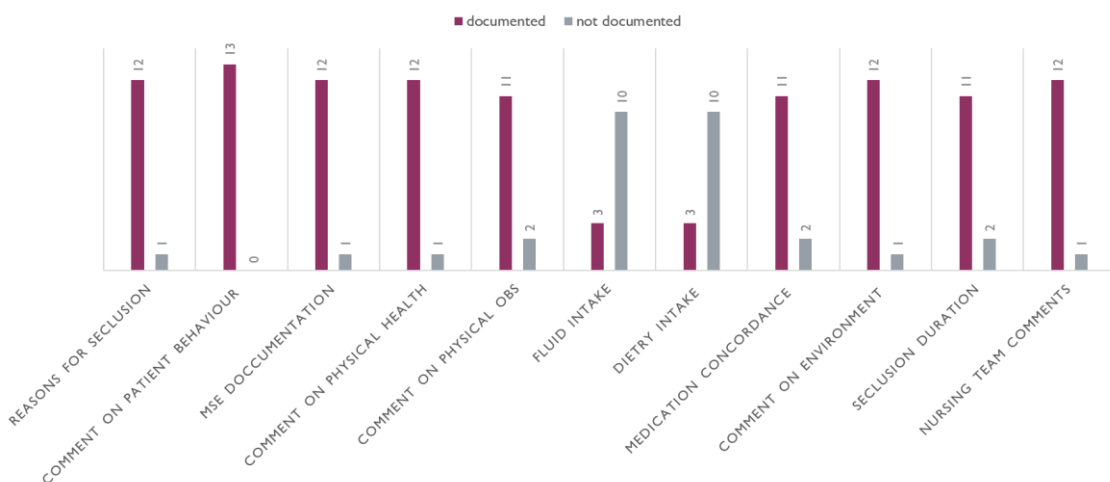


Figure 3. Figure showing the areas documented (purple) and not documented (grey) after implementation of documentation tool.



Confidence of junior doctors generally showed improvement in conducting seclusion reviews. Initially confidence was scored between 1 and 7 out of 10, after the template confidence ranged between 8 to 10 out of 10 (Figure 4 and 5). All doctors thought he tool was easy to use and found it helpful with 91.7% finding the tool extremely useful (Figure 6) and easy to use (Figure 7).

Figure 4. Self-reported junior doctor confidence ratings in completing seclusion reviews prior to template.

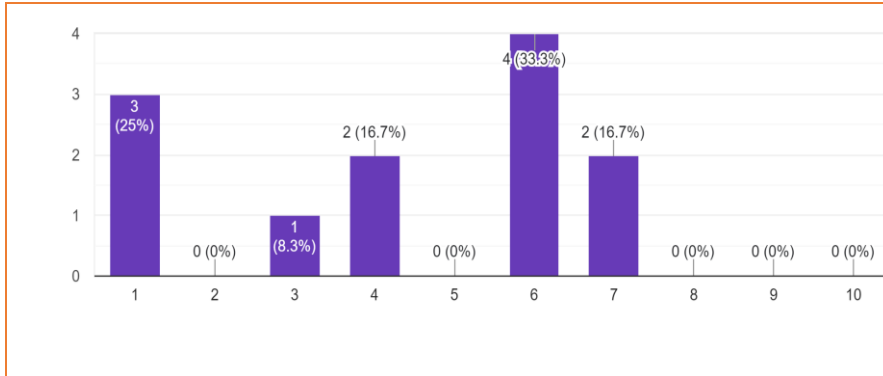


Figure 5. Self-reported junior doctor confidence in completing seclusion reviews after template.

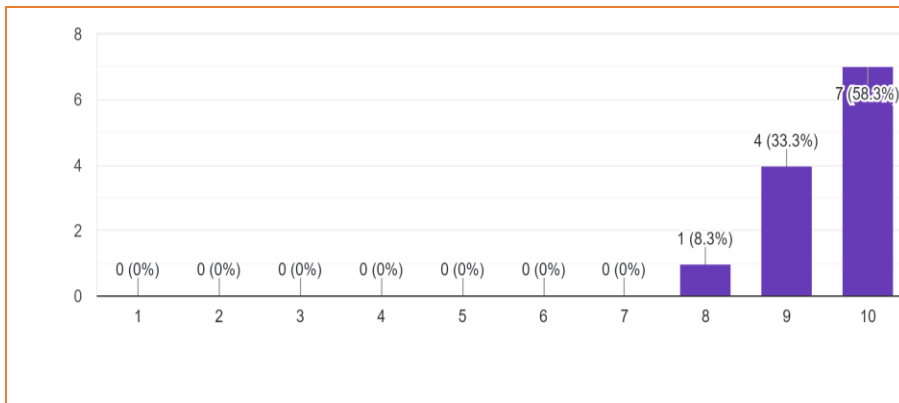


Figure 6. Representation of feedback regarding usefulness of documentation tool from junior doctors.

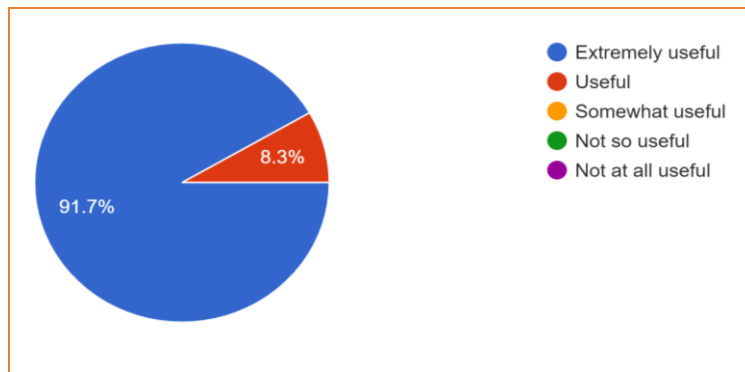
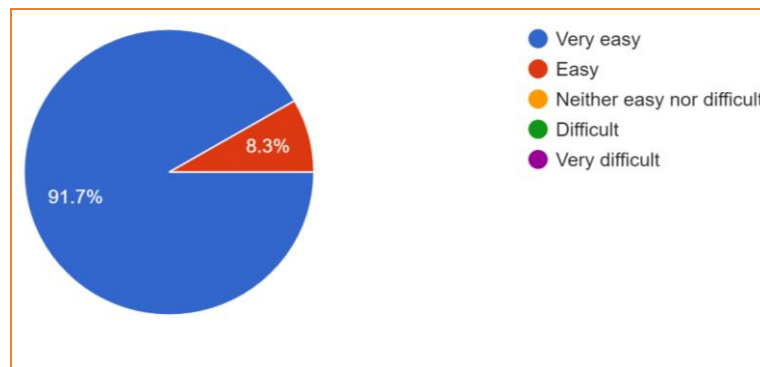




Figure 7. Representation of feedback regarding ease of use of documentation tool from junior doctors.



Informal feedback from the nursing team was that they felt more involved in seclusion reviews and were able to raise any concerns more effectively.

#### 4. Conclusions

The use of the seclusion review template improved the quality of documentation of seclusion reviews by junior doctors. The quality of seclusion reviews were poor prior to the template because it was difficult for junior doctors to know what they were looking for without prompts which they later had with the template. After the template was implemented the only factor which affected less than full compliance was occasions when locum doctors were working who were not aware of the template. All junior doctors felt that the template was not only useful but also easy to use. It was felt that junior doctors became more confident in conducting seclusion reviews and it increased overall multidisciplinary team communication. This survey shows how templates can be very useful in clinically important areas and can impact patient safety although this survey was not designed to identify any major clinical issue.

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## **SEX AND THE CLERGY: AN INSIDER PERSPECTIVE ON ATTITUDES TOWARDS CELIBACY**

**Andrea Catania, & Mary-Anne Lauri**  
*Department of Psychology, University of Malta (Malta)*

### **Abstract**

Sexuality is an important part of the human experience. It can be considered a sensitive topic especially in a religious context. Manliness, on the other hand, has been emphasised by the Catholic Church for many years (van Es, 2021). One example of this is through the support of male-dominant gender hierarchies in the Church (Gerber, 2015). Men and masculinities seem to be understudied in the religious sphere and studies on gender and religion tend to centre around women (Romeo Mateo, 2021). There is literature about celibacy and loneliness, however, many of these studies are among involuntary celibates known as incels (Sparks et al., 2023). Research on the intersection of sexuality, masculinity, and religion among clergy is lacking. This is surprising, since celibacy is a notable pillar of priesthood in the Catholic Church. It is especially so in the Maltese context where the ratio of priests in the community is high compared to other secularized societies. It is therefore important to understand what part sexuality plays in the life of a celibate person, especially in the context of hegemonic masculinity. This is because priests tend to fall between two male stereotypes: the hegemonic man and the biblical man (Roger, 2019). Hence, the aim of the study is to investigate whether there is a relationship between celibacy, manhood beliefs and loneliness. A survey will be carried out among a sample of Roman Catholic priests living in Malta. Questions from three scales will be used in the questionnaire: the Commitment to Celibacy Scale (Joseph et al., 2010), the Loneliness Scale (de Jong Grieveld & Van Tilburg, 2006), and a manhood beliefs scale. The expected sample size is 150 male priests. There is an expected association between attitudes towards celibacy and manhood beliefs, as well as between attitudes towards celibacy and loneliness. However, the direction of the relationship will be determined by the results of the study.

**Keywords:** *Celibacy, manhood beliefs, loneliness, priests, attitudes.*

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## **1. Introduction**

Sexuality can be considered a sensitive topic and especially so in the religious sphere. In the Maltese Islands, mandated celibacy remains a contentious issue (Galea, 2011). Manliness, on the other hand, has been emphasised by the Catholic church for many years (van Es, 2021). Despite this emphasis, men and masculinities seem to be understudied in the religious sphere (van Es, 2021). In fact, studies on gender and religion tend to centre around women (Romeo Mateo, 2021). There seems to be a gap in research in the intersection of sexuality, masculinity, and religion with a focus on clergy. This is surprising, since celibacy is a notable pillar of priesthood. The notion of masculinity has opposing meanings in the church. On the one hand, according to the Bible Jesus treated women with respect despite living in a society which did not value women. Biblical manliness involves leading, loving, providing, and protecting (Rogers, 2019). Although up for debate, some authors postulate that there is a movement away from misogynistic views of femininity in the Church (Romeo Mateo, 2021). On the other hand, the Church has shown many instances of hegemonic masculinity in society. For example, conservative religious groups in general tend to support male-dominant gender hierarchies (Gerber, 2015).

### **1.1. The hegemonic man versus the biblical man**

Hegemonic masculinity encompasses different norms which describe a widespread ideal of what a man should be (Vernay, 2018). These norms include restricting emotionality, exhibiting dominance and toughness, avoiding femininity, displaying negative affect towards sexual minorities, and, most importantly for the current study, giving importance to sex (Levant et al., 2010). Although some values of the hegemonic man align with those of the biblical man (Rogers, 2019), there is also some distance between the two. Christianity has a history of male and heteronormative hierarchies, with sexism and

homophobia at the forefront (Nyhagen, 2020). At the same time, there are instances where stereotypically undesirable feminine traits have been marketed as desirable by the Church. For example, priests often display femininity by being nurturing, gentle, and even in the way they dress during sermons (Mínguez-Blasco, 2020). Bartkowski (2000) noted that religious men display a melange masculinity, which is at the same time strong and sensitive, and egalitarian and authority-minded. Heath (2003) observed practices in men that reaffirmed hegemonic masculinity. Gerber (2015) found that religious men reject some hegemonic norms whilst affirming others. However, all these studies were carried out on evangelical participants, who tend to advocate for traditional gender ideologies in their practice (Gerber, 2015). Roman Catholicism, the dominant religion in Malta, is scarcely researched in relation to masculinity.

## 1.2. Celibacy, loneliness, and manhood

Sexuality is considered an integral part of the human experience (Russell et al., 2020). It is also over-emphasised with regard to hegemonic masculinity. Hence, the question of the effects of celibacy on manhood is crucial to understand to ensure the wellbeing of these people. To those who do not commit to abstinence, religious celibacy can be seen as puzzling (Micheletti et al., 2022). Some argue that such a vow is a display of deep commitment to one's beliefs, which in turn aids the perpetuation of the religion because it increases the credibility of the perpetrator (Henrich, 2009). If hegemonic masculinity is the dominant form of masculinity, then one might extrapolate that in some ways it affects the Catholic church in ways which have not yet been researched. Furthermore, questions about the way priests define their own masculinity in the absence of sexuality remain unanswered. Masculine norms involve a sense of pressure toward sexual activity (Levant et al., 2007). Thus, this pressure could lead to men perceiving their virginity as embarrassing or anxiety-inducing (Boislard et al., 2016). Moreover, priests have voiced that mandatory celibacy is contributing to their loneliness and demoralisation (Weafer, 2013). Although it can have positive effects, celibacy and obedience can also have negative impacts on priests' mental health, contributing to depression and loneliness (Isacco et al., 2015). Hence, it would be interesting to determine how men who are voluntarily celibate combat this pressure, and whether these negative associations with virginity are also made by priests. An interesting suggestion by Bordisso (2011) is that the way priests experience celibacy is on a continuum, with acceptance on one end and rejection on the other. Most priests are said to fall somewhere in the middle. Hence, it would be relevant to measure the attitudes held by priests towards celibacy, sexuality, and masculinity, whilst also determining the effects these constructs might have on loneliness in priests.

## 1.3. The tripartite theory of attitudes

A common theory which can be applied to these constructs is the tripartite theory of attitudes, sometimes referred to as the ABC model (Rosenberg & Hovland, 1960). Attitudes have a tripartite structure; they involve cognitive, emotional, and behavioural elements (Spooncer, 1992). The cognitive element refers to one's beliefs, the emotional element refers to one's feelings, and the behavioural element refers to the ways in which one behaves towards the concept or attitude object. Since it is believed that attitudes have a direct influence on behaviour, it might be interesting to apply this framework to the context of celibacy. Beliefs and feelings held about celibacy, sexuality, and masculinity will be examined through this study.

Based on this literature search, the below hypotheses are being proposed:

**H<sub>1</sub>:** In clergy members, there is an association between attitudes towards celibacy and traditional manhood beliefs.

**H<sub>2</sub>:** In clergy members, there is an association between attitudes towards celibacy and loneliness.

## 2. Design and methods

A quantitative approach will be used, with data being collected through anonymous online questionnaires covering four areas: (1) demographic data; (2) attitudes towards celibacy; (3) manhood beliefs; (4) loneliness. Participants will first be asked to give their age, what role they hold in the clergy, the spiritual modality that they follow, and the number of years for which they have been a clergy member. An open-ended question was added towards the end, where participants are asked to describe what loneliness feels like to them in one word.

**Commitment to celibacy scale (Joseph et al., 2010).** This scale was used to determine the attitudes of priests towards the commitment of celibacy. Items are rated on a 5-point Likert scale from 'strongly disagree' to 'strongly agree'. Internal consistency is high, with Cronbach's alpha being .85 (Joseph et al., 2010).

**Manhood beliefs.** This scale was developed by the authors based on the four pillars of masculinity developed by David and Brannon (1976). Table 1 shows these four pillars as well as the corresponding questions which were devised. Each statement is rated on a 5-point Likert scale from ‘strongly disagree’ to ‘strongly agree’.

Table 1. Manhood beliefs scale.

|                          |  |
|--------------------------|--|
| Pillar 1: No Sissy Stuff | Men should be emotionally strong in all situations |
| Pillar 2: The Big Wheel  | Success is important for all men                   |
| Pillar 3: The Sturdy Oak | Men are self-reliant                               |
| Pillar 4: Give ‘Em Hell  | I believe a man should be tough                    |

**UCLA 3-item loneliness scale (Hughes et al., 2008).** This scale was used to measure overall levels of loneliness in the participants, rating items on a 3-point Likert scale from ‘hardly ever or never’ to ‘often’. Internal consistency for this scale is good, with Cronbach’s alpha being .72 and a strong correlation (.82) with the original long version of this scale (Hughes et al., 2008). In addition to this indirect measure of loneliness, a one-item measure of loneliness was added to questionnaire as a direct measure of loneliness, by directly asking ‘*how often do you feel lonely?*’ This is rated on a 5-point Likert scale from ‘often’ to ‘never’.

The questionnaire was piloted to ascertain that there were no confusing or misleading questions, and feedback addressed. To participate in the study, one had to be over 18 years old, male, Maltese or Gozitan, and a clergy member. The type of clergy member was not an issue, as long as the role required the individual to be celibate.

### 3. Expected results

To test the hypotheses, correlational analyses will be carried out to determine the correlations between attitudes towards celibacy and manhood beliefs, and attitudes towards celibacy and loneliness.

Based on previous studies carried out on involuntary celibates, it is expected that clergy members will score high in feelings of loneliness. However, it is unclear whether the correlation between loneliness and attitudes towards celibacy will be positive or negative. The same applies to the correlation between attitudes towards celibacy and manhood beliefs. It might be the case that higher agreement with stereotypical manhood beliefs will have a negative correlation with commitment to celibacy, since stereotypical manhood beliefs tend to correspond to higher positive attitudes towards sex.

### 4. Conclusion

This subject is particularly pertinent in the current Maltese climate, with discussions being held at the time of writing surrounding the idea of mandatory celibacy in Roman Catholic priests. The Maltese Archbishop himself has made statements challenging this mandate. With loneliness on the rise and commitment to priesthood on the decline, this study could have great impacts on the way priesthood is conceptualized in Malta. It might help mitigate deterrents to young men who wish to enter the priesthood. Further to this, the data gathered in this study might help inform decisions made about the celibacy mandate in Malta. This topic has been put on the public agenda as well as on the agenda of the Church in Malta.

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## DEVELOPMENT OF A SOCIAL SKILLS CHECKLIST FOR ADULTS AND EXAMINATION OF ITS PSYCHOMETRIC PROPERTIES

Arkun Tatar<sup>1</sup>, & Gaye Saltukoğlu<sup>2</sup>

<sup>1</sup>Department of Psychology, Manisa Celal Bayar University (Türkiye)

<sup>2</sup>Department of Psychology, FSM Vakif University (Türkiye)

### Abstract

Social skills are mostly studied in children and adolescents. However, social skill problems are also seen in adults, but there are few studies on the subject in this group. It is considered that the source of this problem is the scarcity of measurement tools for adults. In this regard, this study aimed to develop a social skills checklist for the adult group. A three-stage study was planned, including the creation of the item pool, item selection, and validity procedures. First, an item pool containing 115 items was created. This item pool was applied to a total of 778 people, 398 men and 380 women, between the ages of 18-65. At this stage, 45 items were selected using item response theory and item analysis. At this stage, the study data was divided into two parts, and explanatory and confirmatory factor analysis was applied to each. It was observed that the two sub-dimensions of the scale, created from the selected items, named "Affective Components" and "Cognitive Components", explained 34.808% of the total variance. Confirmatory factor analysis results revealed that the two-dimensional structure showed model fit. In this study, the internal consistency reliability coefficient was found to be .935 for the whole scale, .910 for the Affective Components sub-dimension, and .881 for the Cognitive Components sub-dimension. The third stage and the second application were made for the test-retest process. A total of 60 people, 24 men and 26 women, between the ages of 18-57, participated in this application. The test-retest reliability coefficient was .825 for the whole scale,  $r = .782$  for the Affective Components sub-dimension, and  $r = .833$  for the Cognitive Components sub-dimension. The results obtained showed that the initial validity and reliability values of the developed checklist were at an acceptable level.

**Keywords:** *Social skill, adult, affective component, cognitive component, check list.*

### 1. Introduction

Most definitions of social skills are quite abstract and do not fully specify concrete behaviors (Heinrichs et al., 2006). Social skills include four components that include knowledge about verbal, nonverbal, situational, and situational needs. It also includes the ability to perceive social or interpersonal cues, integrate these cues with existing motivations, produce reactions, and implement reactions that will satisfy motives / goals (Grover et al., 2020; Heinrichs et al., 2006; Norton & Hope, 2001). In other words, social skills are the correct way to comply with social rules and social-emotional skills used to correctly select useful information or services and to initiate and/or maintain good social relationships with others (Beauchamp & Anderson, 2010; Gillis & Butler, 2007; Liberman, 1982; Sharma et al., 2016). Individuals take into account the consequences of their social behavior to minimize negative consequences and maximize positive consequences in social situations. In this respect, social skill, which expresses social performance, refers only to objectively observable behavior and is distinguished from social competence (Heinrichs et al., 2006).

Although there are many scales in Turkish form for assessing social skills in children and adolescents, a scale with 80 items called A Social Skills Scale-80 is observed for adults (Tatar, 2023; Tatar et al., 2018). For this reason, this study was considered to develop a scale that allows short and quick answers in cross-sectional / survey-type studies to evaluate social skills in the adult group. The scale was planned to include cognitive sub-dimensions, consisting of attention and executive functions, and affective sub-dimensions, consisting of communication and socio-emotional skills (Beauchamp & Anderson, 2010; de Boo & Prins, 2007). Considering the relevant literature, it was aimed to develop a social skills scale that includes a structure with two interrelated sub-dimensions and is based on a check list.

## 2. Methods

This study was carried out in three stages: the creation of the item pool and two separate data collection studies, one containing one application and the other containing two applications.

### 2.1. Item Pool

The study started by creating the item pool with the relevant literature and covering the two determined sub-dimensions (Angélico et al., 2013; Beauchamp & Anderson, 2010; Cook et al., 2008; Del Prette & Del Prette, 2021; Grover et al., 2020; Gunning et al., 2019; Little et al., 2017; Lynch & Simpson, 2010; Matson et al., 2007; Matson & Wilkins, 2007; Moody & Laugeson, 2020; Rao et al., 2008; Segrin, 2000; Spence, 2003; Wilkins & Matson, 2007). In this regard, 115 items were written describing affective (e.g., being able to communicate verbally, being able to act comfortably in front of society) and cognitive (e.g., being aware, accepting criticism) social skill components.

### 2.2. Participants

A total of 778 people, 398 men (51.2%) and 380 women (48.8%) between the ages of 18-65 ( $M = 29.15 \pm 10.34$ ), participated in the first study. A total of 60 people, 24 men (52.0%) and 26 women (48.0%), aged 18-57 ( $M = 30.88 \pm 10.711$ ), participated in both applications of the second study.

### 2.3. Materials

The first application of the study was conducted with an item pool containing 115 items, nine of which were reverse-scored, with a five-point Likert-type answer option. Both applications of the second study were conducted with the new / developed form called “A Social Skills Checklist-45”, which consists of 45 items selected in the first application. In both applications of the second study, A Social Skills Scale-80 and Big Five-50 Personality Test were also administered for validity procedures.

### 2.4. Procedure and data analysis

The applications of this study were carried out online with a web-based form. In applications, access to the form was provided after preliminary information in which the study and its purpose were explained, and permission was given to continue on condition of voluntary participation. Applications were completed in a single session and no identification information was obtained.

To this study data, two-parameter logistic item response theory model and item analysis with classical theory, explanatory and confirmatory factor analyses for the selected and developed scale form, descriptive statistics for total scores, calculation of Cronbach alpha internal consistency reliability coefficients, two-half test, Pearson correlation analysis, and paired-sample t-test were performed.

### 2.5. Results

In the first study, the item pool data consisting of 115 items were analyzed using the two-parameter logistic item response theory model and item analysis based on classical theory, and item selection procedures were carried out. It was observed that the item discrimination of the item pool items was between .004 and 2.361 ( $M = 1.073 \pm .518$ ), and the item difficulties were between -5.324 and 2.457 ( $M = -1.287 \pm .863$ ). According to the item analysis results, item-scale total score correlations were between .081 and .662. In item selection, firstly, items with low item discrimination and similar contents were taken into consideration, and as a result of these processes, 70 items were eliminated, and 45 items were selected. Item discrimination of the selected items was found to be between .755 and 2.519 ( $M = 1.263 \pm .423$ ), and item difficulties were found to be between -2.764 and -.856 ( $M = -1.764 \pm .470$ ). When item and reliability analysis was conducted for the selected items using classical theory, item-scale total score correlations were between .348 and .686, according to the item analysis results. A correlation coefficient of .970 ( $p < .001$ ) was calculated between the total scores of the item pool items and the total scores of the selected items.

To conduct explanatory and confirmatory factor analyses to examine the structure of the developed scale, the first study data was divided into odd and even-numbered participants and two separate data sets with  $n_1 = 389$ ,  $n_2 = 389$  were obtained.

In the results of the principal components analysis conducted with the Varimax rotation method, it was seen that the two sub-dimensions of the developed scale, named “Affective Components” (eigenvalue = 12.605) and “Cognitive Components” (eigenvalue = 3.059), explained 34.808% of the total variance. The Affective Components sub-dimension consists of 23 items with factor loading values ranging from .350 to .709, and the Cognitive Components sub-dimension consists of 22 items with factor loading values ranging from .333 to .691.

For the two-factor model determined by the results of explanatory factor analysis using odd-numbered participant data, a confirmatory factor analysis was conducted using even-numbered participant data. According to the results, chi-square / df = 1370.461 / 911 = 1.504, RMR = .221, GFI = .850, AGFI = .814, NFI = .335, CFI = .531, RMSEA = .036.

The internal consistency reliability coefficient of the scale in the entire first study data was determined as .935. The internal consistency reliability coefficient was determined as .910 for the Affective Components sub-dimension and .881 for the Cognitive Components sub-dimension.

After item selection, construct validity, and reliability analyses were carried out with the first study data, and the second study data was examined. In this data, the internal consistency reliability coefficient of A Social Skills Checklist-45 was determined as .939 for the pre-test application and .950 for the retest application. In this study, the total score averages of the A Social Skills Checklist-45 pre-test and retest applications were compared for the paired-sample t-test, and no statistically significant difference was observed between the total scores of the two application scales ( $t(59) = -1.370$ ;  $p > .05$ ). Additionally,  $r = .825$  ( $p < .001$ ) was determined between these two total scores. When the level of correlation between subscale total scores was examined, correlation coefficients of  $r = .782$  ( $p < .001$ ) were obtained between the Affective Components subscale total scores and  $r = .833$  ( $p < .001$ ) correlation coefficients were obtained between the Cognitive Components subscale total scores.

In addition, criterion-related validity procedures were carried out. It was determined that the total score of A Social Skills Checklist-45 showed a correlation with the total score of A Social Skills Scale-80 at the level of  $r = .707$  in the pre-test data and  $r = .750$  in the retest data. In the same direction, in the pre-test and retest data, respectively, there were .438 and .458 between the developed scale total score and the Extraversion factor total score of the Big Five-50 Personality Test, .666 and .720 between the Agreeableness factor total score, and .409 and .528 between the Conscientiousness factor total score. Also, relations were calculated between the Emotional Stability factor total score at the level of .248 and .341, and between the Intelligence / Imagination factor total score at the level of .531 and .653.

### 3. Discussion

Concepts such as prosocial behavior, social adaptation, prosocial behavior, social competence, and social skills are often used interchangeably. This uncertainty negatively affects comparisons between studies, the effectiveness of intervention programs or treatments for problems observed within the framework of social functioning, and the evaluation of the quality of measurement tools developed to measure these phenomena (Cordier et al., 2015). Therefore, operational definitions and improved measurement tools for these phenomena are needed. People must cope with a variety of challenges every day, and successful management of the social world requires a developed repertoire of social skills and interpersonal problem-solving capacity. The purpose of measuring or evaluating social skills is to provide information about the nature of the problems / difficulties in terms of the phenomenon, to identify those experiencing these problems / difficulties, and to determine the effectiveness of possible intervention programs for these people (Spence, 2003). In this study, it was planned to develop a two-dimensional checklist focused on cognitive functions and affective processes (Beauchamp & Anderson, 2010) to evaluate social skills for the adult group.

In this study, item analysis and item selection were conducted using item response theory. In particular, the difficulty parameter of the two-parameter logistic item response theory model made it possible to determine the items that were functional at different levels in the field of social skill variance, and the item discrimination parameter made it possible to determine the items that were most functional in distinguishing individuals with different social skill levels.

Two aspects of social skills are emphasized: interrelated cognitive functions and affective processes (Beauchamp & Anderson, 2010). As a result of exploratory factor analysis, it reflected a two-factor structure, and confirmatory factor analysis results confirmed this finding. The developed scale was examined with factor analysis and presented with a two-dimensional structure consisting of Affective Components and Cognitive Components sub-dimensions.

It was observed that the scale reliability results were quite good, and its internal consistency was high. Another finding of the scale developed in the study is the criterion-related validity results. Validity results comparing personality measurements and social skills are given both for the other Turkish form for adults (Tatar, 2023; Tatar et al., 2018) and are observed in other studies in the literature (Morgeson et al., 2005; Nader-Grosbois & Mazzone, 2014; Wolf et al., 2009).

Supporting the developed scale with other validity studies is also a necessity for scale development processes. However, when the study results are evaluated, the presented scale shows that an alternative measurement tool has been developed for the adult group. Therefore, it was assumed that the initial validity and reliability findings obtained from the study showed that the psychometric properties of the developed scale were at an acceptable level.



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# WELLBEING OF SECONDARY SCHOOL STUDENTS FROM SERBIA: THE ROLE OF GENDER, SOCIOECONOMIC STATUS AND ETHNIC BACKGROUND

Nataša Simić<sup>1</sup>, Svetlana Jović<sup>2</sup>, & Danijela S. Petrović<sup>3</sup>

<sup>1</sup>University of Belgrade - Faculty of Philosophy, Institute of Psychology (Serbia)

<sup>2</sup>Department of Psychology, SUNY Old Westbury, Old Westbury, NY (USA)

<sup>3</sup>University of Belgrade - Faculty of Philosophy, Department of Psychology (Serbia)

## Abstract

All countries complying with the UN 2030 Sustainable Development Goals are committed to reducing poverty and socioeconomic disparities, ensuring inclusion, and improving health and wellbeing of its citizens. However, it is known that the odds for youth to thrive are significantly affected by their gender, socioeconomic and ethnic groups' positions within society. To explore the impact of these variables on the wellbeing of youth in Serbia, we conducted a study recruiting students from 20 secondary schools from different regions of the country. Participants were 1846 students ( $M_{\text{age}} = 16.26$ ; 52.6% female, 69.9% identified as Serbian (ethnic majority), 10.8% Hungarian, 11.1% Bosniak, and 8.2% Roma). We applied the scale *Personal Wellbeing Index* and we used one five-point Likert type item to assess depression. SES was measured through one question with five categories. Results indicate that students are relatively satisfied with their life ( $M = 7.4$ ,  $SD = 2.7$ ), with highest satisfaction with health and lowest satisfaction with financial status and achievements, while the scores for depression slightly surpass theoretical mean ( $M = 2.36$ ,  $SD = 1.39$ ). Students of different SES statistically significantly differ on all aspects of wellbeing and on depression, with wellbeing consistently increasing and depression decreasing with the rise of SES. When students of different ethnic backgrounds are compared, significant differences appear only for satisfaction with financial status, but the effect size is small. Female students have significantly lower scores for overall life satisfaction, satisfaction with relationships and safety, and higher scores on depression, but effect sizes are small. A regression analysis revealed that gender, SES and ethnic background can predict depression and wellbeing, but that only students' SES proved to be a significant predictor.

**Keywords:** *Life satisfaction, depression, socioeconomic status (SES), ethnicity, secondary school students.*

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## 1. Introduction

All countries complying with the UN 2030 Sustainable Development Goals are committed to reducing poverty and socioeconomic disparities, ensuring inclusion, and improving health and wellbeing of its citizens. Nevertheless, in the world of rapid and unpredictable changes many adolescents are facing severe mental health challenges. WHO\* states that 14% of 10-19-year-olds experience mental health conditions which often remain unrecognised and untreated.

Through its *Strategy for development of education until 2030*<sup>†</sup>, *Programme on mental health protection for the period 2019-2026*<sup>‡</sup> and other policies, Serbia has also committed to these global goals: however, there have been many challenges in practices, in both the educational and mental health sectors, which together with unstable sociopolitical situation and high levels of unemployment jeopardise wellbeing of youth.

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\* Retrieved from: <https://www.who.int/key-messages#:~:text=Globally%2C%20one%20in%20seven%2010,100%20deaths%20is%20by%20suicide>

† For more, see: [https://prosveta.gov.rs/wp-content/uploads/2021/11/1-SROVRS-2030\\_MASTER\\_0402\\_V1.pdf](https://prosveta.gov.rs/wp-content/uploads/2021/11/1-SROVRS-2030_MASTER_0402_V1.pdf)

‡ For more, see: <https://www.pravno-informacioni-sistem.rs/SlGlasnikPortal/eli/rep/sgrs/vlada/drugiakt/2019/84/1>

### 1.1. Youth wellbeing – the roles of gender, SES and ethnicity

In this study we define wellbeing as a multidimensional construct that encompasses various aspects of an individual's life satisfaction, such as physical health, emotional well-being, material well-being, and social connectedness (Cummins, 1997).

Studies show that females have lower scores on wellbeing/ life satisfaction than males (e.g., Chen et al., 2020). A large study with 11–18-year-old students from Hungary showed that boys scored higher on life satisfaction and lower on depression, compared to their female counterparts (Piko, 2023). A cross-national investigation with 15-year-olds confirmed that girls have worse mental health across different indicators (Campbell et al., 2021). On the other hand, some studies show the opposite results, pointing to the need for discussing wellbeing in a highly contextualised way (e.g. Joshanloo & Jovanović, 2020).

Poverty is a risk factor for mental health (Elgar et al., 2015; Graham & Chattopadhyay, 2013). On the individual level most studies showed that a persons' socioeconomic status (SES) is associated with wellbeing, meaning that persons from low SES families tend to have worse wellbeing (Erdem & Kaya, 2021; Kivimäki et al., 2020). In a study with 7-17 years-olds from Germany various indicators of SES separately predicted mental health problems at the 2-year follow-up (Reiss et al., 2019).

Finally, marginalised youth, that is, young people with disabilities, (undocumented) immigrants, and sexual and other minorities, are at an even higher risk of mental health issues (Sapiro & Ward, 2020). Ethnic minority status exposes people to discrimination and social marginalisation which leads towards mental health issues (Priest et al., 2013). There have been fewer studies of minority students' wellbeing in European context, but studies in Italy and Israel, for example, showed that immigrant adolescents report lower life satisfaction than their native peers (Vieno et al., 2009; Ullman & Tatar, 2001). However, in the UK and Island mixed findings of distress by ethnic background were reported (Khatib et al., 2013; Runarsdottir & Vilhjalmsón, 2019), suggesting that the family SES and support may play a more important role. There are indications that Roma youth tend to exhibit higher levels of anxiety and depression and lower levels of life satisfaction (Cvjetković et al., 2017; Dimitrova et al., 2012; Pereira et al., 2016). In most countries Roma students, unlike some other minority groups, face segregation, social exclusion and discrimination in the fields of housing, education, and employment (Cvejić, 2019; Simić & Vranješević, 2022), making them even more vulnerable than many other ethnic minority groups globally.

Abundance of literature pointed to the relevance of gender, SES and one's ethnic groups' positions within society for wellbeing, but the findings are not always unambiguous. In addition, there is a limited number of studies addressing the wellbeing of Roma students, and specifically – wellbeing of ethnic minorities, including Roma in Serbia. Therefore, our study aimed at filling this gap, as well as providing recommendations for specialists in the fields of education and youth mental health.

## 2. Methodological framework

### 2.1. Variables and instruments

We relied on Cummins (1997) definition of wellbeing and applied the translated and adjusted *Personal Wellbeing Index*, a version for school children (PWI-SC, Cummins & Lau, 2005). This 11-point Likert type scale consists of one item addressing the overall life satisfaction and seven items referring to following aspects of life: standard of living, personal health, achievement in life, personal relationships, personal safety, being part of community and future prospects. In addition, we used one five-point Likert type item ("I often feel sad") to assess depression.

Students reported their SES on a multiple-choice question (1 standing for „We barely cover expenses for food”, and 6 – „We have enough money for a luxurious life, including travelling to exotic destinations and investing”). Due to the low frequency of participants, we merged the two lowest categories into one for further analyses, so the variable we used had five categories (1 indicating the lowest and 5 - the highest SES). We asked about participants' gender through a multiple-choice question with categories: Male, Female, and Other. For the sake of this paper, we only used the first two categories. Participants reported their ethnic background on a multiple-choice question, but for this paper we categorised participants into four categories which referred to the majority (Serbian) and three most represented minorities in Serbia (Hungarian, Bosniak, and Roma).

### 2.2. Procedure and participants

We selected schools from multiethnic regions paying attention to the geographical distribution of schools, school size and educational profile, to ensure sample diversity. Twenty schools (six high schools and 14 vocational schools) participate in research. In schools with students of Hungarian background questionnaires were translated to Hungarian so students could answer in their native language. All

students were thoroughly informed about the research and after providing informed consents they filled out the questionnaires. Their participation was on a voluntary basis.

Final sample consisted of 1846 students,  $M_{age} = 16.26$ ,  $SD = 1.07$ , with 52.6% female students. More than two thirds (69.9%) reported being Serbian (ethnic majority), 10.8% Hungarian, 11.1% Bosniak, and 8.2% Roma.

### 2.3. Data analysis

After performing descriptive statistics, we compared different groups of participants using either an independent sample t-test (for gender differences) or one-way ANOVA (for differences in SES and ethnic status). For multiple comparisons the Scheffe *post-hoc* test was applied. Finally, a linear regression analysis with gender, SES, and ethnic background as predictors, and wellbeing and depression as criterion variables, was performed.

## 3. Results

Secondary school students in Serbia reported being relatively satisfied with their lives ( $M_{tot} = 7.76$ ,  $SD = 3.17$ ). The highest scores were determined on satisfaction with health ( $M = 8.16$ ,  $SD = 2.49$ ) and future ( $M = 7.90$ ,  $SD = 2.55$ ), while the lowest scores appeared on satisfaction with financial status ( $M = 7.44$ ,  $SD = 2.76$ ) and achievements ( $M = 7.52$ ,  $SD = 2.62$ ). Participants assessed their level of depressive mood as fair ( $M = 2.36$ ,  $SD = 1.39$ ).

Comparison of female and male students showed that females have significantly lower scores for overall life satisfaction ( $t(1573) = 3.355$ ,  $p = .001$ ), however the effect size proved to be small (Cohen's  $d = .17$ ). Similar results were determined for satisfaction with relationships ( $t(1571) = 2.064$ ,  $p = .039$ ,  $d = .12$ ) and safety ( $t(1574) = 3.511$ ,  $p = .000$ ,  $d = .18$ ), while for other aspects of wellbeing there were no significant differences. Female students also scored higher on depression, but again the effect size was small ( $t(1577) = -3.645$ ,  $p = .000$ ,  $d = .18$ ).

When students of different ethnic backgrounds were compared, it was determined that differences between groups were recorded only on satisfaction with financial status ( $F(3,899) = 4.321$ ,  $p = .005$ ). More specifically, Roma students reported statistically significantly lower scores on satisfaction with financial status than students of Serbian ethnic background ( $p = .007$ , 95% C.I. = [.22, 2.0]).

Finally, one-way ANOVA revealed that there were statistically significant differences in mean scores on depression and all aspects of wellbeing between students of different SES (see Table 1). Our results suggest that with the rise of financial status students tend to be more satisfied with different aspects of life and less depressed.

Table 1. ANOVA for SES-based differences in wellbeing and depression.

| Variables                                 | <i>df</i> | <i>F</i> | $\eta^2$ | <i>p</i> |
|---|-----------|----------|----------|----------|
| Overall life satisfaction                 | 4         | 12.858   | .028     | .000     |
| Satisfaction with standard of living      | 4         | 53.732   | .107     | .000     |
| Satisfaction with personal health         | 4         | 26.502   | .056     | .000     |
| Satisfaction with achievements            | 4         | 19.133   | .041     | .000     |
| Satisfaction with personal relationships  | 4         | 13.930   | .030     | .000     |
| Satisfaction with personal safety         | 4         | 19.631   | .042     | .000     |
| Satisfaction with being part of community | 4         | 20.019   | .043     | .000     |
| Satisfaction with future prospects        | 4         | 14.987   | .033     | .000     |
| Depression                                | 4         | 9.557    | .021     | .000     |

A regression analysis revealed that gender, SES, and ethnic background can predict depression ( $R^2 = .018$ ,  $F(3, 767) = 4.716$ ,  $p = .003$ ), but that only student's financial status was a significant predictor ( $B = -.171$ ,  $\beta = -.120$ ,  $p = .001$ ). The same was determined for the overall wellbeing ( $R^2 = .017$ ,  $F(3, 765) = 4.293$ ,  $p = .005$ ;  $B_{SES} = .490$ ,  $\beta_{SES} = .116$ ,  $p = .001$ ), as well as single aspects of wellbeing.

## 4. Discussion

In this study we explored the wellbeing of secondary school students from Serbia of different gender, ethnic backgrounds and SES. Results showed that students from Serbia demonstrate somewhat lower levels of satisfaction with life in comparison to their peers from other countries, where the same scale was applied (see, for example, Tomin & Cummins, 2010), which might be explained by

unfavourable sociopolitical and economic situation in Serbia. Females reported lower levels of life satisfaction and higher levels of depression, but the effect sizes were small, suggesting that statistically significant differences appeared due to the sample size and that real differences are trivial. Similarly, there were no significant and meaningful effects of ethnic background; only differences between Roma students and students of Serbian ethnicity with regard to satisfaction with standard of living deemed significant and relevant. Our results, however, suggest that low SES stands out as a significant factor that shapes the wellbeing of high-school students, which is in line with previous studies (e.g., Erdem & Kaya, 2021; Kivimäki et al., 2020). While gender and ethnic background cannot predict satisfaction with various aspects of life and depression, SES is a significant predictor.

Although the finding that minority students assess their wellbeing in a similar way to students from the culturally dominant group contradicts findings from other contexts (e.g., Vieno et al., 2009; Ullman & Tatar, 2001), it is, on the other hand, in line with other findings (e.g., Runarsdottir & Vilhjalmsón, 2019), suggesting that the relationship between ethnic background and wellbeing is more complex, depending on many family, neighbourhood, and wider social factors. We assume that this finding in our case reflects well the status of investigated minorities (at least, Bosniak and Hungarian) in their local communities. Study was conducted in schools located in multiethnic communities where minority groups (Bosniak and Hungarian) form half of or even majority of inhabitants. Therefore, in future studies more attention should be paid not solely on the minority/majority status at the country level, but on the ethnic structure and social climate in the local contexts (local communities and schools) where students live.

Lack of relevant difference between male and female students can be interpreted by sociopolitical context and specific life stage of our participants. Sociologists have already recognized that professional and personal lives of women in Serbia have been under the influence of socialist values and that they earned economic autonomy and gender awareness, much before women in other countries (Galić 2011). On the other hand, patriarchy, familiarity, and traditions put a great pressure on females in the private sphere (Hugson, 2018). Therefore, we believe that females face more challenges, and therefore risks for their wellbeing, in later stages of their life, when they need to navigate “traditional” and “modern” society values (Blagojević Hjuston, 2012) and meet expectations related to household and family obligations.

## 5. Conclusions and implications

Despite certain limitations of the study such as somewhat simplified measures of SES and depression and small number of Roma students in the sample, we believe it can contribute to international discussion about the factors that impact youth wellbeing. It demonstrates a significant effect of family SES on adolescents’ wellbeing. It asserts that we cannot discuss the effects of gender and ethnic background without taking into account local context where adolescents live (neighbourhood and school) and wider social, political, economic and historical context. We should also beware that age, that is, specific life stage, plays a role in interpreting results related to complex phenomena such as wellbeing.

Besides systemic measures aimed at reducing poverty and disparities, our findings call for reducing socioeconomic disparities in education policies and practices to ensure equal access and opportunities to learn and thrive for all students. Implementing targeted (educational and psychological) support mechanisms, such as peer support, networking and mentoring programs can help bridge the gap in wellbeing levels between different SES groups. More attention to students’ wellbeing in local communities should be paid as well, which can be done through more awareness raising events, project-based activities in local communities or formally through interdisciplinary local teams that would provide medical, psychosocial and educational support to youth and families.

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## RELATIONSHIP BETWEEN PARANOIA AND HOSTILITY: THE ROLE OF META-BELIEFS

**Carolina Papa<sup>1</sup>, Micaela Di Consiglio<sup>1</sup>, Marco Bassi de Toni<sup>1</sup>, Vittoria Zaccari<sup>2,3</sup>,  
Francesco Mancini<sup>2,3</sup>, & Alessandro Couyoumdjian<sup>1</sup>**

<sup>1</sup>*Department of Psychology, Sapienza University of Rome (Italy)*

<sup>2</sup>*Department of Human Sciences, Guglielmo Marconi University (Italy)*

<sup>3</sup>*Associazione di Psicologia Cognitiva APC e Scuola di Psicoterapia Cognitiva SPC (Italy)*

### Abstract

Paranoia is a common phenomenon that covers a continuum from slight everyday suspicion to severe delusions of persecution. It is considered helpful for survival because it protects individuals from the malevolent intentions of others, but over-reliance on this mechanism impairs individual functioning. Paranoid beliefs are associated with a harmful and malevolent view of others and an external attribution style that would help reduce a sense of internal threat. The paranoid thought process is associated with several metacognitive dysfunctions, such as difficulties with decentralization, cognitive fusion, and personalization bias. Several researchers have found associations between paranoia, self-hatred, and self-persecution, which is the most damaging form of self-criticism and most linked to psychopathology. Furthermore, paranoia is associated with aggressive attitudes, leading others to react in a way that confirms the belief that they intend to harm. Given the lack of clarity in the interplay between paranoia, self-hatred, and aggression and the relevance of investigating the antecedents of interpersonal violence, the present study set out to clarify the relationship between these variables. A sample of 564 participants ( $M = 35.12$ ,  $SD = 12.8$ ), including 389 females and 175 males, were recruited from the general population. They were asked to fill out online questionnaires designed to investigate the presence of specific symptomatology, levels of self-criticism, and meta-beliefs about it. Since self-criticism is an internal hostility mechanism that reinforces negative beliefs about oneself by increasing the sense of external threat from which the individual feels he/she must defend him/herself, the first hypothesis was that self-hatred would partially mediate the relationship between paranoia and hetero-directed hostility. Furthermore, given the relevance of the role of negative self-evaluation in psychopathology and in order to assess the factors that exacerbate the perceived sense of threat leading to aggression, it was hypothesized that the relationship between paranoia and hostility would change as a function of positive meta-beliefs about self-persecution. Mediation analysis showed that self-hatred partially mediates the relationship between paranoia and hostility, supporting the hypothesis of a sense of inferiority and worthlessness regulated through external attribution. In addition, the belief that one deserves self-persecution and self-punishment was found to moderate the relationship between paranoia and hostility, confirming that for higher levels of positive meta-beliefs about self-criticism, the relationship between paranoia and hostility is stronger. Given the evidence of associations between suspicious attitudes towards others, characterized by anger and impulsivity, and subsequent violent behavior, it is of paramount importance to study the antecedents of such risky behavior, which is extremely harmful to society, to develop more effective prevention interventions.

**Keywords:** *Paranoia, hostility, hated-self, meta-beliefs, interpersonal violence.*

### 1. Introduction

Paranoia indicates a tendency towards excessive or irrational distrust of others characterized by the belief that harm will happen and the belief that it will be caused by others (Freeman & Garety, 2000). Paranoia has evolutionary value, as supported by research postulating the existence of evolved systems focused on social threat detection (Green & Philips, 2004), as it protects the individual from threats from potentially malevolent others (Matos et al., 2013; Gilbert et al., 2005). Paranoid experiences are every day for many people (Freeman et al., 2005) and stem from real past situations, constituting rational responses to threatening life environments (Tone & Devis, 2012).



Several theoretical models have been proposed to explain the development and maintenance of paranoia. One of the best-known is that of Bentall and colleagues (2001), who postulated that in paranoia, there is an increased sensitivity to threats to the self that the individual tries to regulate through an externally focused explanatory style. In contrast, Freeman and colleagues (2002) developed a cognitive model of paranoia that emphasizes the central role of emotions rather than the self and is based on the central process of threat. The authors observed how anxiety and hostile beliefs about the expression of emotions represent predisposing factors for paranoia (Freeman et al., 2005). In this regard, positive beliefs about paranoia, e.g. “not trusting other serves to protect me”, are also relevant, increasing the likelihood that the individual will use this coping strategy to deal with perceived threats (Morrison, 2001). Research in recent years has investigated the relationship between self-criticism and paranoia by focusing, on the one hand, on the function that paranoia takes on concerning negative beliefs about oneself and, on the other hand, on the cognitive distortions that foster paranoid beliefs. Self-criticism can act as a process that maintains and reinforces negative self-perceptions, fuelling the idea that others can attack and punish (Shahar et al., 2015). At the same time, self-criticism links to dysfunctional thought processes, such as rumination (Dunn & Luchner, 2022), and cognitive distortions, such as mind-reading and catastrophizing, which can lead to an over-focus on oneself and potential threats (Ghasempeyvandi & Torkan, 2023), fuelling paranoia. Paranoid beliefs have been associated with a highly self-critical style and difficulty in being kind and reassuring to oneself (Mills et al., 2007), but especially with hatred and self-persecution (Boyd & Gumley, 2007; Hutton et al., 2013). Hate-filled self-aggression with a self-persecutory function has been linked to an increase in subclinical paranoia (Mills et al., 2007). Concerning this, some researchers have suggested that self-attack triggers a deep sense of threat that activates the threat-focused 'paranoid mind' and misattributes it to the actions of others (Gumley & Schwannauer, 2006), leading to distrust and interpersonal distance (MacBeth et al., 2008; Pickering et al., 2008). Paranoid individuals generate causal attributions of guilt towards others, interpret ambiguous stimuli as threatening (Pinkham et al., 2011), and tend to jump to conclusions (So et al., 2012), so it is reasonable to hypothesize that the belief that others intend harm may predispose to aggressive behavior to cope with the perceived threat (Bjørkly, 2002).

In light of these data and the importance of understanding the factors predisposing to interpersonal aggression, the study aims to clarify the role of self-criticism, particularly self-hatred, and positive meta-beliefs about it in the relationship between paranoia and hetero-directed hostility. The hypothesis was that self-hatred would mediate the relationship between paranoia and hostility and that this relationship would change as a function of positive meta-beliefs about self-criticism.

## 2. Method

### 2.1. Participants

The study involved 564 participants recruited from the general population, including 175 males and 389 females, with an average age of 35.12 years. Participants met the following inclusion criteria: age 18 years or older, good knowledge of the Italian language, education level of secondary school or higher, and easy access to the Internet. All subjects with suicidal ideation or who had been diagnosed with clinically severe disorders (e.g., schizophrenic spectrum disorders and other psychotic disorders, bipolar and related disorders, dissociative disorders) were excluded from the sample. Recruitment took place by word of mouth and sharing information on major social networks (e.g., Facebook and Instagram). Participants completed an online survey aimed at collecting socio-demographic informations and standardized questionnaires designed to investigate levels of self-criticism, paranoid ideation, and hostility. In addition, they completed an ad hoc questionnaire to assess meta-beliefs about self-criticism.

### 2.2. Materials

The FSCRS (The Forms of Self-Criticizing/Attacking and Self-Reassuring Scale; Gilbert et al., 2004; Italian adaptation by Petrocchi & Couyoumdjian, 2016) was used to measure self-criticism. It is a 22-item questionnaire composed of three subscales: reassured-self (FSCRS-RS), inadequate-self (FSCRS-IS), and hated-self (FSCRS-HS), which assesses a more extreme form of self-criticism characterized by feelings of self-repugnance and the desire to hurt oneself in response to failures and setbacks. For the hated-self subscale used in this study, the Cronbach's alpha value was 0.79.

Participants answered an ad hoc questionnaire designed to investigate meta-beliefs about self-criticism. It consisted of 6 open-ended questions in which subjects were asked how true, logical, useful, beneficial, deserved, and right their self-criticism was. Participants responded on a 5-point Likert scale: for example, a score of 1 corresponded to 'not true' and a score of 5 to 'true'. The Cronbach's alpha value for overall scale reliability was 0.83.

SCL-90-R (Symptom Checklist-90-Revised, Derogatis, 1975; Italian validation by Sarno et al., 2011) was used to assess symptomatology. It is a self-report questionnaire that assesses a broad spectrum of psychopathological symptoms, including hostility and paranoid ideation. The paranoid ideation subscale assesses persecutory nature, suspiciousness, and distrust of others with a tendency to interpret their actions as malicious. The hostility subscale reflects thoughts, emotional states, and behavioral patterns characteristic of anger, and items include the experience of intense aggressive impulses, displays of physical and verbal aggression directed at objects or persons, critical attitude towards others, irritability, and resentment. In the present study, Cronbach's alpha of the 'Paranoia' dimension was .81, and of the 'Hostility' dimension was .83.

### 3. Results

Statistical analyses were conducted using the Jamovi software version 2.3.28. A mediation model was estimated by including hostility as a dependent variable, paranoid ideation as an independent variable, and hated-self as a mediator.

Table 1. Mediation analysis: indirect and total effects.

| Type      | Effect                                    | Estimate | SE      | $\beta$ | z     | p      |
|-----------|---|----------|---------|---------|-------|--------|
| Indirect  | PAR $\rightarrow$ HS<br>$\rightarrow$ HOS | 0.0873   | 0.01399 | 0.101   | 6.24  | < .001 |
| Component | PAR $\rightarrow$ HS                      | 0.0243   | 0.00244 | 0.386   | 9.93  | < .001 |
|           | HS $\rightarrow$ HOS                      | 3.6009   | 0.44837 | 0.263   | 8.03  | < .001 |
| Direct    | PAR $\rightarrow$ HOS                     | 0.4760   | 0.02819 | 0.552   | 16.88 | < .001 |
| Total     | PAR $\rightarrow$ HOS                     | 0.5633   | 0.02749 | 0.654   | 20.49 | < .001 |

Table 1 shows that paranoia significantly predicts hated-self ( $\beta=.39$ ,  $p<.001$ ), and hostility ( $\beta=.55$ ,  $p<.001$ ). Paranoia in conjunction with hated-self significantly predicts hostility ( $\beta=.10$ ,  $p<.001$ ). According to the results, hated-self has a partial mediation role in the relationship between paranoia and hostility. Subsequently, Pearson's correlation analysis was used to understand the relationship between hated-self and meta-beliefs about self-criticism. The results showed that hated-self correlated significantly negatively with perceived usefulness ( $r=-.185$ ,  $p<.01$ ) and perceived advantageousness of criticism ( $r=-.240$ ,  $p<.01$ ). In contrast, the hated-self dimension shows a significantly positive association with perceived deserving of self-criticism ( $r=.98$ ,  $p<.05$ ).

To investigate the second hypothesis, a moderation model was then constructed by including hostility as the dependent variable, paranoia as the independent variable, and the belief in deserving criticism as the moderating variable.

Table 2. Moderation and Simple Slope estimates.

|             | Estimate | SE     | z      | p      |
|-------------|----------|--------|--------|--------|
| PAR         | 0.5643   | 0.0272 | 20.722 | < .001 |
| Des.        | 0.2685   | 0.2853 | 0.941  | < .001 |
| PAR*Des.    | 0.0679   | 0.0230 | 2.946  | < .001 |
| Average     | 0.564    | 0.0274 | 20.6   | < .001 |
| Low (-1SD)  | 0.487    | 0.0377 | 12.9   | < .001 |
| High (+1SD) | 0.642    | 0.0383 | 16.7   | < .001 |

Table 2 shows the effect of the predictor (paranoia) on the dependent variable (hostility) at different levels of the moderator (belief of deserving self-attack). In the relationship between paranoia and hostility, the results show an interaction effect for both high and low levels of the meta-belief of deserving self-criticism ( $p<.001$ ).

#### 4. Discussion

The results of the study show how hated-self plays a mediating role in the relationship between paranoia and hetero-directed hostility. This result supports theories that hold that beliefs in paranoid ideation have a psychic function for the individual rather than being just a consequence of perceptual or reasoning deficits.

Several studies have attempted to assess implicit self-representations in paranoid patients, with results suggesting that these subjects have more negative beliefs about themselves than ordinary people (Bentall et al., 2001). Indeed, while Bentall and colleagues (2001) suggested that the paranoid person exhibits exaggerated prejudice and a tendency to attribute adverse events to others who are considered powerful, Trower and Chadwick (1995) argued that there is a subgroup of paranoids who exhibit shame and a feeling of being bad. This distinction is significant as the study's results support the idea of a sense of unworthiness in the paranoid condition that could lead to the interpretation of others as threatening. Of great relevance is that paranoia can be a risk factor for interpersonal violence. The individual can cope with feelings of being criticized and devalued by others through externalization and counter-attack, which are associated with feelings of defensive anger and revenge fantasies through an external attribution style aimed at preserving a sense of safety of self and the world (Castilho et al., 2015). Results from the MacArthur Study of Violence Risk reveal that a generally suspicious attitude significantly predicts subsequent violent behavior, including physical and verbal aggression (Appelbaum et al., 2000). Understanding this relationship opens up space for various implications for clinical practice and the prevention of aggressive behavior.

Positive metacognitive beliefs contribute to the maintenance of dysfunctional attitudes (Wells, 2011), and the result that appears to be most interesting concerns the role of metacognitive beliefs related to hated-self. Indeed, it was found that hated-self correlated significantly with the idea of deserving self-attack and self-punishment, consistent with Gilbert's model (2004). Considering that the belief that one deserves criticism can moderate the relationship between paranoia and hostility, it may be relevant to act on this meta-belief and how the individuals have developed and consolidated it in their lives to reduce feelings of anger towards others and the resulting behaviors.

The present study has several limitations: Firstly, it is a cross-sectional study, so it is impossible to make inferences about the direction of the associations emerging from the results. Secondly, the variables were measured in the general population, so the data cannot be generalized to the clinical population of paranoid patients. Furthermore, the responses to the self-report questionnaires may have been influenced by contingent factors. Not least, other constructs that could explain the relationship between the examined variables, such as cognitive bias and other variables reflecting dysfunctional beliefs about self, in addition to self-criticism, were not measured. Nevertheless, the strength of the research lies in opening the way for the study of further variables that may intervene in the relationship between paranoia and aggression. Future research should elucidate the factors that intervene and reinforce this relationship, making it possible to develop more effective psychotherapeutic treatments and prevention interventions.

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# THE POSITIVE IMPACT OF MINDFULNESS RETREATS ON PHYSICAL AND MENTAL HEALTH WELL-BEING OF NON-CLINICAL INDIVIDUALS

Nicole Jafari<sup>1,2</sup>, & Laleh Mehrad<sup>3,4</sup>

<sup>1</sup>The Chicago School of Professional Psychology (USA)

<sup>2</sup>Founder & Principal @Global Growth Institute, Inc. (USA)

<sup>3</sup>The Chicago School of Professional Psychology (USA)

<sup>4</sup>Founder & Principal @Joy Self Awareness Center (USA)

## Abstract

In recent decades, the art of mindfulness has gained popularity in Western societies, merging this Buddhist practice with popular modern culture. The popularity of this consciousness explorative technique has also crept into the scientific field of psychology, where more than 200 research studies have supported its efficacy with plenty of empirical data. The addition of scientific evidence has given mindfulness comforting confidence to the practitioners engaged in this healing process. It has also gained popularity with non-clinical individuals who practice it by helping them bring clarity, relief, awareness, and peace to millions. However, there is still a dire need to fully understand mindfulness therapy's process and effectiveness to maximize its potency. As supportive as the scientific data has been in validating mindfulness in stress reduction and anxiety management, there has been very little research on its potential downsides. Although it is vital to understand the history and lineage of this process, it is necessary to understand the proper use of mindfulness techniques, how it should be practiced, and in what mode of delivery it will maximize the user's benefit. Using existing evidence-based and secondary empirical data, this paper will explore the latest scientific discoveries on teaching individuals in a retreat setting to become conscious-minded using nature-based mindfulness techniques and how to employ them in everyday life while committing to a healthy lifestyle.

Furthermore, the authors will explore the pitfalls and the shortcomings of existing research on the benefits of mindfulness retreats. Finally, this paper will explore the possibility of standardized retreat protocols, appropriate techniques, and the intricate criteria for maximizing mindfulness meditation techniques in a retreat setting. Based on the findings, the authors will propose an optimized design for a mindfulness-guided retreat using nature-based and ecological criteria to help the participants gain knowledge on how to control negative self-talk, learn to manage stress and reduce anxiety, develop emotional regulation skills, and maintain neurological adjustment in high-stress life circumstances.

**Keywords:** *Mindfulness retreat, nature-based self-help, meditation.*

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## 1. Introduction

Buddhism describes mindfulness as enhanced awareness focused on the present moment without the restraints of emotional attachment, function, or object. A walk in nature where the person notices the beauty and wonder of a flower and is mesmerized by its structural beauty and wonderment of creation. It is living in the moment to the fullest rather than containment in the past or the future (Bateman, 2012). Mindfulness training, as conducted in retreats, combines the art of skill building with attention and awareness training, which contemporary psychological theories believe to be essential in positively affecting mental health and overall well-being (Hadash et al., 2023). Mindfulness practices may involve meditation), focusing and sustaining attention breathing techniques, daily mindful activities, or practices conducted in natural settings (Kabat-Zinn, 2013).

## 2. Objectives

This research study aims to demonstrate the positive impact of mindfulness retreats on adults' physical and mental health. The authors conducted a systematic review of the existing literature relevant to the focus of our study that also met the specific criteria set by the authors.

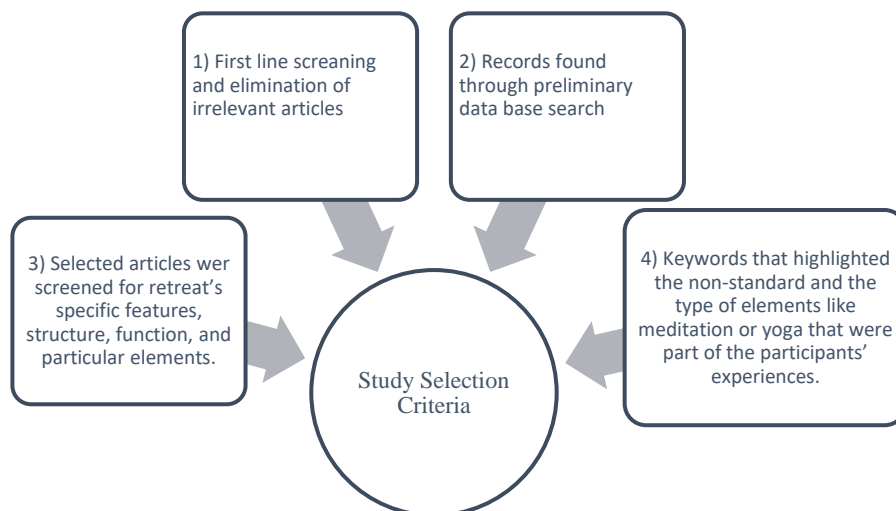
## 3. Method

The authors conducted a comprehensive systematic review methodology using standardized search operators, including the definition of mindfulness and the structure of current retreats. Separately, the research design aimed to reference retreats' structural and functional aspects, such as duration, exercises, and standard practices in current mindfulness retreats. Methods used in this study were a comprehensive literature search using PsychINFO, PubMed, Cochrane Library, and Google Scholar. After removing duplicates and applying the eligibility criteria, the following studies were included in the present review.

## 4. Design

A systematic search design was conducted using keywords such as mindfulness and retreat in the title or abstract of any peer-reviewed study published by high-impact publications. The selected keywords were grouped into two main categories. A group of keywords was set to identify articles whose goal of the study was to define mindfulness definition, purpose, and technique, including search terms related to “mindfulness, application, impact, population, result, and expectations. The next category was groups of keywords used to describe (a) The retreat’s specific features, structure, function, and particular elements, and b) Keywords that highlighted the non-standard and the type of elements like meditation or yoga that were part of the participants’ experiences (See Figure 1).

Figure 1. Study Selection Criteria.



## 5. Discussion

Mindfulness is a physiological as well as a psychological phenomenon. A life experience with a special physiological meaning is linked to synchronous activity in a paralimbic self-awareness network and dopaminergic activity (Joensson et al., 2015) involving a set of networks of medial prefrontal and parietal/posterior cingulate cortices. Magnetic imaging has shown that transcranial magnetic stimulation may transiently impair self-awareness, demonstrating the correlation between dopamine and self-awareness. Mindfulness retreats that include meditations result in an increased dopamine secretion.

Mindfulness retreats are usually advertised to healthy, non-clinical adult populations to optimize psychological health. Within the structure of these retreats, additional criteria such as stress and anxiety management, overall well-being, or depression reduction may also be included. The following sections present and discuss different types and criteria of a sample of such retreats.

### **5.1. A 3 day residential retreat**

A sample of 95 healthy individuals ages 18 to 67 participated in an intensive mindfulness practice to manage biological mediators of stress and inflammation. Due to the biological assessment criterion, all the participants were assessed for salivary cortisol levels. Psychometric measures on stress, anxiety, and awareness were carried out. Results show a significant decrease in perceived stress ( $\beta = -8.85$ ,  $p < 0.0001$ ) and anxiety scores ( $\beta = -12.39$ ,  $p < 0.0001$ ), while awareness increased ( $\beta = 15.26$ ,  $p < 0.0001$ ). The participants in this mindfulness retreat showed a significant reduction in perceived stress and anxiety levels. Additionally, they experienced an improved balance of some critical inflammatory state mediators, leading to physical and mental health and well-being (Gardi et al., 2021).

### **5.2. A 5-day residential retreat**

A pilot study where a group of Danish college students were randomly assigned to three studies with different interventions to review the potential effectiveness of a 5-day indoor residential mindfulness intervention. The primary outcomes were self-compassion and perceived stress levels. The 12-item, short-form Self-Compassion Scale (SCS-SF) measured how individuals treat themselves with kindness and concern when faced with loss, failure, rejection, etc. Results based on all three programs showed improved self-compassion and reduced stress post-treatment. Trait mindfulness was positively affected both post-treatment and at follow-up. The exact curriculum taught in a natural outdoor setting had equally positive effects, with incremental effects on connectedness to nature (Djernis et al., 2021).

### **5.3. Meta-analysis on psychological functioning**

A meta-analysis of 63 full texts on the effects of mindfulness retreats on the psychological functioning of relatively healthy adults was conducted. The first screening was based on design, sample characteristics, retreat intensity, duration, and psychological outcomes studied, and due to many of the studies needing more methodological rigor, only 19 made the final cut for a meta-analysis. An analysis from pre-retreat to follow-up found an effect size of 0.58 (95% CI, 0.39, 0.77) for mindfulness outcomes. The final results showed that mindfulness could be correlated to improved mental and physical health in healthy adults. The reviewed research supports commonly held beliefs that mindfulness retreats may be an effective option for optimizing psychological health and reducing the risk of mental health problems among adults in the general population (McClintock et al., 2019).

### **5.4. Mindfulness-based Stress Reduction (MBSR) interventions**

Nyklíček et al. concluded that mindfulness may mediate the positive effects of Mindfulness-based stress reduction (MBSR) intervention. The aim was to compare the effects of MBSR to a waiting list control condition while examining the potentially mediating effects of mindfulness (2013). Davidson et al. suggested that MBSR may produce demonstrable brain and immune function effects. The aim was to measure the effects of MBSR on brain and immune function. We do not know whether the EEG-observed significant increases in left-sided anterior activation - a pattern previously associated with positive affect - are of practical or clinical relevance. Not all brain scientists agree that increased left-sided anterior activation is associated with positive affect (2005).

In a meta-analysis of MBSR programs, Williams et al. compared mindfulness-based cognitive therapy (MBCT) with both cognitive psychological education (CPE) and treatment as usual (TAU) in preventing relapse to major depressive disorder (MDD) in people currently in remission following at least three previous episodes. *The articles were selected based on a randomized controlled trial in which 274 individuals participated.* The 21 related research articles showed that self-selected community residents can improve their mental and physical health by participating in an MBSR program. One study objective was to determine whether participants in an MBSR intervention experienced decreases in the effect of daily hassles, psychological distress, and medical symptoms. MBCT provided significant protection against relapse for participants with increased vulnerability due to a history of childhood trauma but showed no significant advantage in comparison to active control treatment and usual care over the whole group of patients with recurrent depression. The results were based only on completers, defined as subjects who completed the control or intervention program and all the questionnaires (Williams et al., 2014).

### **5.5. One month long meditation retreat**

The retreat had pre-enrolled 32 Participants to complete the 100-item States of Consciousness Questionnaire (SOCQ) and the Mysticism Scale before and after three weeks of intensive retreat or daily life. The items on the SOCQ were assessed individually to determine which contributed most to differences between groups at the end of the retreat. The study was conducted with a control group to assess the changes in self-reported mystical dimensions of experience, which were also directly compared between retreat and control participants.

Results of the study showed that the retreat participants reported a much greater extent of profound insights, powerful emotional experiences, and non-ordinary sensory or perceptual events compared to experienced meditators not on retreat. Retreatants also reported greater levels of specific dimensions of mystical experience, including internal unity, transcendence, sacredness, and noetic quality, and they deeply felt positive affect relative to control participants (Zanesco et al., 2023).

## 6. Implications

A standardized template for assessing the effectiveness of mindfulness retreats needs to be devised to ensure the validity and reliability of the conducted studies. Elements that are instrumental in accurate scientific assessments are as follows:

(a) the geographical location where the retreat took place; b) the research methodology and study design on how the research was conducted (e.g., randomized controlled trial, non-randomized controlled trial, or pre-post design); (c) the presence or lack of presence of a control group (e.g., inactive/waitlist or active); (d) Sample population under the study; (e) Demographic characteristics such as participants' age, gender, and race/ethnicity; (f) Nature of retreat (e.g., meditation and the type of meditation, yoga, indoor, outdoor, nature or structured); (g) duration of the retreat and the number of hours per day; (h) the number of participants who completed the program; (i) compensatory incentives to participate and/or to complete the program if applicable; (j) post assessment if any and follow up measurements if applicable; and (k) type and nature of the expected outcome (psychological, physical, overall well-being).

## 7. Conclusion

Mindfulness, defined as moment-to-moment non-judgmental awareness, is a skill that can be learned through practice and is believed to promote well-being. Mindfulness has received interest from clinicians and researchers because it seems to improve acceptance of symptoms that are difficult or impossible to change, install a cognitive metareflective capacity that enhances the degree of freedom of patients, and help patients change their focus by emphasizing the experience of the present moment. Mindfulness-Based Stress Reduction (MBSR), as a structured group program that employs mindfulness meditation to alleviate suffering associated with physical, psychosomatic, and psychiatric disorders, has also been known to produce positive results. However, as the interest in mindfulness retreats grows, the need for a more scientific methodology leading to solid empirical data also increases. As the literature on mindfulness constantly expands, requiring regular, updated reviews, future studies with more subjects and follow-up periods may examine mindfulness as a non-pharmacological alternative to promote stress reduction and overall health and well-being.

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# EVALUATION OF COGNITIVE AND BEHAVIORAL EFFECTS OF PERSONALITY-BASED SUBSTANCE USE PREVENTION IN CANADA

**Marvin Krank**

*The University of British Columbia (Canada)*

## Abstract

This study evaluated the effectiveness of the Preventure program with students in a medium sized school district in Western Canada. Preventure is a selective prevention program that screens students on four distinct personality types: sensation-seeking (SS), anxiety sensitivity (AS), negative thinking (NT), and impulsivity (IMP). Each of these traits is linked to both the risk of early substance use and subsequent onset of mental health concerns. The tested program tailors a brief intervention to reduce cognitive and behavioral risks in higher risk students based on their personality.

**Method:** At the start of the study, 576 grade eight students were screened using the Substance Use Risk Profile scale (SURPS) to assess the four personality traits. Of these students, 268 students (46.2%) exceed risk criteria on one or more of the personality types. For the evaluation, two of the four schools were randomly assigned to receive training immediately (Trained Schools) with the other two schools receiving delayed implementation the following year (Untrained Schools). In the two training schools, 94 students were invited to participate in Preventure training groups with 44 students completing the training. During the following year, all students took part in three health surveys that included questions about substance use and measures of their substance use cognitions (i.e., expectancies and memory associations).

**Results:** The substance use measures were analyzed over three time points using zero-inflated negative binomial tests. Students who received Preventure training or who attended schools that had the training were significantly less likely to begin using tobacco, vapes, cannabis, and illicit drugs and used cannabis less frequently than those in Untrained Schools. Cannabis cognitive associations were also lower in Trained Schools and fully mediated differences in Trained versus Untrained schools. Past year alcohol use and initiation of alcohol use were unaffected.

**Conclusions:** These findings support other international findings for the efficacy of Preventure in reducing substance use in teens. Cognitive mediation analysis suggests that reductions in risky associations partially mediate positive treatment effects on Cannabis use. This finding is the first to reveal one possible cognitive mechanism for the effects of Preventure.

**Keywords:** *Substance abuse prevention, adolescents, personality, targeted prevention.*

## 1. Introduction

Substance use in adolescents remains a significant concern with long-term consequences. Many prevention approaches have been tried yet few studies have strong effects or reach more than a portion of students. Recent successful approaches have focused on personality as a risk factor and personality-specific social and cognitive risks as targets for intervention. Personality traits that predict substance use include higher levels of impulsivity, sensation seeking, extraversion, and negative affectivity (e.g. sensitivity to anxiety or depression) as well as lower levels of conscientiousness (Conrod, 2016). Of particular relevance for the present study, the Substance Use Risk Profile Scale (SURPS) was developed using predictive validity against substance use criteria. The SURPS identifies four personality types, impulsivity, sensation seeking, anxiety sensitivity, and negative thinking. All of the SURPS measures predict both concurrent and future substance use in adolescents including problem use (Krank et al., 2011; Woicik et al., 2009). Theoretically, personality traits work as distal risk factors that influence more proximal factors such as social influences (Pilin, et al., 2021) and substance use cognitions (e.g. expectancies and memory associations (Pilin et al., 2022; Krank, & Robinson, 2017)). Thus, personality traits should inform intervention approaches to prevention by identifying trait-specific social influences, motives and cognitions. Although personality is hard to change, cognitive-behavioral treatments (CBT) and motivational enhancement (ME) should be able to target trait-specific social influences and cognitions. The

present study was designed to replicate the effectiveness of a personality targeted prevention program, Preventure, and identify whether known mediators of substance use in adolescents (expectancies and memory associations) are changed by this program.

**Preventure Effectiveness:** Evaluation studies have repeatedly confirmed Preventure's effectiveness in trials including RCTs in a number of countries. Findings indicated that this program has been successful in reducing the rates of alcohol and illicit drug use and substance-related harms by ~50% in high-risk adolescents with the effects last for up to 3 years. These interventions were also associated with a 25% reduction in likelihood of transitioning to mental health problems, such as anxiety, depression, suicidal ideation, and conduct problems. The program is particularly beneficial for youth with more significant risk profiles, such as youth reporting clinically significant levels of externalizing problems, and victimized adolescents. Notably, the program was successful when delivered by school personnel (i.e. teachers, guidance counselors) trained to deliver Preventure. The present study was designed to test the effectiveness of this school-based delivery in a delayed implementation design. In addition, the evaluation was extended to previously unmeasured outcomes, tobacco and vaping. Finally, we assessed changes in substance cognitions as potential mediators of treatment effects.

**Design:** The initial Preventure trial began in two of four participating secondary schools in the school district. The remaining schools were phased in over the following year. This process allowed us to compare students who received Preventure training with similar students who did not. In addition, we also compared students in schools that received Preventure with students in schools where no students had received training. This latter comparison revealed whether there was a beneficial "herd effect" where students who were in training schools, but did not receive training still showed reductions in their substance use. Such an effect is expected to occur from past studies of Preventure effects and has been interpreted as the positive social influence of reducing substance use in at risk individuals who did receive training. We expect that 1) Preventure will reduce substance use in schools that initially were trained in the program, 2) substance use risk will be predicted by personality scores on the SURPS, 3) a latent cognitive construct based on outcome expectancies and memory associations will also predict risk, and 4) program-based changes in substance use will be mediated by the latent cognitive construct.

## 2. Method

**Participants and Procedures:** All students in four schools from a medium sized school district in the Southern Interior of BC Canada participated. Students completed survey responses for screening and demographics (February 2017). Three surveys of substance use were completed: Baseline, immediately after the intervention (May 2017), six months follow-up (November 2017), and one-year follow-up (May 2018). Each survey contained a range of questions about healthy and unhealthy behaviors and thoughts. For program delivery, schools were randomly assigned to *Immediate* program delivery) and *Delayed* implementation (March- May 2018). Preventure training (see <https://preventureprogram.com>) consisted of two 90-minute group sessions delivered by a trained facilitator from the school. Group facilitators employed motivational enhancement and cognitive behavior training to encourage healthy decision-making. Each manual targets common misperceptions and thought processes present in individuals with high levels of each personality trait. Although some examples were substance related, the focus of the lessons was to identify risky thoughts and actions and encourage prosocial alternatives. In February 2017, 576 grade eight students were screened using the Substance Use Risk Profile scale (SURPS). Of these students, 94 students from the two intervention schools were invited to participate in Preventure training groups. Invitations to participate were determined by relative SURPS scores. Any student who exceeded one standard deviation above the mean for any sub-scale was eligible to participate. Students were asked to join one of four groups corresponding to the highest personality score. By May, 44 students completed the training. Parental consent and student assent were obtained in accordance with the University of British Columbia Okanagan Behavioural Research Ethics Board.

**Survey measures:** *Demographics:* Age, Sex, income level, parental education were obtained in February, 2017.

*Personality screening:* Screening consisted of the 23 questions from the Substance Use Risk Profile Scale (SURPS). The SURPS measures levels of four personality traits: sensation-seeking, impulsivity, negative thinking, and anxiety sensitivity. The scale has excellent psychometric properties with strong test-retest reliability, internal consistency, and most importantly, predictive validity.

*Substance use:* We assessed alcohol, cannabis, tobacco, vaping, and illicit drug use with questions that asked, "When was the last time you \_\_\_\_\_?" The options were "Never," "More than a year ago," "In the past year," "In the past month," and "In the past week." The question we used is well validated and is a reliable measure of early use. In addition, we assessed days of alcohol and cannabis use in the past 30 as well as problem alcohol (AUDIT) and cannabis (CUDIT).

*Cognitions:* Memory associations and outcome expectancies were assessed at the six-month follow-up. For memory associations, participants responded with the first word that came to mind in response to a target word that has dual meanings. Words were included based on previous research with alcohol and cannabis (cf Stacy, 1995). Participants were presented with 44 homographs that included alcohol or cannabis-related words (e.g., *draft, mug, weed, pot*). Students subsequently classified their own responses into categories that included alcohol and cannabis use. The memory association scores for alcohol and cannabis were the sum of responses in each category respectively (Frigon & Krank, 2009; Krank et al., 2010). For the outcome expectancy measure, participants identify four outcomes they would expect to happen when using alcohol or cannabis and then rate how much they would enjoy this outcome on a five-point Likert scale (-2 to 2) (Fulton et al., 2012).

### 3. Results

Grade eight students were screened in February 2017 and assessments of substance use occurred in May 2017, November 2017, and May 2018. Data was collected from baseline, six-month follow-up, and twelve-month follow-up assessments. Because the program was phased in over time, the effectiveness of the program can be analyzed by comparing students who received the program with similar students and schools that did not receive the program. Although this design has too few schools to meet the rigorous demands of a randomized control trial, the data provide a good indication of whether the program delivered in SD22 had the expected positive effect of reducing problematic substance use.

**Growth of current drug and alcohol use:** The developmental period from the spring of grade eight to the spring of grade nine reveals a noteworthy increase in use of a variety of substances. Much of this increase occurs over the summer months. Consistent with previous studies, alcohol use increases the most with much lower levels of cannabis and tobacco use. Non-prescription illicit drug use over the past year is low (<4%). A somewhat surprising and concerning finding is the high level of reported use of vapes with one in four students reporting past year vaping at the end of grade nine.

**Alcohol use:** The results show steady growth in alcohol use, but, in contrast to previous studies, no differential effect of the Preventure training. None of the ordinal regressions were significant at any phase of the study. Trained and untrained schools did not differ at baseline, six-month follow-up, or one-year follow-up. The number of days used as a measure is confounded by the large number of non-drinking students in this age group. To account for non-users, the number of days used was analyzed by zero-inflated Poisson (ZIP) regressions. ZIP regressions estimate both the likelihood of being a user in the past 30 days (inflation coefficient) and the rate of use among users (count coefficient). Differences in each of these statistics are tested separately. ZIP regressions were conducted separately for each time of assessment. There were no significant differences in use or rate of use between trained and untrained schools at baseline or at either of the two follow-up assessments. AUDIT scores contained large numbers of zeros from non-users so the data were analyzed with ZIP regressions. There were no differences at baseline, six months, or one year. Generally, there was no significant effect of Preventure training on early alcohol use detected in this cohort.

**Tobacco use:** Tobacco use was relatively low throughout the sample with only 9.4% having used tobacco by the end of grade 9. In contrast to most drug use measures, nicotine use was not affected by personality risk, but it was strongly influenced by training,  $\beta = 1.21$  ( $SE = 0.45$ ), Wald chi square (1) = 7.36,  $p < .007$ , OR = 3.368. Students in untrained schools were more than 3 times more likely to smoke (14.3%) than students in trained schools (4.5%). These rates were unaffected by personality risk.

**Cannabis use:** The results clearly show reduced recency of cannabis use in Preventure schools. Ordinal logistic regressions at each time confirm this observation. Trained and untrained schools did not differ at baseline,  $\beta = 0.41$ , Wald Chi-square = .679, ns. However, Preventure schools had lower levels of past year and past month use at both six-month follow-up,  $\beta = 1.01$ , Wald Chi-square (1) = 6.744,  $p < .009$ , and twelve-month follow-up,  $\beta = 0.87$ , Wald Chi-square (1) = 6.356,  $p < .012$ . Log likelihood estimates indicate that students in non-trained schools were 2.7 and 2.4 times more likely to have more recent use at six- and twelve-month follow-ups respectively.

Additional evidence for the effectiveness of Preventure on cannabis use is found in the number of days used in the past 30. To account for non-users, the number of days measure was analyzed by zero-inflated Poisson (ZIP) regressions. ZIP regressions estimate both the likelihood of being a user in the past 30 days (inflation coefficient) and the rate of use among users (count coefficient). Differences in each of these statistics are tested separately. ZIP regressions were conducted separately for each time of assessment. There were no differences between trained and untrained schools at baseline in being a user, inflation coefficient = .012,  $z = .072$ , ns, or rate of use, count coefficient = -.051,  $z = -.277$ , ns. Training condition influenced the ZIP regressions for the two follow-up assessments. At six months, the rate was unaffected, count coefficient = .012,  $z = .072$ , ns, but the likelihood of being a user was reduced, inflation

coefficient = 1.151,  $z = 2.176$ ,  $p < .03$ . At the twelve-month follow-up, both the rate of use in users, count coefficient =  $-0.559$ ,  $z = -2.221$ ,  $p < .026$  and the likelihood of using, inflation coefficient = 1.151,  $z = 2.176$ ,  $p < .03$ , was higher in students from untrained schools.

Problems associated with cannabis use were assessed with the CUDIT. The CUDIT scores contained large numbers of zeros from non-users so the data were analyzed with ZIP regressions. There were no differences at Baseline, count coefficient =  $.253$ ,  $z = 1.059$ , ns and inflation coefficient =  $.315$ ,  $z = .614$ , ns. CUDIT scores did suggest that students from untrained schools were more likely to experience problems at six months, inflation coefficient =  $.747$ ,  $z = 2.200$ ,  $p < .028$ , and one year, inflation coefficient =  $.614$ ,  $z = 1.937$ ,  $p < .053$ . At one year, the number of problems is higher in students from untrained schools, inflation coefficient =  $-0.349$ ,  $z = -2.605$ ,  $p < .009$ .

**Illicit drug use:** We measured the number of illicit drugs they had used: psilocybin, LSD, inhalants, MDMA, GHB, Rohypnol, methamphetamine, cocaine, and opiates. The variables analyzed were whether the students had ever used any of the illicit drugs and the number of illicit drugs they used. Consistent with previous findings in this age group, the number of students who had used illicit drugs was small. Zip regressions confirmed that students in schools without training were more likely (8.1% vs 3.6%) to have used illicit drugs, zero-inflation coefficient = 1.12,  $z = 2.31$ ,  $p < .021$  at the six-month follow-up. At twelve months, schools without training were not significantly more likely to have used illicit drugs (7.3% vs 3.4%), zero-inflation coefficient =  $.172$ ,  $z = .229$ , ns, but users used more illicit drugs than those in schools with training, count coefficient =  $-1.44$ ,  $z = 2.07$ ,  $p < .039$ .

**Herd effects:** One of the more interesting effects of Preventure training reported in the literature is the “herd” effect. The positive benefits of Preventure training extend to students who were not in the trained groups. We analyzed the herd effect by comparing the impact of training on those students at higher personality risk with students at low levels of personality risk. There were two main effects: 1) the anticipated large effect of personality risk, (Wald chi square = 10.0,  $df=1$   $p > .002$ ) and 2) confirmation of the effect of training in both risk conditions (Wald chi square = 8.4,  $df=1$   $p > .004$ ). The herd effect is shown by the big impact of training on students with low personality risk. None of these students received direct training in the groups, but benefit by being in the same school with those who were trained (see Figure 1).

**Mediation Effects:** Cognitive mediation of personality and training effects: Structural equation modelling was used to test for mediation of a) personality effects (SURPS subscales) and b) training effect (Trained versus Untrained) on cannabis use by a cognitive construct of cannabis use associations. Cannabis use was measured by frequency of use at six-months. Initial tests revealed significant direct effects of each personality subtype and training on cannabis use. The cognitive latent construct loading on outcome expectancy liking and memory associates provided a strong fit and a strong direct effect on cannabis use. The final model tested all direct and indirect paths through the cognitive construct to cannabis use for both personality subtypes and training. Including the cognitive mediator in the model eliminated all significant direct effects on cannabis use except for the cognitive mediator. Significant direct effects from impulsivity, sensation seeking, negative thinking, and training effects on the cognitive latent variable and significant indirect effects on cannabis use (see Figure 2).

Figure 1. This figure shows the impact of Preventure on cannabis use at the six-month follow-up in students from trained versus untrained schools as a function of personality risk.

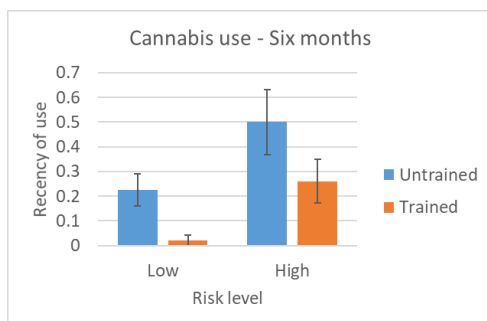
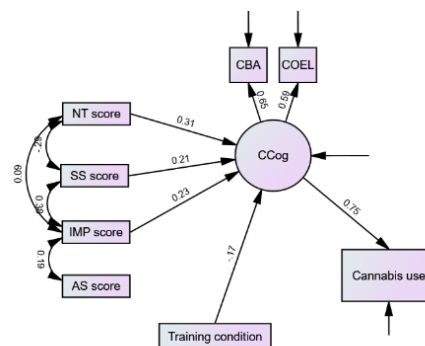


Figure 2. This figure shows the final iteration of the the full mediation model including significant paths. Final model fit: Chi square = 22.5,  $df = 14$ ; CFI = .984; NFI = .960; RMSEA = .039



#### 4. Discussion

The present study had three main findings. First, it replicated previous findings showing the effectiveness of Preventure, an established personality targeted prevention program on reducing substance use in early adolescence. Second, it replicated the cognitive mediation of the effects of personality subtypes on cannabis use. In addition, this study represents the first to provide support for a cognitive mechanism for treatment effects on cannabis use.

Trained schools had fewer cannabis users, less frequent cannabis use, and fewer cannabis related problems. Also students in trained schools used fewer illicit drugs and tobacco products including vapes. The study also replicated the herd effect reported in previous studies. Although based on only four schools and do not fully allow us to account for school level variability, these observations are consistent previous studies supporting Preventure effects. One notable difference is the lack of significance in the measures of alcohol use. One explanation is that the measures used here differed from the binge drinking measures previously used in published studies. It is also possible that as the students get older the effect on drinking problems will emerge as a sleeper effect.

The present study also replicated the value of an associative cognitive latent construct based on outcome expectancies and memory associations as a mediator of cannabis use in early adolescence. The study replicated the mediation of personality effects revealing full mediation. Most importantly, the study shows that differences in cognitive associations fully mediate the impact of Preventure training on cannabis use. This finding suggests a plausible mechanism consistent with the CBT focus of the Preventure program.

Conclusions: These findings support other international findings for the efficacy of Preventure in reducing substance use in teens. Cognitive mediation analysis suggests that reductions in risky associations partially mediate positive treatment effects on Cannabis use. This finding is the first to reveal one possible cognitive mechanism for the effects of Preventure.

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## PERSONALITY TRAITS RELEVANT TO DEPRESSION: OLD ASSOCIATIONS, NEW PERSPECTIVES

Gaye Saltukoğlu<sup>1</sup>, & Arkun Tatar<sup>2</sup>

<sup>1</sup>*Department of Psychology, FSM Vakif University (Türkiye)*

<sup>2</sup>*Department of Psychology, Manisa Celal Bayar University (Türkiye)*

### Abstract

Although depression is one of the most common mental health problems globally, there are few studies on the relationship between depressive symptoms and personality traits. It has been suggested that personality is an important risk factor for depression. However, due to the multidimensional structure of personality, there is a need for multivariate and large-scale studies involving individual participants. The aim of this study is to examine the effects of the multidimensional structure of personality on the relationship between depressive symptoms and personality traits. 528 women (mean age = 35.16, s = 11.93) who were reached by convenience sampling method and did not apply to a clinic were evaluated with the CES-Depression Scale, the Beck Depression Inventory and 220-item long form of the Five-Factor Personality Inventory. Participants were divided into three groups, those one standard deviation below and above the mean, using the CES-Depression Scale and the Beck Depression Inventory total scores. Then, the Five Factor Personality Inventory sub-dimensions and factor total scores of the three groups created using both the CES-Depression Scale and the Beck Depression Inventory total scores were compared with MANOVA. It was observed that the three groups formed using both the CES-Depression Scale and Beck Depression Inventory total scores differed in terms of all five-factor total scores. When the three groups formed by using the CES-Depression Scale total scores were compared in terms of sub-dimensions, differences were found between the groups in 15 (Liveliness, Assertiveness, Interaction, Tolerance, Calmness, Agreement/Reconciliation, Soft Heartedness/Altruism, Orderliness, Responsibility/Deliberateness, Emotional Lability, Proneness to Anxiety, Self Assureness, Analytical Thinking, Sensitivity, Openness to Newness) of 17 sub-dimensions, and no difference was observed in the Rules Boundness and Excitement Seeking sub-dimensions. When the three groups formed using the Beck Depression Inventory total scores were compared, there were differences between the groups in 15 (Liveliness, Assertiveness, Interaction, Tolerance, Calmness, Agreement/Reconciliation, Orderliness, Responsibility/Deliberateness, Excitement Seeking, Emotional Lability, Proneness to Anxiety, Self Assureness, Analytical Thinking, Sensitivity, Openness to Newness) of the 17 sub-dimensions, and no difference was observed in the Rules Boundness and Altruism sub-dimensions. Most of the personality traits examined were found to be associated with depressive symptoms. These findings are important in that they show the importance of personality in risk factors for depression.

**Keywords:** *Depression, personality, trait, multidimensional personality traits.*

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### 1. Introduction

In many studies, the relationships between depression and personality traits (especially with the five-factor personality model) have been examined (Clark et al., 1994; Dunkley et al., 1997; Flett et al., 1995; Hicks & McCord, 2012; Kendler & Myers, 2010; Santor et al., 1997; Watson et al., 1994; Zuroff et al., 2004). It is stated that personality traits have an impact on the development, course, and symptoms of depression, and on the other hand, depression causes some changes in the personality structure of individuals (Aggen et al., 2005; Bagby et al., 2008; Clark et al., 1994; Enns & Cox, 1997; Hakulinen et al., 2015). In these studies, examining the relationship between personality structure and depression, it is revealed that some personality traits create a vulnerability to depression and that people with certain characteristics are more disadvantaged in terms of depression (Bagby et al., 2008; Barnhofer & Chittka, 2010; Flett et al., 1997; Hicks & McCord, 2012). In particular, there appears to be a strong relationship between depression and neuroticism, which includes states associated with the neurotic personality structure, such as a significant sensitivity to negative stimuli, a persistent feeling of frustration, self-doubt,

nervous tension, chronic negative affect, and anxiety (Jylhä & Isometsä, 2006; McCrae & John, 1992; Takahashi et al., 2013). Accordingly, as the level of Neuroticism increases, depression also increases (Barnhofer & Chittka, 2010; Jylhä ve Isometsä, 2006; Kotov et al., 2010; Malouff et al., 2005).

A high level of extraversion, which includes characteristics such as being friendly, warm-blooded, talkative, enthusiastic, joyful, and enthusiastic, is marked by preferring to spend time with people over loneliness, and indicates social activity, usually indicates a low tendency to depression (Farmer et al., 2002; Goodwin & Gotlib, 2004; Jylhä & Isometsä, 2006). However, extroverted individuals overcome depression in a shorter time than introverted individuals (Bagby & Parker, 2001). It is stated that people who are at the low conscientiousness factor level, have poor self-control, tend to procrastinate, have low motivation for success, make negative self-evaluations due to the repeated failures they experience, and experience more intense stress in daily life events, which causes an increase in depression levels (Anderson & McLean, 1997). The results support the view that there is an inverse relationship between conscientiousness and depression levels (Anderson & Mclean, 1997; Bagby et al., 2008; Malouff et al., 2005; McCann, 2010).

In many studies, personality traits (via the five-factor model) have been associated with depression (Farmer et al., 2002; Katz & McGuffin, 1987; Kendler & Myers, 2010; Morris & Robinson, 1995; Roelofs et al., 2008; Saklofske et al., 1995). It is also stated that immaturity of personality trait dimensions is a risk factor for the onset of depression and that these characteristics can help identify individuals at risk, early diagnosis, and possible treatment (Matsudaira & Kitamura, 2006; Puyané et al., 2022). It is observed that these studies especially focus on neuroticism, extraversion, and conscientiousness, and there are relatively fewer studies examining the relationship between personality traits such as agreeableness and openness to experience and depression (Kotov et al., 2010; Malouff et al., 2005).

However, in these studies, while the factors that form the high levels are considered as personality trait measurements, it is seen that the factor component sub-dimensions are not included as second-order structures. On the other hand, it is suggested that personality traits should be evaluated in more detail in the context of their relationship with depression (Jourdy & Petot, 2017). In terms of personality measurement, gender differences are clearly revealed in the literature (Goodwin & Gotlib, 2004; Schmitt et al., 2016; Vianello et al., 2013). For this reason, in this study, only five factors and their sub-dimensions were taken as predictors of the female group and depression level, and the variable relationships were tried to be presented more comprehensively.

## 2. Methods

### 2.1. Participants

The participants of the study were 528 female participants between the ages of 18-70 ( $M=35.16\pm 11.93$  years). The participants were 83 primary school graduates (15.7%), 56 secondary school graduates (10.6%), 150 high school graduates (28.4%) and 239 university graduates (45.3%); 214 were single (40.5%), 298 were married (56.4%) and 16 were widowed or divorced (3.1%).

### 2.2. Materials

CES-Depression Scale (The Center for Epidemiologic Studies Depression Scale) is a 20-item self-report scale, four of which are reverse-directed and contain four-point Likert-type response (Radloff, 1977). A total score between 0 and 60 is obtained from the scale translated into Turkish (Tatar & Saltukoğlu, 2010).

Beck Depression Inventory (BDI) is a 21-item self-report scale scored on a four-point Likert scale between 0 and 3 (Beck et al., 1961). A total score between 0 and 63 is obtained from the scale translated into Turkish (Hisli, 1988; 1989). The Five Factor Personality Inventory consists of 220 items with five-point Likert-type answer. The inventory consists of five factors, the first-order structure, and seventeen second-order sub-dimensions under these five factors (Somer et al., 2002).

### 2.3. Procedure and data analysis

The study was carried out as individual applications in Istanbul within one year. Participants with a history of psychiatric admission at any time in their lives were not included in the study, and this was used as the exclusion criterion of the study. Data were examined with Cronbach Alpha internal consistency reliability analysis, Pearson correlation analysis, multiple linear regression analysis, and MANOVA.



## 2.4. Results

First, the internal consistency reliability analysis of the scales used in the study and the correlation coefficients between depression scales and personality inventory factors and dimensions were calculated. Internal consistency reliability coefficients were calculated as 0.87 for the CES-Depression Scale, 0.88 for the Beck Depression Inventory, 0.88 for the Extraversion factor, 0.86 for the Agreeableness factor, 0.78 for the Conscientiousness factor, 0.93 for the Neuroticism factor and 0.83 for the Openness to Experience factor. Internal consistency reliability coefficients of all dimensions were between 0.63 and 0.87.

Correlation coefficients were calculated between the CES-Depression Scale and five factors (ranging from -0.24 to 0.64) and between the CES-Depression Scale and seventeen sub-dimensions (ranging from -0.05 to 0.63). Likewise, correlation coefficients were determined between the Beck Depression Inventory and five factors (ranging from -0.23 to 0.62) and between the Beck Depression Inventory and seventeen sub-dimensions (ranging from -0.06 to 0.61).

In the analysis using factor total scores, the CES-Depression Scale total score was predicted by (in order of importance), Neuroticism ( $\beta = 0.55$ ), Extraversion ( $\beta = -0.14$ ), and Agreeableness ( $\beta = -0.11$ ). Only the Neuroticism ( $\beta = 0.59$ ) total score was included in predicting the Beck Depression Inventory total score. In the analysis using sub-dimension total scores, the CES-Depression Scale total score was predicted by (in order of importance), Self Assureness ( $\beta = 0.41$ ), Liveliness ( $\beta = -0.26$ ), Excitement Seeking ( $\beta = 0.14$ ), Agreement/Reconciliation ( $\beta = -0.14$ ), Emotional Lability ( $\beta = 0.13$ ) and Rules Boundness ( $\beta = 0.09$ ). Only the Self Assureness ( $\beta = 0.44$ ) total score was used to predict the Beck Depression Inventory total score.

Participants were divided into three groups, one standard deviation below and above the mean, using the CES-Depression Scale and the Beck Depression Inventory total scores. Then, the Five Factor Personality Inventory sub-dimensions and factor total scores of the three groups created using the CES-Depression Scale and the Beck Depression Inventory total scores were compared with MANOVA. It was observed that the three groups formed using both the CES-Depression Scale and Beck Depression Inventory total scores differed in terms of all five-factor total scores (Extraversion, Agreeableness, Conscientiousness, Neuroticism, and Openness to Experience). When the three groups formed by using the CES-Depression Scale total scores were compared in terms of sub-dimensions, differences were found between the groups in 15 of 17 sub-dimensions (Liveliness, Assertiveness, Interaction, Tolerance, Calmness, Agreement/Reconciliation, Soft Heartedness/Altruism, Orderliness, Responsibility/Deliberateness, Emotional Lability, Proneness to Anxiety, Self Assureness, Analytical Thinking, Sensitivity, and Openness to Newness), and no difference was observed in the Rules Boundness and Excitement Seeking sub-dimensions. When the three groups formed using the Beck Depression Inventory total scores were compared, there were differences between the groups in 15 of the 17 sub-dimensions (Liveliness, Assertiveness, Interaction, Tolerance, Calmness, Agreement/Reconciliation, Orderliness, Responsibility/Deliberateness, Excitement Seeking, Emotional Lability, Proneness to Anxiety, Self Assureness, Analytical Thinking, Sensitivity, and Openness to Newness), and no difference was observed in the Rules Boundness and Soft Heartedness/Altruism sub-dimensions.

## 3. Conclusion

Personality traits have been shown to be risk factors for depression (Kendler & Myers, 2010; Hakulinen et al., 2015). Clarifying the relationship between personality traits and depression will allow for determining which personality traits constitute a risk factor for the etiology of depression and, accordingly, adopting more effective treatment/therapy methods (Alizadeh et al., 2018; Flett et al., 1995). In this study, the personality-depression relationship was examined by using the five-factor personality model, taking both the factors as first-order structures and the factor components as second-order sub-dimensions. Thus, it was tried to determine which personality traits are effective in predicting depression. In line with what was stated previously (Kendler & Myers, 2010), as expected, all five of the five factors measured as personality measurements were found to be risk factors for depression.

However, the factors Neuroticism, Extraversion, and Conscientiousness were clearly associated with depressive symptoms. In two different depression measurements, the effect of the Neuroticism factor was evident as stated in the literature (Barnhofer & Chittka, 2010; Jylhä & Isometsä, 2006; Kotov et al., 2010; Malouff et al., 2005; McCrae & John, 1992; Takahashi et al., 2013). As a sub-dimension of the factor component, the effect of Self Assureness came to the fore. Additionally, the effect of Emotional Lability as a component of the Neuroticism factor was observed in one of the depression measures.

In addition, as factor component second-order sub-dimensions, it was determined that Liveliness, Agreement/Reconciliation, Rules Boundness, and Excitement-seeking predicted depression scores in the results of multiple regression analysis. MANOVA results confirm the regression analysis results. The fact

that the results obtained for two different depression measurements in the same study are largely similar but contain differences reveals the importance of how depression is measured. Different measurement tools capture different areas of variance. However, this difference is also evidence that both measurements are inadequate compared to each other in measuring depression.

In this study, since it is known that there are gender differences in personality traits (Goodwin & Gotlib, 2004; Schmitt et al., 2016; Vianello et al., 2013), only women were included by controlling the gender factor. There are other risk factors for depression such as age, family history of mood disorders, substance abuse, low level of social integration and social interaction (Hölzel et al., 2011). The fact that these risk factors were not controlled in this study is an important limitation of the study.

This study examined personality traits for depressive risk factors, controlling for gender. It seems difficult to draw causal conclusions between personality traits and depression due to the cross-sectional nature of the study and the lack of control of some confounding variables in terms of depression. Therefore, it is understood that longitudinal studies in which the mentioned confounding variables are controlled are needed to obtain more reliable results.

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## **ANXIETY, SOCIAL DESIRABILITY, AND COPING STYLES IN HYPERSEXUAL AND NON-HYPERSEXUAL MEN**

**Angelika Kleszczewska-Albińska**

*Faculty of Pedagogy and Psychology, Department of Psychology,  
Management Academy of Applied Sciences (Poland)*

### **Abstract**

Compulsive sexual behaviors (hypersexuality) include intense focus on sexual fantasies, urges or behaviors that an individual cannot control. The data on hypersexuality is limited. Until now it was proved that people suffering compulsive sexual behaviors experience high levels of distress and anxiety, and report difficulties in personal and professional areas of their life. In order to verify the levels of anxiety, social desirability and preferred coping styles of hypersexual persons, and to compare their results to the data obtained from the general population the empirical study was conducted. In the study the tendency for repression in hypersexual respondents in comparison to respondents recruited from the general population was also assessed. In the presented project 52 volunteer men participated, out of which 26 were diagnosed with hypersexuality and were recruited in the treatment center where they've attended their therapy, and remaining 26 respondents were recruited from the general population so they resembled all sociodemographics except for compulsive sexual behaviors. In order to verify the levels of anxiety, social desirability, and coping styles Trait Anxiety Scale, Social Desirability Questionnaire and mini-COPE were used. The tendency for repression was assessed according to the typology in which low levels of anxiety accompanied by high levels of social desirability is considered as a repressive coping style. The results obtained in the study proved that hypersexual men in comparison to the general population, presented significantly higher levels of anxiety. While coping with stress, men suffering from compulsive sexual behaviors had a high tendency toward instrumental support, venting, religion, and emotional support. The social desirability levels and a tendency toward repression were lower in hypersexual patients in comparison to respondents from the general population. The results obtained in the study might serve as a starting point for planning directed therapeutic interventions for hypersexual patients. It should be emphasized at the same time that the obtained results are only preliminary, and other studies in the area of compulsive sexual behaviors are needed.

***Keywords:** Hypersexuality, anxiety, social desirability, coping with stress, repression.*

## **1. Introduction**

### **1.1. Hypersexuality**

Hypersexuality, defined also as compulsive sexual behavior or hypersexual behavior is recognized in an individual who experiences recurring difficulties controlling intense, repetitive sexual activities for an extended period of at least six months. It is related to the high levels of distress, and/or significant impairments observed in important areas of functioning, e.g. personal, family, social, educational or occupational aspects of an individual's life (Montgomery-Graham, 2017). Hypersexual behavior is accompanied with excessive masturbation or any other autoerotic behaviors. It is usually correlated with problematic pornography consumption and promiscuity (Markovic, 2019).

Studies conducted up to date have underlined that hypersexuality corresponds with general psychosocial impairments, impairments in relationships, difficulties at school and/or work, and financial problems (Koo et al., 2021; Reid, Garos, & Fong, 2012). Positive correlations between hypersexual behaviors and neuroticism, hostility, and low levels of satisfaction with life were found (Böthe et al., 2018; Kowalewska, Gola, Kraus, & Lew-Starowicz, 2020; Studer, Marmet, Wicki, & Gmel, 2019). Individuals suffering with hypersexuality report high levels of loneliness, shame and guilt (Jennings, Lyng, Gleason, Finotelli, & Coleman, 2021). Compulsive sexual behaviors often co-occur with other mental problems (e.g. depression, eating disorders, substance abuse) (Ballester-Arnal, Castro-Calvo, Gimenez-Garcia, Gil-Julia, & Gil-Llario, 2020). It is also associated with violence and sexual abuse (Jepsen, & Brzank, 2022).

## **1.2. Styles of coping with stress**

Stress is defined as a reaction to incongruence between an individual's abilities and the requirements of the situation that is perceived as depleting and exceeding the resources of a person. It is believed that an individual takes an effort to cope with such difficulties with either attempts aimed at management of the situation or self-defense. In general, in order to cope with stress, people use dynamically changing cognitive, behavioral and emotional techniques aimed at reducing the tension they experience (Lazarus & Folkman, 1984). Coping is therefore a constantly changing self-regulatory process associated with reduction of emotional tension.

Different approaches to coping with stress can be classified into one of three general categories: task-oriented strategies, emotion-oriented approaches, and avoidance-oriented strategies (Endler & Parker, 1990). Task- or problem-focused strategies are aimed at changing the stress-inducing situation in order to find a solution to the problem. Among such strategies there are confrontational coping, self-control, planning and solving the problem, acceptance of responsibilities. Emotion-oriented strategies are connected with focusing the attention on an individual and their subjective emotional experiences. It aims at reducing emotional tension, and self-blame with either catastrophizing or unrealistic optimism. Avoidance-focused strategies include seeking social contacts or involvement in other activities (e.g., shopping, watching something, substance abuse). It is believed that in controllable situations the most effective are problem-focused strategies of coping with stress, while in uncontrollable situations the most helpful for an individual are avoidance-oriented approaches (Smith, Saklofske, Keefer, & Tremblay, 2016).

## **1.3. Defensive styles of coping**

The term defensive styles of coping is used to describe the processes an individual employs in order to protect themselves from situations and stimuli subjectively perceived as demanding and/or threatening. According to Weinberger, Schwartz, & Davidson (1979) there are two different types of defensive coping: repression and sensitization. Repression is a coping strategy based on an avoidance of any unpleasant and/or threatening stimuli. Sensitization on the other hand includes approaching unpleasant and/or threatening stimuli (Myers, 2010). According to the presented approach repression-sensitization is often described and understood as a two-dimensional concept of dispositional coping observed in stressful, especially ego-related, situations.

The relatively stable individual tendency to use repression or sensitization is recognized based on subjectively assessed individual levels of anxiety (measured for example with MAS Scale or State Trait Anxiety Inventory) and social desirability (assessed for instance with Marlowe-Crowne Social Desirability Scale). In order to identify repressors and sensitizers (i.e. persons with a tendency for repression or sensitization) the median split of the results of the abovementioned scales are calculated and then combined, resulting in formation of four independent groups: repressors, truly low-anxious, truly high-anxious, and sensitizers (Kleszczewska-Albińska, in press).

## **2. Objectives**

The main aim of the study was to verify the levels of anxiety, social desirability and preferred coping styles of hypersexual persons, and to compare their results to the data obtained from the general population. It was also checked whether the hypersexual respondents differ from the general population according to their tendency for repression or sensitization.

## **3. Methods**

### **3.1. Participants**

In the study 52 volunteer men, aged 18-48 ( $M=33.23$ ;  $SD=6.73$ ) participated. Among all the respondents there were 26 persons without diagnosis (age 18-48;  $M=32.42$ ;  $SD=6.55$ ) and 26 men diagnosed with hypersexual behaviors (age 18-47;  $M=34.04$ ;  $SD=6.93$ ). All diagnoses were given by qualified clinical psychologist working at a counseling center for hypersexual persons. The respondents from hypersexual and non-hypersexual groups were similar according to the sociodemographic characteristics, so the main difference between the groups concerned the presence or absence of hypersexuality.

### **3.2. Procedure**

All the respondents suffering hypersexual behaviors were approached individually during their visits to the counseling center. Respondents not diagnosed with hypersexuality were also individually

asked for participation in the study while they visited primary care physicians in different clinics. Men from the group without hypersexuality diagnosis were chosen according to the sociodemographic characteristics, so they resemble respondents suffering hypersexual behaviors in terms of age, education, place of residence etc.

The respondents were approached by psychology student trained in data collection, who informed men waiting for their appointments with professionals about the psychological study concerning general functioning and coping with stress. Next, men who expressed their interest in learning more about the project were given details about the aim and procedure of the research. After giving an informed consent, respondents who volunteered to participate in the study were given questionnaire sets and were asked to fill them in, and to return them to the person collecting the data. The study was conducted in compliance with ethical principles.

### 3.3. Materials

Three standardized psychological tests were used in the study. In order to assess styles of coping with stress Polish adaptation of Mini-COPE was used. Polish adaptation of State Trait Anxiety Inventory (STAI) was used for assessing the levels of trait anxiety. Social Desirability Questionnaire (KAS) was used for measuring the levels of social desirability. Two latter tests were also used in order to identify defensive styles of coping.

## 4. Results

Before conducting the analyses, the normality of the distribution of Mini-COPE was verified with the Shapiro-Wilk test combined with an analysis of indexes for skewness and kurtosis. Gathered results met the criteria for normal distribution (e.g. Field, 2018) therefore in order to analyze the differences in the mean levels of coping strategies, anxiety, and social desirability in groups of hypersexual and non-hypersexual men it was decided to use parametric tests. While analyzing the categorical data non-parametric tests were applied (Field, 2018).

Based on the ANOVA analyses, the mean differences between the tendencies for different styles of coping, anxiety levels, and social desirability levels in groups identified based on hypersexuality diagnosis were assessed. Statistically significant differences are given in detail in Table 1.

*Table 1. Results of ANOVA analyses for mean levels of styles of coping, anxiety, and social desirability in groups identified according to the hypersexuality diagnosis.*

|                      | hypersexual<br>N=26 |      | non-<br>hypersexual<br>N=26 |      | F     | p     | $\eta^2$ |
|----------------------|---------------------|------|-----------------------------|------|-------|-------|----------|
|                      | M                   | SD   | M                           | SD   |       |       |          |
| religion             | 2.54                | 1.86 | 1.38                        | 1.79 | 5.19  | .027  | .09      |
| emotional support    | 3.62                | 1.24 | 2.73                        | 1.8  | 4.27  | .044  | .08      |
| instrumental support | 3.54                | 1.10 | 2.15                        | 1.43 | 15.23 | <.001 | .23      |
| venting              | 3.19                | 1.06 | 1.92                        | 1.06 | 11.65 | .001  | .19      |
| anxiety              | 50.85               | 6.27 | 47.00                       | 8.22 | 11.36 | <.001 | .22      |
| social desirability  | 10.65               | 5.42 | 15.58                       | 6.56 | 8.71  | .005  | .15      |

Next, four independent groups varied in their tendency for defensive coping were formed. Medians for the STAI ( $Me=47$ ) and KAS ( $Me=13$ ) questionnaires were calculated, and based on the median split groups that differ in the levels of anxiety and social desirability were identified. Detailed information concerning classification of respondents in the presented study is given in Table 2.

*Table 2. Groups identified according to their tendency for defensive style of coping.*

| Group   | Number of people |
|---|------------------|
| low-anxious ( $\downarrow$ STAI $\downarrow$ KAS) | 9                |
| high-anxious ( $\uparrow$ STAI $\downarrow$ KAS)  | 18               |
| repressors ( $\downarrow$ STAI $\uparrow$ KAS)    | 20               |
| sensitizers ( $\uparrow$ STAI $\uparrow$ KAS)     | 5                |

There are significant  $\chi^2(3)=11.85$ ;  $p<.01$  differences in the number of people identified as representatives of each group. It was also verified whether there is any correspondence between defensive styles of coping and a tendency toward hypersexuality. The crosstab with  $\chi^2$  test proved that there is a

significant connection between those two variables  $\chi^2(9)=20.00$ ;  $p<.001$ . Detailed information is given in Table 3.

Table 3. Number of people from low-anxious, high-anxious, repressors, and sensitizers types according to the hypersexuality diagnosis.

|              | hypersexual | non-hypersexual |
|--------------|-------------|-----------------|
| low-anxious  | 5           | 4               |
| high-anxious | 16          | 2               |
| repressors   | 4           | 16              |
| sensitizers  | 1           | 4               |

## 5. Discussion

The results obtained in the study prove that hypersexual men, in comparison to non-hypersexual respondents, declare higher levels of anxiety and lower levels of social desirability. They are also more prone than non-hypersexual men to use coping strategies including instrumental support, religion, emotional support, and venting. Analysis proved that it is more common for hypersexual respondents to react with high anxiety, while for non-hypersexual men it is more common to use repression.

The results of the presented study are in compliance with data published so far proving that hypersexual patients report higher levels of anxiety (Coleman, 1992; Scanavino et al., 2018). Studies published up to date prove that hypersexuality corresponds with non adaptive coping strategies, such as withdrawal or self-blaming (Elrafei & Jamali, 2022; Reid, Harper, & Anderson, 2009), which only partially corresponds to the results obtained in the presented study. It was proved that hypersexual respondents have a tendency for emotion-oriented coping strategies, but both religion and emotional support are perceived as adaptive coping strategies while only venting is believed to be a non-adaptive coping strategy. Also, it was discovered that hypersexual respondents are prone to use problem-oriented, adaptive coping strategy known as instrumental support. It is possible that the adaptive strategies used by respondents in the described above study are resulting from their engagement in therapeutic processes (Lampalzer, Tozdan, von Franqué, & Briken, 2021), but this hypothesis needs an empirical verification.

Interesting is also the result proving that hypersexual respondents have lower levels of social desirability in comparison to the non-hypersexual persons. Previous studies have shown that the social desirability level is positively correlated with high indicators of hypersexual behaviors (Böthe et al., 2019; Lampalzer et al., 2021), so the result obtained in the described study is opposite to the previous results. It is highly probable that during the therapeutic process hypersexual patients learn to accept themselves and in effect they do not need to present themselves in socially desirable manner, but this hypothesis needs an empirical verification.

High number of hypersexual persons present in the group of highly-anxious type is in congruence with previous results presenting correlations between high anxiety levels and hypersexuality (Coleman, 1992; Scanavino et al., 2018). It means that hypersexual respondents participating in the study do not use defensive coping strategies. It is possible that such a result is an effect of therapy undertaken by respondents, but this hypothesis needs further empirical verification. Interesting is the result proving that among non-hypersexual men there are many repressors. It can be therefore stated that among male respondents from non-hypersexual group there were many persons presenting defensive style of coping. It is possible that men taking part in the study underestimate their real emotional states which can negatively influence their everyday functioning (Myers, 2010). Possibly the result obtained in presented study is an effect of cultural expectations stating that men should not present any kind of emotions (Chaplin, 2015; Fernández, Carrera, Sánchez, Paez, & Candia, 2000), but such hypothesis needs additional empirical verification in future studies.

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## FOSTERING THERAPEUTIC ALLIANCE AND LONG-TERM BENEFITS THROUGH VIRTUAL COLLABORATION IN VRET

**Kristína Varšová, & Vojtěch Juřík**

*Department of Psychology, Faculty of Arts, Masaryk University, Brno (Czech Republic)*

### Abstract

Within the last decade, immersive virtual reality (iVR) has emerged as a transformative technology in the fields of psychology and psychotherapy, offering promising avenues for novel therapeutic approaches. The increasing demand for psychotherapeutic services and innovative methods to facilitate and enrich psychotherapeutic processes has underscored the unique potential of iVR such as accessibility, scalability, easy creation, and dynamic modification of the virtual content customization and safety. This paper explores the integration of collaborative immersive virtual environments (CIVEs) within Virtual Reality Exposure Therapy (VRET), aiming to extend the application of cognitive-behavioral therapy (CBT) techniques. Our investigation not only refines VRET as a contemporary CBT tool but places significant emphasis on the crucial role of therapeutic alliances and the enduring impact of successful interventions. Central to our discussion is the idea that CIVEs should facilitate meaningful interactions between therapists and clients in an immersive virtual realm, which we also attempt to support with our past and follow-up research. Beyond the conventional boundaries of VRET, our perspective advocates for expanding collaborative efforts to encompass traditional CBT sessions conducted within iVR. This deliberate expansion of virtual therapeutic involvement seeks to overcome geographical limitations that align with the evolving landscape of remote therapy while preserving the essential components of established therapeutic methods. We introduce a framework that not only embraces technological progress but also underscores the importance of cultivating strong therapeutic connections, thereby contributing to lasting treatment success.

**Keywords:** *iVR, CIVE, virtual reality, psychotherapy, cognitive-behavioral therapy.*

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### 1. Introduction

Significant strides in iVR technologies have captivated researchers and experts from various fields of psychology. Considering VR's distinctive features such as interactivity, and multisensory approach, professionals have increasingly used it for research and various practical activities due to its cost-saving, accessibility, and user-friendliness (Boeldt, McMahon, McFaul, & Greenleaf, 2019; Slater, 2018). An escalating trend within contemporary psychotherapeutic paradigms involves the increasingly prevalent integration of VR as a substantive asset in therapeutic interventions (Olenichenko, 2023). One form of VR-based therapy is VRET for phobias, where one is systematically exposed to feared stimuli in a virtual environment (Roesmann et al., 2023). Among the most prevalent phobias is acrophobia - an intense and irrational fear of heights often co-occurring with other mental health issues (Menzies & Clarke, 1995). Symptoms include increased sweating, elevated heart rate, chest pain, palpitations, nausea, tremors, trembling, dizziness, or loss of balance (Kapfhammer et al., 2015). For acrophobia, CBT is the primary psychotherapeutic approach, with VRET being the common, and recently found to be a very effective, approach (Chou et al., 2021). The therapeutic alliance in CBT is considered essential for positive outcomes in therapy (Feindler & Smerling, 2022). It is argued that the therapeutic relationship is often secondary to technique in CBT training, receiving little attention (Easterbrook & Meehan, 2017).

In addition, nowadays, researchers can gain much insight into people's physical, mental, and emotional responses by combining VR with tools that measure signals from the body (Lee, El Ali, Wijntjes, & Cesar, 2022). The measurement of biosignals is imperative as it serves as a crucial avenue for gaining deeper insights into individuals' emotions, behavior, and overall experiential responses (Giannakakis et al., 2022). Heart rate (HR) is the most common physiological measure for stress, while heart rate variability (HRV) proves more sensitive to emotional states. HRV reflects fluctuations in beat-to-beat intervals, indicating parasympathetic and sympathetic nervous system activity (Duong et al.,

2020). This nuanced measure allows for an objective assessment of an individual's mental state during VRET (Ihmig et al., 2020).

In the wake of technological advancements and expansions, contemporary innovations have yielded sophisticated platforms such as CIVE. Developed to foster collaboration, the CIVE platform facilitates virtual interaction among multiple participants, promising advantages such as diminished waiting times, erasing the need for physical presence, and heightened operational efficiency (Conesa, Mula, Bartlett, Naya, & Contero, 2023; Juřík, Herman, Kubiček, Stachoň, & Šašík, 2016). Notably, CIVEs exhibit personalized characteristics, affording adjustments to replicate real-life interactions and influencing the dynamics of collaborative relationships (De Back, Tinga, & Louwse, 2023).

Building upon the aforementioned elements, our focus shifts towards their combination – integrating CIVEs into the framework of VRET, while concurrently incorporating physiological measurements. The objective is to broaden the application of CBT techniques within the current state of knowledge in combination with the latest technology. In addition to enhancing VRET as a contemporary CBT tool, we want to place a heightened emphasis on the importance of exploring how this latest approach might affect therapeutic adherence and the lasting effects of successful interventions.

## 2. State of the art

VRET and VR CBT have undoubtedly become an irreplaceable and advantageous methods for treating acrophobia in today's world (Donker & Heinrichs, 2023). For certain individuals, consistent attendance at CBT sessions may present challenges, stemming from geographical constraints, transportation limitations, or other logistical issues. Factors such as residing in remote locations, lack of accessible transportation, or time constraints due to busy schedules can impede regular in-person attendance, potentially leading to weakened results in both treatment effectiveness and therapeutic alliance. In response to these challenges, transitioning to fully remote or virtual collaborations between therapists and clients emerges as a potential solution, that researchers are beginning to explore. This can also be supported by the discovery from Rogers et al. (2022) that virtual reality interactions closely resemble in-person interactions. In the realm of current remote psychotherapy setting, conventional telehealth approaches such as videoconferencing and telephone sessions are prevalent. On the other hand, Pedram et al. (2020) study, exploring counseling sessions in both VR and Skype platforms, revealed a noteworthy superiority of VR over Skype. VR surpassed Skype in crucial dimensions, excelling as a therapeutic tool, enhancing session realism, and delivering a heightened sense of presence. All those factors are crucial during therapy; therefore, VRET again shows more potential in remote possibilities.

Li and Yip (2023) introduced a pilot case study that marks the pioneering investigation into the integration of CIVE and therapeutic practices. In this study, the authors explored the viability of employing a custom CIVE for remote arts therapy. Conducted exclusively within the CIVE, both quantitative and qualitative data indicated the approach's feasibility, well-received by both participants and the therapist. Another innovative attempt was made only recently by Moldoveanu et al. (2023), who focused on linking VRET with biosignals acquisition. Their prototype system features scenarios designed for acrophobia, claustrophobia, and fear of public speaking therapy, during which users engage in gamified tasks, navigating VR environments while their biophysical data (electrodermal activity and HR) is acquired. The system integrates automatic anxiety level classification, biofeedback within scenes, and dynamic virtual environment adaptation. A dedicated application serves as a control panel for psychotherapists, managing patient profiles and therapy sessions. Qualitative feedback from subjects and psychotherapists validated the prototype, offering insights for refinement. Anyway, we can't forget about the remaining questions arising from the research mentioned above - How might the absence of the therapist in the virtual environment and his/her guidance within the VRET affect the participant? Research suggests that in VRET, sessions led by psychologists prioritize building a strong therapeutic relationship through mutual task and goal setting, yielding enhanced treatment outcomes and improved adherence (Buchholz & Abramowitz, 2020). The crucial role of psychological guidance in VR exposure therapy cannot be overstated, yet this remains an under-explored domain. Despite the attention some experts give to automated interventions and their potential impact, the true value and effectiveness of fundamental human guidance in the same context remains somewhat uncertain and open to interpretation. That is why we have decided to delve into the issue in part.

To summarize, while ongoing research emphasizes efficiency and technological advancements, the synergy between VRET and CIVE integrating physiological measurements like HRV remains largely unexplored. This uncharted territory represents an unprecedented convergence, offering an ideal platform for therapists and clients dealing with acrophobia. The incorporation of CIVE into VRET not only marks an innovative stride in mental health treatment but also unlocks avenues for more accessible,

personalized, and efficient therapy experiences. The utilization of HRV as an objective indicator further enhances the potential for assessing the client's mental state during exposure sessions.

### **3. Revelations from our study**

In our previous research endeavor, we delved into the anxiety experiences of individuals with a moderate fear of heights when confronted with height situations in VR, aligning with the prevalent trend of utilizing VR in phobia psychotherapy. The primary objective was to discern disparities in HRV between two participant groups – those with and without psychological guidance during exposure to height scenarios in an immersive virtual environment. Additionally, we sought to examine potential variations in scores on the self-assessing (subjective) anxiety questionnaire between these groups. These assessments aimed to illuminate participants' anxiety experiences in a VR-based height situation and gauge the impact of psychological guidance on such encounters. Notably, our findings based on objective physiological measures underscored that participant receiving psychological guidance demonstrated heightened preparedness in managing anxiety compared to their counterparts without psychological support. This guidance not only reduced anxiety but also enhanced mental resilience in handling stress and deepened cathartic experiences without escalating anticipatory nervousness. Furthermore, participants with psychological guidance exhibited a more profound cathartic response post-height exposure, evident in a steeper decline in HR values. The study illuminated that anxiety in psychologically guided participants diminishes gradually, while non-guided participants experience unevenly intense, recurring waves of anxiety (Varšová et al., unpublished manuscript).

Our results underscored the rationale for using objective data as HRV, as the difference in subjective questionnaires not only failed to show differences across groups, but such subjective and rigid data did not provide additional, beneficial, insights into the lived experiences of participants, and consequently, in practical application, clients.

### **4. Crafting the future and harvesting of benefits**

Where will the next research steps take us? First of all, to the combination of information and approaches highlighted so far. The focus should center on the meticulous development of an optimal CIVE application for therapists and clients engaging in VRET. This endeavor, same as for any other project, should entail a systematic approach involving pivotal steps: an in-depth exploration of the topic, formulation of a robust methodology, and practical testing through piloting the virtual environment. By thoroughly examining existing knowledge, assimilating insights from the literature, and translating these findings into practical guidelines, our research should establish a solid foundation for implementing optimal CIVE settings. The subsequent piloting phase will offer opportunities for real-world testing, the collection of valuable feedback, and the refinement of the virtual environment based on the experiences of both therapists and clients. We decided to include in the pivot testing collaboration with CBT experts whose experience with exposure therapy can provide beneficial insights and allow us to modify and refine the application into a final, high-quality, and effective treatment. It can subsequently also improve CBT therapist's attitude and increase the chance of using this technology in their practice in the future (Rimer, Husby, & Solem, 2021)

Our motivation for this project is to open the door for long-term collaboration between client and therapist within a virtual environment. Most studies in VRET targeting acrophobia (but also other phobias) are frequently administered as a one-time session, this setting does not lead to deeper collaboration or the acquisition of an alliance (Diemer, Lohkamp, Mühlberger, & Zwanzger, 2016; Chou et al., 2021). The duration of VRET sessions exhibits considerable variation across studies. For single-session therapy to be efficacious, the exposure duration needs to extend to at least 60 minutes but could last up to 3 hours (Kahlon, Lindner, & Nordgreen, 2019). However, for optimal effectiveness in VRET, sessions should last at least 15–20 minutes, particularly when multiple sessions (a minimum of 4) are incorporated into the therapeutic regimen (Krzystanek et al., 2021). For these particular reasons, we consider it more beneficial to use the second approach - namely repeated exposures and performing an average of one VR exposure per week.

### **5. Exploring potential challenges**

However, it is important to acknowledge that implementing entirely remote therapeutic modalities may introduce its own set of challenges, such as ensuring reliable internet connectivity, face possible data leaks, maintaining a secure virtual environment, and addressing potential barriers to

effective communication. Striking a balance between the advantages of remote accessibility and the potential hurdles associated with fully virtual interactions remains a critical consideration in expanding the reach and effectiveness of therapeutic interventions.

## 6. Conclusion

In the past decade, iVR has revolutionized psychology and psychotherapy, offering promising avenues for innovative therapeutic approaches. This conference paper explores the integration of CIVES into VRET, refining it as a contemporary CBT tool. Emphasizing the role of therapeutic alliances and the enduring impact of interventions, CIVES in the right setting can facilitate meaningful interactions in an immersive virtual realm. Beyond conventional VRET boundaries, we advocate for expanding collaborative efforts to encompass traditional CBT sessions within iVR, overcoming geographical limitations in the evolving landscape of remote therapy. The framework introduced supports technological progress while underscoring the importance of cultivating strong therapeutic connections for lasting treatment success.

Building on findings from our previous study exploring anxiety experiences in fear of heights in VR, which emphasized the value of psychotherapeutic guidance and objective physiological measures HRV, our future path is aiming to develop an optimal CIVE app for therapists and clients in VRET. This involves fostering long-term collaboration within a virtual environment. While acknowledging challenges in remote therapeutic modalities, the paper advocates striking a balance between remote accessibility advantages and potential hurdles. The research avenue includes the proposal of an application that dynamically modifies exposure to virtual content while monitoring participants' physiological responses, contributing to the evolving landscape of VR-based CBT.

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## HEALING THROUGH MIRRORING THE OTHER: A SINGLE CASE ON SHARING VULNERABILITY IN THE THERAPEUTIC RELATIONSHIP

Carolina Papa<sup>1</sup>, Erica Pugliese<sup>2,3</sup>, Ramona Fimiani<sup>2,4</sup>, & Claudia Perdighe<sup>2</sup>

<sup>1</sup>Department of Psychology, Sapienza University of Rome (Italy)

<sup>2</sup>Associazione di Psicologia Cognitiva APC e Scuola di Psicoterapia Cognitiva SPC (Italy)

<sup>3</sup>Millemé, Violenza di Genere e Dipendenze Affettive (Italy)

<sup>4</sup>Control-Mastery Theory Italian Group (Italy)

### Abstract

Research in psychotherapy has tried to identify which elements favor and hinder the therapeutic alliance. However, few studies have analyzed how these processes come into play when patients and therapists share the same psychological vulnerability factors. The innovation of this contribution is twofold: 1. For the first time, patient and therapist expose, in a single work, their point of view in moments of impasse regarding their respective roles in the relationship and the emotions and tendencies to action activated by each other; 2. The Cognitive Model of Pathological Affective Dependencies (Pugliese et al., 2023), which focuses on the frustration of basic needs as an antecedent for traumatic relationships, is first applied to therapeutic alliance breakdowns. In relational trauma, there are feelings of distrust, a perception of the world as dangerous and unpredictable, and, concerning others, a belief in unlovability prevails. While the therapeutic relationship provides the basis for processing traumatic experiences through a new relational experience, it is the patient's compromised capacity for trust that makes it difficult to achieve stability. The feeling of powerlessness and helplessness underlying the trauma leads the relationship to oscillate between needs for closeness and distance, triggering an emotional spiral that leads to the interruption of emotional expressiveness, communication, and intimacy. Through a single case, we illustrate the complexity that the therapeutic relationship assumes when it is embedded in a disabling interpersonal cycle in which the patient feels drawn to destroy the therapist's image, even though she feels the need for the relationship and the pain resulting from its loss. The need for security and attachment, coupled with the terrifying fear of losing the other, activates attempts at a solution based on control and the use of power that will constitute the leading cause of the break of the bond and the primary factor in maintaining a long impasse in the therapeutic process, leading to a collapse of metacognition and confusion of roles. The therapeutic setting takes the form of a courtroom in which the patient and therapist remain for a long time trying, through their clinical expertise, to find answers to a single question: Who is the abuser, and who is the victim? This contribution allows careful analysis of interpersonal cycles in relational trauma through an integrated clinical reading of the patient and therapist, supporting the progress of research in psychotherapy aimed at developing increasingly precise strategies to ensure effectiveness.

**Keywords:** *Adverse childhood experiences, relational trauma, therapeutic relationship, vulnerability factors.*

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### 1. Introduction

The therapeutic alliance constitutes one of the elements underpinning the therapeutic process and is fundamental to its successful outcome. Numerous types of research highlight the relevance of relational factors in the understanding of therapeutic efficacy (Wampold & Imel, 2015; Norcross & Lambert, 2019; Castonguay et al., 2019) and emphasize how the experience of the therapeutic relationship represents a strongly curative element in itself, regardless of the patient's diagnosis. Complex post-traumatic disorder is associated with a pervasive distrust of others (Cloitre et al., 2009), as trusting implies that the patient is at risk of being abused, rejected, or abandoned again (Gobin & Freyd, 2009). Individuals learn to ignore their emotions, shifting their attention to the other, adjusting behaviors according to hypothetical responses from those who are supposed to look after them (van der Kolk et al., 2005). A solid therapeutic alliance is crucial for therapeutic success with adult trauma survivors (Cloitre et al., 2004), as instilling a sense of safety through the therapist's presence can lead to the reduction of dysfunctional coping strategies, promoting

growth and change. Paradoxically, attempts by the therapist to establish a safe and trusting relationship may trigger in the patient the same defenses associated with previous experiences of abuse that require a degree of intimacy, one of which is dissociation (Pearlman & Courtois, 2005). The present work aims to highlight the connotation that the therapeutic relationship can take on in the context of complex post-traumatic stress disorder when embedded in the oscillation between the patient's need for a healthy dependence on the therapist and, at the same time, terror and denial of the same. From a theoretical point of view, the authors interpreted the patient's mental functioning according to the Cognitive Model of Pathological Affective Dependence (Pugliese et al., 2023), which focuses on how early adverse experiences can lead to the development of different pathological parts from unmet needs for love, dignity, and security. According to the model, there are four types of parts that relational trauma can generate, characterized by specific goals, antagoals, and dysfunctional beliefs about self and others: the savior, the unworthy, the vulnerable, and the mixed. In the present case, these parts protect each other with the ultimate aim of not entering the relationship for fear of showing the vulnerable part that would make the patient, in the representation of her suffering, dependent on the other (in this case, the therapist) with the consequent risk of reliving the real and threatened emotional abandonment that reigned in the relationship with the caregiver.

## 2. Case presentation

The patient is a young woman of 33 and works as a psychologist in a psychiatric community. She asked to start psychotherapy because, about a year earlier, her grandmother, to whom she was very close, died suddenly of a heart attack. This event triggered the activation of the patient's three main anti-goals. She felt unlovable at the idea of not having been able to prevent the event, unworthy of the idea of expressing her suffering, and in danger of the sudden loss. The patient has a brother who has been completely blind since birth. This situation caused deep distress to her parents, whose attention was mainly devoted to her brother, neglecting the patient's basic emotional needs. The parents often delegated to her the role of managing her brother while at the same time asking her to give up rights that her brother could not access. As a result, the patient developed a belief in unlovability, whereby the expression of her emotional needs, in her mind, has no right to exist apart from the suffering of the other.

Figure 1. Young Schema Questionnaire (YSQ-S3).

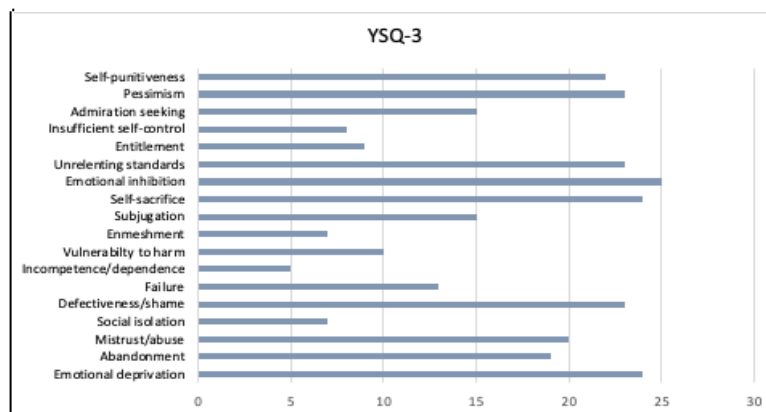
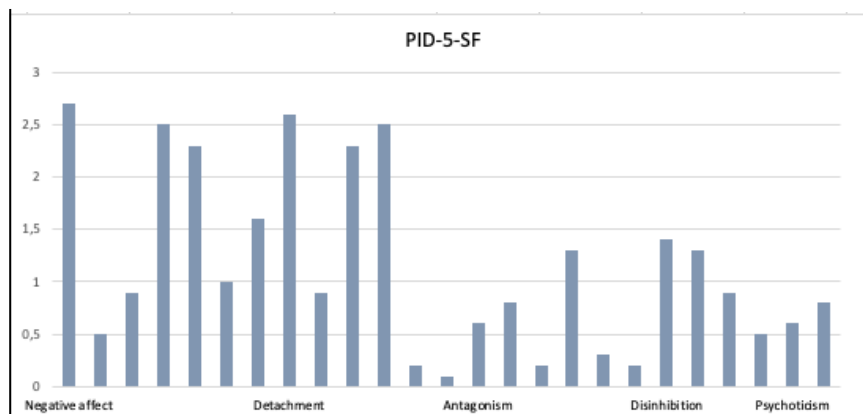


Figure 2. Personality Inventory for DSM-5.



Figures 1 and 2 show the patient's early maladaptive schemas revealed by the Young Schema Questionnaire (YSQ-S3; Young, 2005) and the personality domains measured through the Personality Inventory for DSM-5 (APA, 2013). The patient's patterns refer to early experiences of neglect, abandonment, and emotional deprivation, giving rise to a sense of being defective and deserving of self-punishment. The personality domains lie mainly on negative affectivity, which refers to emotional lability and difficulty regulating emotions, and detachment, which consists of a tendency to withdraw from relationships and avoid intimacy.

### 3. Therapeutic relationship: interpersonal cycles and impasses

The leading cause of the fracture in the therapeutic relationship is the separation that occurred between patient and therapist due to the pregnant state of the therapist. Indeed, starting from the idea of herself as unlovable, the patient feels the frustration of the aims of love, dignity, and security in the therapeutic relationship (Pugliese et al., 2023) as a consequence of the therapist's temporary absence. Even though the patient perceives the sense of loss as a state induced by the distance of the therapist, whom she imagines to be unconcerned about, she reacts with avoidance coping as she does not feel entitled and safe to express her suffering. Hence, problematic interpersonal cycles arise, whereby the patient acts in such a way as to elicit reactions in the therapist that confirm her pathogenic beliefs (Carcione et al., 2016). The three primary interpersonal cycles occurring in the relationship are described. The cycles are intended to alternate with each other during an impasse in the therapeutic process, lasting several months.

*Deontological cycle (Deontological self/Humiliating other):* In the face of the therapist's availability and attempts at closeness, the patient feels anger as she feels distrust and considers them inauthentic. She, therefore, begins to engage in critical and protesting behavior in the therapeutic relationship, controlling everything the therapist does and attempting to reverse the roles. The therapist, who has a similarly traumatic history, perceives the patient as abusive and reacts aggressively, confirming the patient's fear that the other despises her as unworthy.

*Altruistic cycle (Altruistic self/Fragile other):* Faced with the therapist's confinement reactions due to her attempts at resolution based on control and the use of power, the patient begins to feel guilty, identifying with the abuser. To atone for this sense of responsibility, the patient, who sees herself as a worthless burden to the therapist, begins to "help" her through her clinical skills. This behavior is guided in the patient by the idea that she can only obtain love and closeness when she plays the helper role. With this attitude, the patient arouses a sense of guilt in the therapist, who now feels a sense of inadequacy as she does not feel equal to the situation and identifies with the abuser. The therapist then proposes to the patient to turn to another therapist, confirming her fear of being abandoned because of her unlovability.

*Mixed cycle (Deontological self/Humiliating other; Altruistic self/Fragile other; Vulnerable self/Abusing other):* In the mixed cycle, the patient's mental states alternate chaotically with each other. She, therefore, feels guilty at the idea of creating further problems for the therapist (*Altruistic self/Fragile other*), feel unrecognized and unseen in her needs by her (*Deontological self/Humiliating other*), and feels that she can no longer trust her and cannot show her fragility because she feels that the therapist would not be able to support her (*Vulnerable self/Abusing other*). The therapist tries various interventions: she shows the patient the interpersonal cycle that had been developing to help her differentiate, communicates her difficulties in managing the situation, and reassures her through her presence and closeness. The patient experiences the therapist's differentiation as an attempt to push her away (*Deontological self/Humiliating other*), the sharing of her difficulties as empowering (*Altruistic self/Fragile other*), and her closeness as dangerous (*Vulnerable self/Abusing other*). At this point, the therapist experiences the reactivation of a new traumatic state, feeling powerless (*Vulnerable/Abusing other*), not up to the task (*Deontological self/Humiliating other*), and capable of harming the patient (*Altruistic self/Fragile other*). Faced with this shared mixed state, during the sessions, there were moments of silence and detachment where the only thing that emerged was a profound sense of helplessness.

The activation of the three traumatic parts leads to a complex mixed cycle that self-sustains over time, characterized by moments in which the patient's sense of devaluation is followed by the therapist's, the fear of harming the patient follows the fear of harming the therapist, and the patient's sense of danger is followed by the therapist's.

### 4. Disconnection as a cure

The resolution of the impasse occurs when the therapist adopts a reflective attitude that allows her to understand that what is active is not her mental state but that of her patient and that she is experiencing her own emotions. She realizes, therefore, that her activation can be observed and contained as countertransference. The acquisition of a sense of control, constant presence even when the patient was



pushing her away, and transparency towards the patient led the latter to gain a more stable sense of security in the relationship. The patient slowly brings forth her vulnerable part, albeit marked by strong states of shame. The therapeutic relationship remains characterized by continuous dysregulation and co-regulation between the patient and the therapist. However, the patient no longer perceives these moments as irreparable and hopeless but as typical instances of disconnection that characterize a healthy relationship (Tronick & Gold, 2021).

Given the patient's ingrained distrust with a history of complex trauma, repairing the alliance is an ongoing process during treatment. It is, in a sense, analogous to the attachment development process between parent and child, where there is a transition from attunement to disruption and, finally, to repair (Steele et al., 2001). This process is crucial because it underlies the expectation that the relationship can be disrupted and subsequently repaired, allowing the patient to modify her traumatic schema.

A primary dynamic in trauma involves the representation of family roles as victim-perpetrators in the therapeutic relationship: the therapist and the patient embody these roles, often in complementary ways, reliving different aspects of the patient's attachment relationships. While the therapist's emotional identification with the patient's "victim" experience can be very painful, identification with the "aggressor" can take various forms and lead the therapist to rationalize, feel repulsion towards the patient's behavior, or become judgmental when the patient does not conform to how a "good" patient should behave (Herman, 2005). The traumatized patient carefully monitors the environment, developing a sophisticated ability to notice the non-verbal signals of others and attempting to resolve their ambiguity through interpretative bias, as uncertainty is intolerable for him/her (Arditte Hall & Arditte, 2022; Gebhardt et al., 2017). This hyperattention to signals from others' behavior necessitates the therapist to adopt an authentic and genuine attitude within the relationship, maintaining a good awareness of their emotions, needs, and origins to use them to understand and help the patient. On the contrary, any inauthentic behavior by the therapist leaves room for interpretations in the traumatized patient that align with their negative expectations and foster the establishment of dysfunctional interpersonal cycles (Carcione et al., 2016).

## 5. Conclusions

Insecure attachment can act as a risk factor in patients with complex trauma's ability to establish a good therapeutic alliance, and this appears particularly true in cases of avoidant attachment (Lafrenaye-Dugas et al., 2018), where the development of interpersonal relationships is experienced as frightening and may lead to the denial of the need to establish a relationship with the therapist (Smith et al., 2010; Godbout et al., 2017). Survivors of early exposure to relational trauma often hold a predominant belief about the world and others as dangerous and uncaring, while on themselves, the belief of deserving abuse and suffering prevails. Patients of this kind are not quickly drawn to the therapist's empathy and warm welcome; instead, such attitudes can elicit a response of increased distrust, intense dysregulation, and hostility (Courtois & Ford, 2012). Dysregulation leads to chaotic and alternating mental states and withdrawal responses, and even the most experienced therapist can become the object of the patient's negative projections.

A patient coming from a family system based on abuse or neglect inevitably leads to the development of insecure dependence since secure or "healthy" attachment is either never constructed or destroyed. In the therapeutic relationship, the patient will, therefore, experience profound needs for dependence and attachment stemming from their life history, often described as intolerable and incessant. The therapist should seize the opportunity to support the patient regarding past sufferings and provide hope for the present, where there is help and secure attachment (Steele et al., 2001). When memories related to trauma are evoked, the patient feels a sense of threat, and manifestations of a fear state can be expected in the relationship with the therapist. The fear of being in the relationship can take the form of an exaggerated perception of potential abandonment, blame, feeling repulsive, and, consequently, "contaminating" the therapist. The patient may experience unbearable fear in the face of any minor disruption in the therapeutic relationship, such as a change in an appointment or a lack of response from the therapist. Like a child facing the mother's still face in the Still Face experiment, the patient struggles to make sense of that experience (Tronick & Gold, 2021). In response to this, the therapist should be able to provide a secure relationship through strong emotional attunement and commitment to repairing the relationship whenever an attachment interruption occurs (Dalenberg, 2000; Fosha, 2000). The therapist must restore emotional balance and tolerance in the face of the patient's push-pull tendencies, their dysregulation, and the risk of retraumatization resulting from attempts to elicit rejection from the therapist, sometimes with conscious intentions and sometimes not. As the patient gains security, insecure dependence is gradually replaced by a more secure dependence, and interdependence and autonomy emerge (Steele et al., 2001).

In light of this clinical case, it is possible to conclude that maintaining a good reflective competence and integration for the therapist in the relationship with the traumatized patient increases their

therapeutic self-efficacy and empathy. During moments of incredible difficulty this may help to preserve the authenticity of their relationship, and serves as a role-modeling for the patient who may finally feel worthy of expressing authentic parts of themselves. It also allows the therapist to rebuild the trust lacking in the patient's history, forming the foundation of a healthy, dependent relationship.

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# THE MEANINGFULNESS OF LIFE: ITS ASSESSMENT AND NATURE

**Shulamith Kreitler**

*School of Psychological Sciences, Tel-Aviv University (Israel)  
Center for Psychooncology Research, Sheba Medical Center (Israel)*

## Abstract

The paper deals with Meaningfulness of Life (MOL), presenting the definition of the construct, its theoretical and methodological background and its importance. The first part (sections 1.-5.) is devoted to describing a new tool for the assessment of MOL and the relation of its total score to different kinds of instructions, the overall evaluation of one's MOL, quality of life, personality traits, cognitive processes and health. Scores representing four categories of MOL were correlated with age, gender, occupation, and specific personality traits. The second part section 6) is devoted to describing a study of MOL in cancer patients focused on the issue whether MOL in cancer patients is a function of depression.

**Keywords:** *Meaningfulness of Life, assessment, personality, cognition, cancer.*

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## 1. Common approaches to the definition of the Meaningfulness of Life (MOL)

In recent years there has been a surge of interest in the concept of meaningfulness of life (MOL), which has come to be touted as a first-rate resource for overcoming the effects of traumas and for improving coping with the hardships of life (Antonovsky, 1987). The different approaches that have been proposed for accounting for the effects of the MOL emphasize positive attitudes, a sense of purposefulness and creativity, which are largely grounded in the theoretical framework of positive psychology. They have inspired most of the commonly used questionnaires for assessing MOL, such as the Life Regard Index (Battista & Almond, 1973), Meaning in Life Questionnaire (Steger et al., 2006), Sense of Coherence scale (Antonovsky, 1987), Purpose in Life test (Crumbaugh & Maholick, 1964), Purpose in Life Scale (Ryff, 1989). In many of the common scales the respondents are required to provide overall evaluations of their life's meaningfulness by means of items referring to qualities, such as the authenticity, richness, self-actualization, purpose, significance or fulfillment in one's life. The stated adjectives imply the conception of MOL as a positive construct, reflecting a rich, interesting, authentic, creative, energetic, goal-directed, adventurous, or satisfying life.

The underlying accompanying assumption is that having MOL is related to a good quality of life, mental health, physical health (Cohen, Bavishi, & Rozanski, 2016), contacts with people (Stilman et al., 2009), happiness and hope (Ryan & Deci, 2001). More specifically, MOL was anchored in finding value by acts of inventiveness and productivity, by sensory experiences or novel attitudes (Frankl, 1963); in self-control which allows individuals to feel that they can effectively manage their life so as to attain their goals (Vohs & Baumeister, 2004); in overcoming death anxiety (Becker, 1962; Quinto et al., 2022). Thus, the full picture implies that the presence of MOL is attended by happiness and satisfaction while its absence brings about depression, low quality of life, and despair.

## 2. Major shortcomings of the conventional approaches to MOL

There are several shortcomings of the mentioned approaches and scales which limit their applicability in psychology. First, the definitions and scales are all oriented towards the positive pole so that the difference between the positive goal and the manner or tools for attaining MOL are blurred. Secondly, they are unidimensional, such as authenticity, creativity etc. representing one kind of goal without concern for its constituents that may differ, e.g., creativity through art or gardening. Thirdly, they are grounded in one major theoretical framework which is positive psychology. Finally, there are no indications how to change or improve one's MOL if so desired.

### 3. A new tool for assessing MOL

The new described tool is based on the attempt to resolve some of the problems characterizing the conventional tools. It is based on a different theoretical framework which is cognition, specifically the meaning system which is the system of constructs and processes supplying the raw materials for cognitive acts or function. It includes basic kinds of contents that can be communicated in different forms (metaphors, analogies, examples), styles (positive or negative) and means of expression (verbal or nonverbal) (Kreitler, 2022a, 2022b). The meaning-based measure of MOL includes statements describing MOL in terms of the 22 basic content categories of the system of meaning. These categories refer to the following contents that have been defined on the basis of a large empirical body of data and may describe any subject or referent: Contextual allocation; range of inclusion (subgroups, parts); function, purpose or role; actions and potentialities of action (that the referent does or are done to or with it); manner of occurrence or operation; antecedents and causes; consequences and results; domain of application (subjects to which the referent refers or are affected by it); material; structure; state and possible changes in it; weight and mass; size and dimensionality; quantity and number; locational qualities; temporal qualities; possessions and belongingness; development; sensory qualities (characterizing the referent or perceived by it); feelings and emotions (evoked by the referent or experienced by it); judgments and evaluations (about the referent or held by the referent); cognitive acts and qualities (evoked by the referent or of the referent).

The MOL includes items presenting the title of the category and one or more examples, e.g., Actions, e.g., to be active, to do things. The subject is requested to respond to each item by checking one answer that describes the item's contribution to one's MOL (i.e., contributes a lot, contributes, contributes a little, does not contribute at all, scored 4-1, respectively).

There are two kinds of scores of the MOL. The first is a summary score, that represents the sum total of the responses to all the items.

A second kind of score is based on four categories of contents which represent the results of a factor analysis of the items of the MOL: (a) actional-dynamic aspects, including items such as to be active, to do things, to develop; (b) experiential-cognitive aspects, including items, such as to be able to think, to understand, to have many emotional experiences; (c) sensory-perceptual aspects, including items, such as to listen to music, to be exposed to many different colors and tastes, smells; (d) contextual aspects, including items, such as to feel that I belong to something or someone, to live in a place I like. The subject's responses to each item are summed and divided by the number of items in the category so that one gets a mean of the responses to each category.

### 4. Results of studies that are based on the total summary score

(a) *Instructions*. Comparing the scores in the summary score of the MOL questionnaire administered with the following different instructions: which of the following exist at present in your life, which of the following could exist in your life, which of the following should exist in your life, which of the following you would like or wish to exist in your life. All four instructions were administered in random sequence to 42 subjects (age 25-41, both genders). The results showed the following mean scores: 6.9, 10.4, 4., 7.8 ( $F=3.2$ ,  $p \leq .01$ ). The results indicate that the specific contents of the instruction matter. The mean of responses is lowest for the normative question, and highest for the desired, which is the optional in reality (Kreitler, 2016a).

(b) *Overall rating of life's meaningfulness*. Correlation between total summary score of MOL and the overall rating of one's meaningfulness of life. The subjects were 84 students in the social sciences, including both genders. They were administered the MOL and in addition were asked to rate the overall meaningfulness of their life on a scale 1-10 and to describe in words 'what is the state of the meaningfulness of your life'. The results were that the summary score and the rating were correlated positively and significantly ( $r=.71$ ,  $p \leq .001$ ). The finding indicates that the MOL is a valid measure of the meaningfulness of one's life. The verbal responses showed that ratings of 7-10 indicated that 'my life is very meaningful', while a rating of 2-4 was evaluated as 'my life is meaningless' (Kreitler, 2016a).

(c) *Quality of life*. The relation between the total summary score of MOL and quality of life. This question was examined in a study with healthy adults aged 30-56 (Kreitler, 2016b). Quality of life was assessed by The Multidimensional Quality of Life Inventory for Adults (Kreitler & Kreitler, 2006). The score of MOL was related positively to the score of quality of life – the total score and the subscales of emotional state, functional state and physical state. The highest correlation was with the emotional state.

(d) *Personality traits*. The relation between the total summary of the MOL and personality traits. The sample consisted of 88 students aged 21-32, of both genders, who were administered the MOL and the NEO-PI. Correlation coefficients were computed between the summative total score of MOL and each of the Big Five personality tendencies. The only significant correlation was obtained for the score of MOL

with Openness. (A more detailed analysis of scores in the four different categories of MOL, showed significant correlations between Extraversion and the dynamic-actional category [ $r=.42$ ] and between Agreeableness and the sensory-perceptual category [ $r=.46$ ] (See also 5) (Kreitler, 2018b).

(e) *Cognition*. The relation between the total summary score of the MOL and the cognitive profile. The cognitive profile was assessed by the Meaning Test, which requests the subjects to communicate the meaning of 11 familiar, such as street and feeling (Kreitler, 2022a). The subjects (69 undergraduates) were administered the Meaning Test and the MOL. Analyzing the results showed that the contents of the items in the MOL selected as contributing or contributing a lot to one's MOL corresponded in 71-74% to the content of the variables used by the subject in communicating meanings of words in the Meaning Test. For example, if an item referring to Possessions was selected as contributing a lot to one's meaningfulness of life, the variable denoting possessions was used with high frequency in one's Meaning Test in communicating meanings in general. This indicates that the MOL reflects one's general meaning assignment tendencies (Kreitler, 2016c, 2017).

A second set of important findings refers to the meaning profile of the subjects which represents their tendencies to use various cognitive processes. Analyzing the relation between the MOL and the meaning profile showed that high scorers on MOL used meaning communications showing focus on reality; preferences for interpersonally-shared meanings; emphasis on actional-dynamic aspects (doing things), complemented by references to experiential-cognitive and sensory aspects; focus on goals; tending not to shift too far from the major context; being orderly and systematic; characterized by complex thinking (Kreitler, 2014, 2016c).

(f) *Health*. The relation between the total score of the MOL and physical health. The relation was studied in a sample of 52 adult volunteers (age 24-60) who were administered the MOL and a self-report questionnaire of health (Schat, Kelloway, & Desmarais, 2005). The correlation between the two variables was  $r=.42$  ( $p\leq.01$ ) (Kreitler, 2017).

## 5. Results of the studies that are based on the four content categories

Table 1. Means of the four MOL categories in different groups.

| Group          | Age   | No. | Gender            | Dynamic-actional category | Experiential-cognitive category | Sensory-perceptual | Contextual category | Sig        |
|----------------|-------|-----|-------------------|---------------------------|---------------------------------|--------------------|---------------------|------------|
| Children       | 8-12  | 50  | 35 girls, 15 boys | 4.1                       | 1.9                             | 3.5                | 3.6                 | ns         |
| Middle aged    | 25-40 | 55  | 36 women, 19 men  | 7.2                       | 3.9                             | 3.2                | 5.4                 | $p\leq.01$ |
| Elderly        | 65-85 | 52  | 26 women, 26 men  | 5.4                       | 6.2                             | 5.8                | 6.7                 | ns         |
| Gender:        | 35-60 | 30  | Women 30          | 6.2                       | 5.8                             | 4.3                | 2.2                 | $p\leq.01$ |
| Gender:        | 35-60 | 30  | Men 30            | 6.7                       | 3.1                             | 2.2                | 7.5                 | $p\leq.01$ |
| Occupation     |       |     |                   |                           |                                 |                    |                     |            |
| Tourist guides | 42-50 | 30  | 25 men, 5 women   | 7.6                       | 1.5                             | 5.8                | 3.9                 | $p\leq.01$ |
| Artists        | 45-63 | 25  | 7 men, 18 women   | 3.5                       | 6.9                             | 7.3                | 2.4                 | $p\leq.01$ |

(a) *Age*: The effects of age on the MOL responses show that in younger age an in the elderly there is representation of responses in all four categories, although the scores are higher in the elderly than in the children (Table 1). In these two groups there seems to be no preference for specific categories. In the middle-aged adults the pattern is different: there seems to be a preference for two categories (i.e., dynamic-actional and contextual) (Kreitler, 2016a, 2017).

(b) *Gender*: Women were found to score higher on the categories of dynamic-actional and experiential-cognitive while men scored higher on the categories of dynamic-actional and contextual (Kreitler, 2017, 2022a).

(c) *Occupation*: The subjects were recruited unanimously on the social media. They were administered the MOL and a brief background questionnaire about their gender, age and occupation. The results show that MOL is affected by occupation: tourist guides score high on the categories of dynamic-actional and sensory-perceptual while artists score high on the categories of experiential-cognitive and sensory-perceptual aspects. The categories with high scores correspond to the aspects that the different occupations call for (Kreitler, 2022b).

## 6. The study about MOL and cancer patients

### 6.1. Objective

There are studies indicating on the one hand that cancer patients tend to suffer from low meaning of life and that higher meaning of life affects them beneficially (Krok & Telka, 2018). But the empirical results concerning the level of meaningfulness of life in cancer are not completely univocal (Quino et al., 2018). In addition, depression which is prevalent in cancer patients (Spiegel & Giese-Davis, 2003) is considered as related to low meaningfulness of life (Sun et al., 2022), but again the support of the empirical data is not strong (Kleftaras & Psarra, 2012). The purpose of the study was to examine whether cancer patients score low on MOL and whether depression affects negatively their MOL score (Kreitler, 2018a, 2019).

### 6.2. Method

Cancer patients (n=75) in the age range 48 to 76 years and a control group (n=40) of individuals with mood disorders tending to dysthymia, in the same age range. The subjects were recruited for the study through clinics and the social media. They were administered the MOL and the Zung Self-Rating Depression Scale (1965).

### 6.3. Results

The cancer patients and controls were divided into two groups high and low in depression, in line with the mean on the Zung scale. In the cancer group the mean was 57.2, in the control it was 50.1 (in both groups the mean denoted the difference between the non-depressed and the mildly depressed). The MOL scores in high and low scorers on Depression were in the cancer patients 6.1 (Sd=1.6) and 5.6 (Sd=0.8); in the control 7.3 (Sd=2.4), 6.7(Sd=1.9). The differences in MOL between high and low scorers in depression in cancer patients and control were not significant. However, in each of the subgroups the cancer patients had significantly lower scores (in both cases of high and low scorers in depression  $p \leq .01$ ).

### 6.4. Conclusion

The findings indicate that depression does not play a critical role in regard to MOL, but that cancer patients tend to score lower on MOL than the controls with mood disorders, regardless of their scores on depression. It is possible that the findings in regard to depression are not significant because the levels of depression represented in this study were relatively low. Thus, cancer as a disease, or psychological and physiological factors associated with it, rather than depression, seem to be the cause for lower MOL in cancer patients. The reason for this may be the preoccupation with death that is conventionally evoked by cancer. Death has been found by previous investigators as a major propellant factor for experiencing meaninglessness of existence and for an intensified search for meaning.

## 7. Summary notes

Meaningfulness of life has been shown to be amenable to assessment by a valid, simple, flexible tool, enabling different kinds of scores in terms of a total score and specific categories. It is widely accessible, reflecting differences in terms of age, gender, and occupation and is based on a good theoretical background of the theory of meaning. Meaningfulness of life emerges as a potentially basic factor in psychology, playing an important role in cognition, personality and coping with disease, enabling insights into the psychological dynamics of human beings.

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# THE PHQ-9 AND GAD-7 DEPRESSIVE AND ANXIETY MULTIPURPOSE MEASURES: EXPLORING GENDER DIFFERENCES AND CLINICAL UTILITY REGARDING PSYCHOLOGICAL FLEXIBILITY

Danie A. Beaulieu, Abigail Daley, Lisa A. Best, & Cecile J. Proctor

*Department of Psychology, University of New Brunswick (Canada)*

## Abstract

**Background:** The rising global prevalence of depressive and anxiety symptoms underscores the urgent need to update and refine the tools used for screening, diagnosing, and monitoring these conditions. The Patient Health Questionnaire (PHQ-9; Kroenke et al., 2001) includes nine items corresponding to each symptom of major depressive disorder as outlined in the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV). The General Anxiety Disorder 7-item (GAD-7; Spitzer et al., 2006) includes seven items, with three addressing the core criteria A and B from the DSM-IV and the remaining four derived from existing anxiety scales. To further enhance the clinical understanding of these disorders, the examination of specific depressive and anxiety symptoms in relation to pillars of psychological flexibility, namely openness to experience, behavioural awareness, and valued action (Francis et al., 2016), was undertaken. This approach should strengthen intervention planning by providing deeper insights into psychological flexibility as a protective factor that could alleviate some symptoms. **Method:** In total, 1,143 participants (291 men, 830 women, and 22 with other gender identities) completed an online questionnaire package that included the PHQ-9, GAD-7, and CompACT. Cut-off scores for the PHQ-9 and GAD-7 were used to categorize participants. **Results:** Chi-square tests of independence indicated that more men than women (36.5% vs. 27.9%) reported minimal depressive symptoms; more women reported mild depressive symptoms than men (28.5% vs. 22.2%). Similarly, a higher proportion of men reported minimal anxiety symptoms (41.4% vs. 27.4%), and more women experienced severe anxiety symptoms (20.7% vs. 7.6%). Two one-way ANOVAs revealed disproportionate levels of psychological flexibility across different PHQ-9 severity levels; interestingly, there were no differences according to the GAD-7 categorization. Furthermore, when controlling for gender in multiple hierarchical regression analyses, depressive and anxiety symptoms emerged as significant predictors of psychological flexibility pillars. Specifically, depressive symptoms related to changes in weight and appetite, fatigue, feelings of worthlessness or guilt, and anxiety symptoms like excessive worry, fear of anticipated events, and irritability were especially influential. **Conclusion:** Various depressive and anxiety symptoms demonstrated predictive relationships with different pillars of psychological flexibility, highlighting the nuanced associations between specific symptoms and aspects of adaptive coping strategies. Interventions that focus on enhancing psychological flexibility pillars (e.g., acceptance and commitment therapy) should be able to target specific depressive and anxiety symptoms.

**Keywords:** *Depressive symptoms, anxiety symptoms, psychological flexibility, gender.*

## 1. Introduction

In recent years, there has been a notable rise in the global prevalence of major depressive disorder, which increased by 27.6%, and anxiety disorders, which increased by 25.6% (World Health Organization, 2022). These elevations underscore the urgent need to update and refine the tools used for screening, diagnosing, and monitoring these conditions. The Patient Health Questionnaire (PHQ-9; Kroenke et al., 2001) encompasses nine items corresponding to each of the symptoms of major depressive disorder that are outlined in the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV). The General Anxiety Disorder 7-item (GAD-7; Spitzer et al., 2006) includes seven items—three items address core criteria A and B from the DSM-IV, and the four items are derived from existing anxiety scales. Both the PHQ-9 and GAD-7 include cut-off scores to classify respondents based on the assessment of their symptom severity. For the PHQ-9, total scores between 0–4 indicate minimal depressive symptoms, 5–9 indicate mild, 10–14 moderate, 15–19 moderately severe, and 20–27 are of severe severity (Kroenke et al.,



2001). For the GAD-7, symptom severity score categorization is similar (0–4 = minimal, 5–9 = mild, and 10–14 = moderate), with scores equal to or greater than 15 indicative of severe anxiety symptoms. Although these categorization schemes aid in clinical communications and intervention planning, several limitations emerge, including loss of heterogeneity of clinical populations and oversimplification of the complexity of mental disorder symptoms (Stein et al., 2013).

To further enhance the clinical understanding of these disorders, it is essential to examine other factors beyond the predisposing, precipitating, and perpetuating issues related to the development and maintenance of depressive and anxiety symptoms (Ellis et al., 2017). Minimal research has examined these measures in relation to psychological flexibility despite the positive impact of this concept on well-being (Masuda & Tulley, 2012). Psychological flexibility is a concept that involves understanding and evaluating one's current state and choosing to apply oneself in a manner that is befitting of one's goals and values (Doorley et al., 2020; Hayes et al., 2011). Acceptance and Commitment Therapy (ACT) is a therapeutic approach intending to increase psychological flexibility in clinical populations through six core skills: 1) defusion (distaning an individual from their internal experiences); 2) experiential avoidance and acceptance (accepting internal experiences as part of the human experience rather than trying to avoid them); 3) contacting the present moment (fully engaging in the present moment); 4) self-as-context (perceiving oneself beyond the object of inner experiences); 5) values (personal needs and desires); and 6) committed action (choosing behaviours leading to a fulfilled life; Hayes et al., 2011). Interventions that focus on enhancing psychological flexibility are associated with lower rates of anxiety (Masuda & Tulley, 2012) and depression (Fonseca et al., 2020). Taken together, understanding how the pillars of psychological flexibility are related to symptom severity measured by the PH-9 and GAD-7 may inform the development of comprehensive treatment approaches and improved overall well-being among individuals struggling with these conditions. Thus, our objective was to investigate the relationship between the severity of depressive and anxiety symptoms and distinct aspects of psychological flexibility.

## 2. Methods

### 2.1. Participants

Given the data sample is part of a larger research project, participants were recruited from May 2021 until December 2023. In total, 1,143 participants (291 men, 830 women, and 22 with other gender identities) completed a questionnaire package online. Overall, 29.7% of participants reported minimal depressive symptoms, 26.6% had mild symptoms, 23.7% had moderate symptoms, 12.2% had moderately severe symptoms, and 7.0% had severe depressive symptoms. Moreover, 30.6% reported minimal anxiety symptoms, 27.4% had mild, 24.1% had moderate, and 17.7% had severe anxiety symptoms. Overall, 42.9% of participants met the cut-off score warranting further evaluation for a potential diagnosis of a depressive disorder, while 41.8% met the criteria for anxiety disorder assessment.

### 2.2. Measures

The PHQ-9 (Spitzer et al., 1999) operationalizes depressive symptoms and severity using nine items based on a 4-point Likert scale ranging from 0 (*not at all*) to 3 (*nearly every day*). A score higher than 10 indicates moderate to severe depression severity, which may warrant further clinical intervention. This cut-off score has shown a sensitivity and specificity of both 88% for major depressive disorder (Kroenke et al., 2001). The scale indicated good internal consistency ( $\alpha = .89$ ).

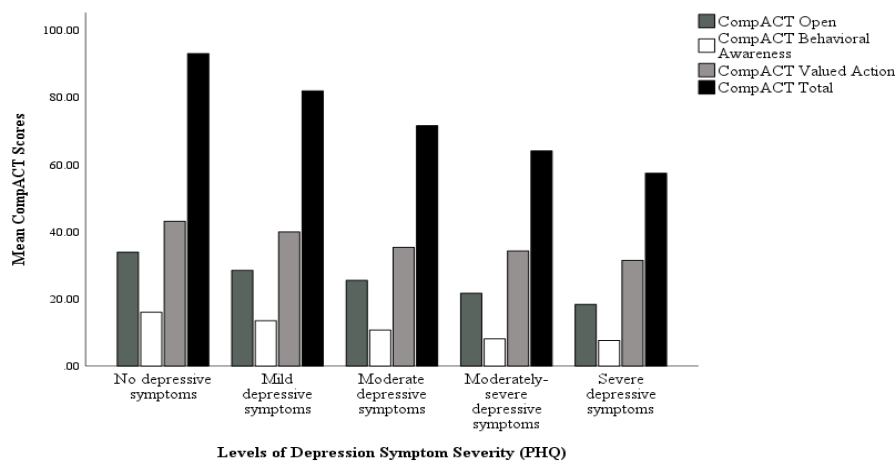
The GAD-7 (Spitzer et al., 2006) operationalizes anxiety symptoms and severity with seven items using a 4-point Likert scale ranging from 0 (*not at all*) to 3 (*nearly every day*). Scores greater than 10 suggest the presence of a clinically significant condition. This cut-off score has shown a sensitivity of 89% and specificity of 82% for generalized anxiety disorder (Spitzer et al., 2006). The GAD-7 has good internal consistency ( $\alpha = .93$ ).

The Comprehensive Assessment of Acceptance and Commitment Therapy Processes (CompACT; Francis et al., 2016) assesses psychological flexibility with 23 items through three ACT processes: Openness to Experience (acceptance and defusion), Behavioural Awareness (present-moment awareness and self-as-context), and Valued Action (values and committed actions). The 7-point Likert scale ranges from 1 (*strongly disagree*) to 7 (*strongly agree*), with higher scores indicating greater psychological flexibility. The CompACT total and subscales scores showed good internal consistency: total scale ( $\alpha = .86$ ), Openness to Experience ( $\alpha = .77$ ), Behavioural Awareness ( $\alpha = .85$ ), and Valued Action ( $\alpha = .89$ ).

### 3. Results

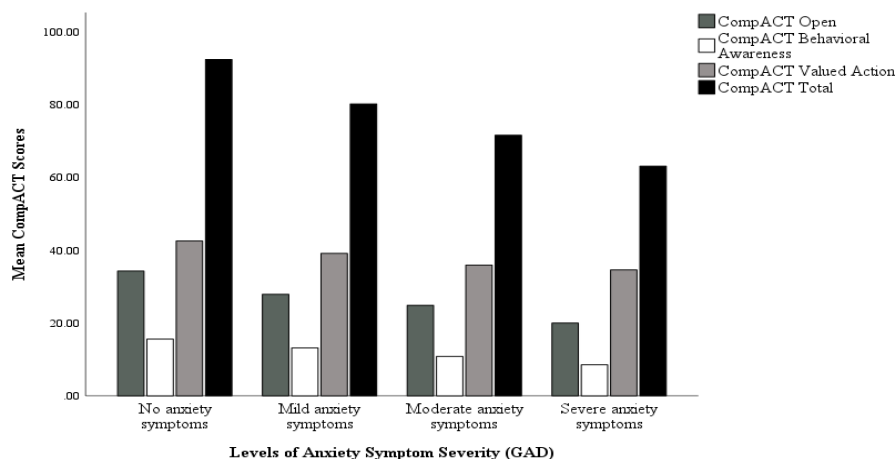
Two one-way analyses of variance (ANOVA) were performed to compare the differences between PHQ-9 and GAD-7 symptom severity categories in terms of pillars of psychological flexibility. For the PHQ-9, significant Welch's *F*s confirmed large differences among severity categories relative to pillars of psychological flexibility: Openness to Experience,  $F(4,216.55) = 80.90, p < .001, \eta^2 = .25$ , Behavioural Awareness,  $F(4,623.22) = 83.62, p < .001, \eta^2 = .23$ , and Valued Action,  $F(4,356.44) = 43.99, p < .001, \eta^2 = .14$ . Given a significant Levene's test confirmed unequal population variances, Games-Howell posthoc analyses were conducted to understand variation between symptom severity categories (see Figure 1). Across each pillar of psychological flexibility, the differences between moderately severe and severe depressive symptoms were non-significant: Openness to Experience ( $p = .08$ ), Behavioural Awareness ( $p = .91$ ), Valued Action ( $p = .99$ ), and total score of psychological flexibility ( $p = .07$ ). Interestingly, for Valued Action, there were no significant differences between moderate and moderately severe ( $p = .58$ ) and severe depressive symptoms ( $p = .54$ ). All other comparisons revealed significant differences at  $p < .001$  level across psychological flexibility pillars.

Figure 1. Means of PHQ-9 Symptom Severity Scores Based on Psychological Flexibility Levels.



A second one-way ANOVA compared differences in variance of the GAD-7 symptom severity categories across the pillars of psychological flexibility. Welch's *F*s revealed significant differences between symptoms category according to their levels of Openness to Experience,  $F(3,375.77) = 107.58, p < .001, \eta^2 = .27$ , Behavioural Awareness,  $F(3,502.89) = 73.78, p < .001, \eta^2 = .16$ , and Valued Action,  $F(3,578.91) = 32.53, p < .001, \eta^2 = .08$ . Games-Howell posthoc analyses revealed statistically significant differences across all severity categories (minimal, mild, moderate and severe) of the GAD-7 across Openness to Experience, Behavioral Awareness, and the Total scores of psychological flexibility at the  $p < .001$  level for each comparison; however, participants with moderate and severe GAD-7 symptoms had similar Valued Action scores,  $p = .46$  (see Figure 2).

Figure 2. Means of GAD-7 Symptom Severity Scores Based on Psychological Flexibility Levels.



Chi-square tests of independence were conducted to compare the prevalence rates of men and women in each PHQ-9 and GAD-7 symptom severity category. There was a significant association between gender and PHQ-9 symptom severity category,  $\chi^2(4) = 10.43, p = .034$ . To compare proportions across genders, a series of  $z$ -tests with adjusted  $p$ -values using the Bonferroni correction ( $p < .05$ ) indicated there were significantly more men than women with minimal (36.5% vs. 27.9%) and mild (28.5% vs. 22.2%) symptoms of depression. Moreover, there was a significant association between gender and GAD-7 symptom severity category,  $\chi^2(3) = 35.14, p < .001$ . There were significantly more men than women with minimal (41.4% vs. 27.4%) anxiety symptoms, whereas the opposite was true for severe anxiety symptoms (7.6% vs. 20.7%).

To determine if gender and specific symptoms from the PHQ-9 or GAD-7 predicted pillars of psychological flexibility, six hierarchical multiple regression analyses were conducted, with the CompACT subscales measuring Openness to Experience, Behavioural Awareness, and Valued Action as outcome variables. The overall model using gender and PHQ-9 to predict Openness to Experience was statistically significant,  $F(10, 835) = 31.14, p < .001, R^2 = .27$ , as well as Behavioural Awareness,  $F(10, 983) = 29.80, p < .001, R^2 = .23$ , and Valued Action  $F(10, 1120) = 21.97, p < .001, R^2 = .17$  (see Table 1). The overall model of gender and GAD-7 symptoms predicting Openness to Experience was statistically significant,  $F(8, 835) = 40.63, p < .001, R^2 = .28$ , as well as Behavioural Awareness,  $F(8, 983) = 30.47, p < .001, R^2 = .20$ , and Valued Action,  $F(8, 1120) = 14.53, p < .001, R^2 = .09$ .

Table 1. Multiple Hierarchical Regression Models Predicting Psychological Flexibility Pillars.

| PHQ-9 items                       | Openness to Experience |        | Behavioural Awareness |        | Valued Action |        |
|-----------------------------------|------------------------|--------|-----------------------|--------|---------------|--------|
|                                   | $\beta$                | $p$    | $\beta$               | $p$    | $\beta$       | $p$    |
| <b>Step 1</b>                     |                        |        |                       |        |               |        |
| Gender                            | - 0.04                 | .436   | - 0.00                | .924   | 0.09          | .003   |
| <b>Step 2</b>                     |                        |        |                       |        |               |        |
| Gender                            | - 0.00                 | .936   | 0.02                  | .557   | 0.11          | < .001 |
| Little interest/pleasure          | - 0.05                 | .224   | - 0.09                | .019   | - 0.05        | .168   |
| Feeling down/depressed            | - 0.15                 | .002   | - 0.11                | .012   | - 0.06        | .179   |
| Poor sleep or oversleeping        | - 0.13                 | .002   | - 0.07                | .049   | 0.08          | .032   |
| Tiredness/low energy              | - 0.01                 | .820   | 0.02                  | .616   | - 0.05        | .232   |
| Poor appetite or overeating       | 0.02                   | .554   | 0.01                  | .892   | - 0.07        | .053   |
| Feeling bad about self            | - 0.23                 | < .001 | - 0.09                | .032   | - 0.20        | < .001 |
| Trouble concentrating             | - 0.09                 | .034   | - 0.15                | < .001 | - 0.08        | .039   |
| Psychomotor agitation/retardation | 0.00                   | .957   | - 0.11                | .003   | - 0.02        | .552   |
| Suicidal ideation/self-harm       | - 0.02                 | .546   | - 0.04                | .278   | - 0.02        | .668   |
| GAD-7 items                       | Openness to Experience |        | Behavioural Awareness |        | Valued Action |        |
|                                   | $\beta$                | $p$    | $\beta$               | $p$    | $\beta$       | $p$    |
| <b>Step 1</b>                     |                        |        |                       |        |               |        |
| Gender                            | - 0.03                 | .436   | - 0.00                | .924   | 0.09          | .003   |
| <b>Step 2</b>                     |                        |        |                       |        |               |        |
| Gender                            | 0.06                   | .046   | 0.06                  | .038   | 0.14          | < .001 |
| Feeling nervous/anxious           | - 0.05                 | .327   | 0.03                  | .548   | - 0.05        | .336   |
| Uncontrollable worry              | - 0.09                 | .133   | - 0.05                | .361   | - 0.03        | .609   |
| Worry about different things      | - 0.18                 | .002   | - 0.01                | .847   | - 0.16        | .007   |
| Trouble relaxing                  | - 0.06                 | .193   | - 0.10                | .039   | 0.02          | .728   |
| Restlessness                      | - 0.07                 | .103   | - 0.15                | < .001 | - 0.08        | .057   |
| Easily annoyed/irritable          | - 0.07                 | .090   | - 0.08                | .049   | - 0.11        | .008   |
| Afraid something awful happening  | - 0.12                 | .009   | - 0.18                | < .001 | - 0.04        | .391   |

#### 4. Discussion

Comparing levels of psychological flexibility across varying degrees of depressive and anxiety symptom severity may provide important information about how symptom severity is associated with general psychological wellness. The current results revealed no significant differences between the moderately severe and severe PHQ-9 across levels of psychological flexibility. Based on cut-off scores established more than two decades ago, we found no distinctions between symptoms of moderately severe and severe depression. Additionally, there were no significant differences between the moderate and severe categories of the GAD-7 for the valued action pillar of psychological flexibility. This suggests that for this dimension of psychological flexibility, the severity of the symptoms continues to negatively impact one's ability to act in line with their values to a particular level. Based on the current findings, it seems plausible that categorizing the severity of depressive symptoms is only somewhat practical. The results indicate no statistically significant differences between the highest levels of severity for both scales, suggesting a

ceiling effect and the need to re-evaluate the symptom severity categories. Moreover, depressive symptoms related to changes in weight and appetite, fatigue or loss of energy, and feelings of worthlessness or inappropriate guilt were significant predictors of all three pillars of psychological flexibility. Anxiety symptoms associated with excessive worry about various things, fear of future events, and irritability were the most common symptoms predicting the pillars of psychological flexibility. In summary, various depressive and anxiety symptoms demonstrated predictive relationships with different pillars of psychological flexibility, highlighting the nuanced associations between specific symptoms and aspects of adaptive coping strategies.

## 5. Conclusions

Future research should investigate the research validity and clinical utility of merging the moderately severe and severe depressive symptoms categories into one. The present results suggest that combining these severity categories would not make a significant difference based on levels of PF. Nevertheless, further research is necessary to substantiate this assertion.

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## QUALITY OF LIFE IN AGING: A SURVEY FOR CO-LIVING

**Marie J. Myers**

*Faculty of Education, Queen's University (Canada)*

### Abstract

Aging populations are faced with increasing challenges. The idea is to live well and be serene throughout retirement. Financial constraints add to the burden in today's society. Post-COVID additional stresses have been identified. In our study we aimed at uncovering characteristics for the creation of a survey to identify seniors with suitable characteristics for co-living arrangements. In this research we look at retired independent women living in the government subsidized rental co-living building in Paris in order to establish desirable criteria to adopt or adapt the formula in Canada. At present there are no such arrangements that have lasted, despite some examples of friends living together. As well, retirement homes are costly and often do not meet the needs of more independent people. Living alone in aging has also become fraught with issues. Studies have shown that people living together while also keeping independent enjoy longer healthier lives. For this qualitative study, the first step was to have members of a successful co-living model make regular journal entries for six months so as to identify desirable traits and attitudes through their ways of being and doing. The journals were analyzed along with data found in the public domain on the group, including the House Charter each member had to sign and abide by. Identified categories were grouped into themes. Following that we searched established well-being surveys to tease out corresponding questions to the items we had uncovered. We then created a questionnaire with a 5-point Likert. This questionnaire is presented under a format with radio buttons. The final questionnaire includes 33 theme sections with various numbers of questions under each section going from one to 17 for autonomy. The autonomy section as the most important one is further subdivided into four sections. The themes will be explored and discussed in light of our findings and their relevance. Further steps will be presented as well as suggestions for further research.

**Keywords:** *Themes for well-being, question items, seniors co-housing.*

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### 1. Context

Living with others as a formula for a more sustainable way of life is garnering increasing interest. Many projects of a more cooperative nature have been reviewed in the document entitled Europe ICE-11 describing many successful formulas that show a renewed interest on co-housing and commitment by a number of actors including architects. This included creating more user-friendly spaces. Many of these European projects are inter-generational, however in some cases the young people had left the co-housing arrangement. Of almost 500 projects been investigated, very few are dedicated to aging populations, only two of them were expended upon, one being the Babayagas House in Paris, the object of the present study, which was highlighted and received much praise. Aging populations are faced with increasing challenges. The idea is to live well and be serene throughout retirement. As our societies are increasingly concerned with sustainable living, we see that aging populations are often overlooked. Yet there is going to be an increase of these populations. Groups of seniors in North America, just like the groups in Europe are also getting together in order to create co-living spaces. Few have lasted or included people with more moderate incomes.

In Canada new attempts are being made but financial constraints add to the burden. In addition, retirement homes are costly, usually over \$3,000 per month and often do not meet the needs of more independent people. With the additional issues during the flu season, especially recently, seniors find themselves even more isolated and vulnerable.

During the pandemic in the Canadian context, some grave concerns were raised around retirement homes. For instance, by not allowing visitors to the aging, who already feel lonely, they were further cut-off from needed family and social contacts. Living close together in their common space increased major health issues with higher percentages of death. In addition, when fires occurred there

were additional deaths due to fact that the seniors had to be rescued from individual rooms during the quarantine.

Living alone in aging has also become fraught with issues. However, studies have shown that people living together while also keeping independent enjoy longer healthier lives.

The idea of each having their own separate small apartment yet working together as a collective supporting one another as in the Babayagas House has much appeal. They see to their own governance, remain active and develop friendships.

## 2. The research

This study aims at providing a questionnaire to ensure more reliable characteristics for people to be able to live together in the long turn in Canada. The Babayagas House in Paris has received many accolades and was identified as a good source for our research.

To carry this out we first investigated retired independent women living in this government subsidized rental co-living building in Paris, in order to establish desirable criteria to adopt or adapt the formula in Canada. At present there are no such arrangements that have lasted, despite some examples of friends living together. Co-living as a choice for independent retired women. The model arrived at in Paris gives hope for social transformations.

The method used is qualitative in nature (Creswell, 2002; Creswell & Poth, 2018; Lincoln & Guba, 1985; Patton, 1990, 2015). The first step was to have members of a successful co-living model make regular journal entries so as to identify desirable traits and attitudes through their ways of being and doing. We retrieved information from five journals with mostly daily entries over several months. Other documents were also analyzed to provide for triangulation, there were interviews by journalists as well as other magazine and newspaper articles and including the list of responsibilities from the House Charter each member was expected to sign and commit to.

First, through the analysis of personal journals, we aimed at uncovering characteristics for the creation of a survey to identify seniors who would best qualify for co-living arrangements.

The participants were tenants in the Babayaga House in Montreuil. The journals were analyzed along with data found in the public domain on the group as mentioned just above. Identified categories were grouped into themes.

In parallel we searched the literature for information on questionnaires (Kirkwood & Cooper, 2014; Robitschek, 1990; Watson & Clark, 1988).

We then searched known well-being questionnaires to tease out corresponding questions to the items we had uncovered and grouped into themes. This enabled to avoid field testing the questions and in addition we already were ensured that these items had worked in widely used well-established questionnaires. Any repetition was eliminated and, as well, themes were regrouped in order to reduce the number of questions. We reduced the questions to the lowest possible number while still staying true to our objective.

Using all the available information we had arrived at, we then created a questionnaire with a 5-point Likert scale presented under a format with radio buttons. The final questionnaire includes 33 theme sections with various numbers of questions under each section going for example from one to 17 for autonomy. The autonomy section as the most important one is further subdivided into four sections.

After submitting the questionnaire to present residents in Canadian retirement homes we were advised that it was too lengthy. As a result, we trimmed it down further and we now have two versions, the longer version for administrators to interview prospective co-housing members and a questionnaire to be self-administered and scaled down for the aging, with only 78 questions to make it more user-friendly. In addition, in the Canadian context, the retirement home residents were hesitant about the addition of the questions related to activism and advocacy, which is one of the important features that helps create community in the French housing project.

## 3. Findings

The themes were explored and discussed in light of our findings and their relevance.

We gleaned some general information that could facilitate the situational context such as presented below. With each identified topic we associated a question or a series of questions in order to uncover characteristics that were deemed desirable in the selection of future participative co-housing partners.

So far, as a result, the initial tentative inventory includes 24 items with 167 questions. These items include accountability, autonomy, collaboration, emotional intelligence, engagement, fairness, feminism, forgiveness, good listener, gratitude, honesty, kindness, love of learning, modesty, openness,

persistence, pragmatic politeness, positive emotions, positive relationships, positive thinking, satisfaction, self-acceptance, sense of humour and sociability.

These items above appeared to be of great relevance in the hope of circumventing half-truths as identified from among co-housing dwellers. From the above, the items referring to qualities, coded as identified in journal entries, then placed in categories before grouping them into themes, were matched to relevant questions in existing well-being questionnaires.

We further developed questions related more specifically to general items gleaned from the Babayaga House Charter and information available in the public domain, as for instance resulting from interviews. There were entries in the journals of conversations about general items as well, that were added to the questionnaire as they have relevance. The difference between these items and the qualities uncovered as mentioned above is the fact that they are not connected to well-being and therefore simple questions we created would deem to be acceptable without further research.

These questions were more of a practical nature. First as regarding the ideal number of people to share housing, considering that there are 25 units in the Babayagas House, by stating 11 as the number, this co-living member was thinking of people who share a sufficient number of affinities. As regards another opinion on this topic, “more than 12 but fewer than 22”, seems to refer in particular to that person’s experience. Indeed 22 units are dedicated to the women but four are occupied for equity reasons by a young family, a handicapped person and men. This co-living member is obviously not happy about the additional dwellers in the building who are not part of the Babayagas group, not sharing responsibilities.

The questionnaire items mostly based on the House Charter have to do with more practical questions and these too seemed to constitute bones of contention. Overall, there were 33 sections identified under themes with a number of questions for each.

In terms of issues, first, there appeared to be conflicts due to very diverging backgrounds. The criteria were low income in aging due to a variety of factors at the present time, with no bearing on previous socio-economic status nor background. So, in fact the previous socio-economic status appears to impact the behaviors and differences take away from cohesion. Hence, we thought that getting a general background on prospective co-housing residents might be useful, especially because a lack of commitment to the community was identified in a number of cases.

Another concern was raised about men not allowed to stay as residents with the women. According to the living arrangements for the Babayaga women specifically, men cannot live in the Babayagas house, they cannot move in, only visit for short stays. They also often are invited guests during their monthly dinners. The Babayagas women are often criticized because of their feminism which is however one of the basic principles of their living arrangements corresponding to a sort of 'sisterhood'.

Self-space management as an entry seemed to be important as they all have their own space varying from very small studios to more specious ones with only three models available. Each however has a balcony which also allows cultivation. Plants on balconies included mostly flowers according to our findings, so it seemed appropriate to question notions on space management. For the abridged version of the questionnaire, all 33 sections were maintained, and any questions that appeared somewhat superfluous were eliminated, trimming down the questions to 73 by removing, good listener, modesty, sense of humour and sociability and questions covering similar contents. As well sections were added namely cooperative living, social gathering, interest in activism, activism opportunities, participation in decision making, common activity and knowledge sharing, commitment to refuse prejudice and discrimination, openness to city surroundings, feminism and gender equality, religion diversity and non-discrimination, promoting first aid and knowledge, visionary, and adherence to rules.

#### **4. Discussion and conclusion**

The idea was to identify characteristics to permit harmonious co-living arrangements for retired independent women to alleviate the impact of the dire circumstances in which some of them find themselves, and this by using a selection questionnaire also keeping in mind the impact of the pandemic on the women and we managed to arrive at a very interesting all-encompassing list, plus a shorter version of the questionnaire for more practical reasons, allowing for self-identification.

The context is participative co-living in aging. In most cases communication played out according to Luhmann's (1995) thinking that negotiations oscillate between agreement and opposition. According to the researcher, the process moves on with constant changes between asymmetry and remaking symmetrical (p. 125). Luhmann's (1995) theory about systems complexity points to unavoidable reciprocal adaptation of organisms to each other, makes our questions for co-living all the more relevant. This appears to be so in the case of the groups of women coming together. There are however some members in the Babayagas house who do not partake and hence lack the contact in a

participative way in the co-housing model. Hence, offering a questionnaire for the selection of prospective members could provide a welcomed solution.

Overall, the co-housing collective can be likened to a community of practice (Lave & Wenger, 1991; Wenger, 1998).

The backgrounds of the women are very diverse because although they lived in France for a long time their cultures of origin are not necessarily French, so it was reasonable to take into account information on their attitude toward participation. It is possible to reach common ground because knowledge and cultural aspects allow for reflective co-orientation (Luhmann, 1995; Olson, 2003). Therefore, by living together and sharing activities and interacting regularly the group members can achieve the desirable outcome.

Luhmann also mentions the notion of attempts at aligning paths and it is clear that a number of the co-housing members put effort into doing so and find joy in the realization that they develop friendships. However, these feelings are also somewhat mixed as for example the fact that some of the women do not contribute to the maintenance of the garden but enjoy reaping its fruit is frustrating these who put effort into gardening. Hence questioning their willingness to participate and their propensity for sharing seems relevant.

As far as the notions of cooperation, or competition are concerned, regarding the common spaces like in their garden, cooperation left much to be desired. As identified, it appeared that only a handful of people actually carried out the work while everyone liked to reap the benefits. Overall, however, there was an obvious coming together of minds (Olson, 2003).

Regular meeting of the group enabled them to reach conclusions together and make the best decisions as regards group interests. These decisions were not always well received and having like-minded co-housing partners would alleviate some difficulties related to consensual decision making which is a feature in the House Charter.

Concerning exchanging knowledge and learning from one another we have uncovered this to be one of the most successful aspects among co-housing members. It was observed how they helped each other with special i-phone features. They conducted workshops. Encouraged critical reviews of films followed by discussions, providing a stimulating intellectual climate. They invited journalists and students to lunch. This was cited in the magazine Elle (2023).

To expand on the use of the questionnaire, it appears that adaptation to diverse backgrounds of aging populations would be welcomed, if not using the same questionnaire where relevant.

As for the use of the questionnaire findings, perhaps it could also mean that different groups of people with similar types of affinities could also constitute a co-living group displaying various of the features in a similar way.

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## **CLINICAL INTERVENTIONS FOR CHILDREN AND ADOLESCENTS IN PUBLIC MENTAL HEALTH SERVICES IN BRAZIL**

**Luziane Zacché Avellar**

*Professor in the Department of Social and Developmental Psychology (DPSD) and in the  
Psychology Graduate Program (PPGP) at the Federal University of Espírito Santo (UFES) (Brazil)*

### **Abstract**

In recent decades, Brazilian legislation relating to public mental health care for children and adolescents has changed radically and resulted in the establishment of Child and Adolescent Psychosocial Care Centers. This is one of the possible devices for offering care to children and young people. It must be part of a broad care network with intersectoral actions linked to other services and also including the school, assistance, legal, cultural sectors, etc. The logic of psychosocial care is what subsidizes the work, privileging actions in the territory. Actions must be expanded, involving caring, welcoming, listening, enabling emancipatory actions and enhancing the quality of life of users who must be considered in their singularity. Which is opposed to the strict meaning of “treatment”. As these services are relatively new, there is a need to provide theoretical support that could contribute to their establishment. Which justifies carrying out this study. The present work aims to present D. W. Winnicott's theory that can be useful for thinking about care in mental health services aimed at this public. It is noteworthy that the author built his theoretical framework based on his experiences in pediatric, psychoanalytic and social assistance clinics. The theory of the maturational process developed by Winnicott is based on the idea that there is a tendency towards development that is innate and inherited. This conception opens up the possibility of understanding development advances and possible problems in this process. Environmental provision provides the conditions for the course of the maturational process to continue. The mental health service can function as a place (placement), an environment capable of producing transformations in the subjects' experience of self through sophisticated forms of care, such as holding, handling, presentation of objects, potential space, the conception of play, when provided by a team of professionals. Such concepts will support the way of planning clinical interventions in services, which are closer to non-verbal communication and articulated with the time of subjectivity. They take place in potential space, so that there can be a symbolization of psychic needs. The intervention is built in the encounter, in the interplay of the subjectivity of the professional and the child and young person. It allows the professional to use different means of expression, not only to understand the patient's communication, but also to transmit it, using the same expressive and plastic language.

**Keywords:** *Child mental health, mental health services, child, adolescent.*

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### **1. Introduction**

Child and adolescent mental health is a crucial area of public health concern and research around the world. The growing understanding of the interconnection between mental health and other social determinants of health, such as poverty, inequality, discrimination and access to basic services, is extremely important. Addressing children and adolescent mental health issues involves promoting public policies that address the social and structural roots of these problems, aiming to create environments favorable to healthy development.

Legislation on the rights of children and adolescents in Brazil has undergone several changes over time to ensure more effective and comprehensive protection for this vulnerable population. Some of the main changes and legal frameworks related to the rights of children and adolescents in Brazil are:

1. Federal Constitution of 1988: The Federal Constitution of 1988 was an important milestone in guaranteeing the rights of children and adolescents in Brazil. It attributed fundamental principles, such as full protection, absolute priority, the right to life, health, education, family and community coexistence, among others.

2. Child and Adolescent Statute, enacted in 1990, is one of the most important pieces of legislation related to the rights of this public in Brazil, Federal Law No. 8.069, of July 13, 1990, which regulates article 227 of the Constitution Federal, defines children and adolescents as subjects of rights, in a peculiar condition of development, who demand full and priority protection from the family, society and the State. It establishes guidelines for the full protection and promotion of the rights of this population, including issues such as health, education, social assistance, protection against violence, exploitation and abuse, among others.
3. Brazilian legislation relating to public attention to the mental health of children and adolescents has changed radically in recent years and has been improved in the creation of Child and Youth Psychosocial Care Centers. This is one of the possible devices for the care of children and young people. It must be part of a broad care network, the Psychosocial Care Network – RAPS (Brasil, 2011), is a strategy that aims to articulate all mental health services into an integrated and hierarchical network, ensuring full access and continuous mental health care. RAPS includes everything from Basic Care to highly complex services. One of the services of this network are the Psychosocial Care Centers and among the modalities the Child and Youth Psychosocial Care Centers.

The logic of Psychosocial Care that underpins Mental Health assistance in Brazil is based on a humanized, integral and subject centered approach. Some of the fundamentals of this logic: 1. Deinstitutionalization: Psychosocial Care seeks to overcome the asylum model, which confined people with mental disorders in psychiatric hospitals isolated from society. Instead, it promotes deinstitutionalization, aiming to reintegrate users into the community and enhance their social and family support networks. 2. Harm reduction: Psychosocial Care adopts a harm reduction approach, recognizing that some situations of mental suffering can be chronic or recurrent. Instead of seeking a quick and definitive cure, it prioritizes the relief of suffering, continuous care and respect for users' autonomy and choices. 3. Intersectorality: Recognizing that social determinants have a major impact on mental health, Psychosocial Care seeks integration with other sectors, such as social assistance, education, housing, work and culture. This allows for a broader and more comprehensive approach to dealing with user demands and needs. 4. Participation and social control: Psychosocial Care values the active participation of users, family members and the community in the planning, execution and evaluation of mental health policies and practices. This strengthens social control over services and promotes greater accountability of public and private institutions. 5. Territorialization: Psychosocial Care promotes the development of mental health services in the territory, that is, close to the communities where users live. This facilitates access to services, strengthens community ties and promotes a more comprehensive and contextualized approach to dealing with mental health demands. 6. Valuing local resources: Instead of focusing only on specialized and institutional resources, Psychosocial Care values existing resources in communities, such as mutual support groups, cultural, religious and community initiatives, which can contribute to care and support to users. These foundations of the logic of Psychosocial Care reflect a more democratic, participatory and humanized approach to dealing with mental health issues, promoting social inclusion, respect for human rights and the dignity of people who experience mental disorders, whether children, adolescents or adults.

As these services are relatively new, there is a need to provide theoretical support that can contribute to their establishment. Therefore, this work seeks to deepen knowledge about clinical interventions with children and adolescents in public mental health services in Brazil, highlighting the theoretical contributions of the English psychoanalyst D.W. Winnicott, a theory that can be useful in thinking about care in mental health services aimed at this public. It is noteworthy that the author built his theoretical framework based on his experiences in pediatric, psychoanalytic and social assistance clinics.

## **2. Objective**

Deepen knowledge about clinical interventions with children and adolescents in public mental health services in Brazil.

## **3. Method**

This is theoretical research, its purpose is to deepen knowledge and discussions, seeking to understand and provide space for discussion about clinical interventions with children and adolescents in public mental health services, based on the theoretical contributions of the english psychoanalyst D.W. Winnicott.

### 3.1. Data collection procedure

As a data collection procedure, texts from the Public Policy on Child and Adolescent Mental Health in Brazil and texts by D. W. Winnicott were selected.

### 3.2. Data analysis procedure

To carry out data analysis, the following steps were followed: I) Selection of texts from the Public Policy on SMIJ in Brazil, II. Selection of texts for subsequent identification of concepts from D. W. Winnicott's theory, III. Pre-Analysis, first reading of the material, in order to define, within the possibilities of texts, those that could contribute to the discussion of the proposed theme to achieve the objective of this research. Next, IV) Material Exploration was carried out, which consisted of readings of the selected texts, and finally V) Treatment of results and interpretation, in which, based on the reading of the texts, the aim is to propose inferences and interpretations, thus building knowledge that makes it possible to deepen knowledge about clinical interventions with children and adolescents in public mental health services in Brazil.

## 4. Results and discussion

To understand the proposal for the Mental Health Policy for Children and Adolescents in Brazil, two texts were selected:

1. Psychosocial Care for Children and Adolescents in the Unified Health System (SUS) - Weaving Networks to Guarantee Rights, 2014. The document establishes that with regard to policies aimed at children and adolescents, the principle of full protection must be observed and the need for all services and points of care available in the network to meet the needs and appropriate interventions to promote, protect and recover the health of this population (Ministério da Saúde - Brazil, 2014).

2. Ordinance 3.088, of 12/23/2011, which establishes the Psychosocial Care Network, provides for the creation, expansion and articulation of health care points for people with suffering or mental disorders and with concomitant needs, use of crack, alcohol and other drugs within the scope of the Unified Health System (SUS) (Brazil, 2011). It aims to promote an integrated and hierarchical network of mental health services, ranging from Primary Care to highly complex services, ensuring full access and continuous mental health care for the Brazilian population.

One of the points of this Network is the Child and Youth Psychosocial Care Center (CAPSi), a public health service that serves children and adolescents who present intense psychological suffering resulting from serious and persistent mental disorders or psychological suffering resulting from the use of psychoactive substances. The document states that mental health can be seen, then, as a condition resulting from the provision of quality care and attention, as long as it is under the principles of humanization and integral protection (Ministério da Saúde - Brazil, 2014, p. 48).

In the context of CAPSi, the entry of the child or adolescent takes place through embracement, consists of the assessment of the user's situation by a team of professionals from different areas, its objective is to understand the situation of psychological suffering and assess whether this would be a demand for the service. If the demand is considered to be for CAPSi, the interdisciplinary team will carry out a case study with the aim of developing a Individual Therapeutic Project (PTS), which must be carried out together with the family and/or main caregivers and user. To this end, the territory's resources must be considered, as the activities will be carried out jointly: CAPSi and other points in the Network. At CAPSi, the user will be involved in various activities to encourage the building of bonds with the team and with other users. They will also be attended to by psychologists and/or psychiatrists individually, when appropriate, but collective interventions are prioritized, thus, the user is invited to participate in different workshops, with different themes.

These actions must be expanded, involving care, embracement, listening, enabling emancipatory actions and improving the quality of life of users who must be considered in their uniqueness. Which is opposed to the strict meaning of treatment. It is these concepts that we intend to substantiate with concepts from Winnicott's theory.

### 4.1. Theoretical aspects of D. W. Winnicott's work

Donald Winnicott, an important British psychoanalyst, contributed significantly to the understanding of human development. The theory of human maturation, also known as the theory of emotional development, emphasizes several central assumptions, which we briefly present: 1. Facilitating environment: Winnicott emphasizes the importance of a facilitating environment for healthy development. He introduced the concept of a "good enough mother," which refers to a mother (or caregiver) who is able to provide consistent care, genuine affection, and a safe environment for her baby

to explore and develop. 2. **Transitionality:** Winnicott introduced the concept of "transitional object", which refers to an object that a child uses to transition between the internal world and the external world. These objects have a symbolic meaning and play an important role in the child's emotional development. 3. **Transitional phenomena:** In addition to transitional objects, Winnicott also talked about "transitional spaces", which are areas of experience that exist between the internal world and the external world. These spaces, such as creative play and imagination, are crucial for the development of creativity, autonomy and symbolization capacity. 4. **True Self and False Self:** Winnicott distinguishes between the "True Self" and the "False Self". The True Self is the authentic and genuine part of the personality, while the False Self is an adapted persona that develops as a defense against traumatic or maladaptive environmental experiences. He believes that the goal of psychotherapy is to help the individual reconnect with their True Self. 5. **The importance of playing:** Winnicott considered playing as a fundamental activity for a child's emotional development. He saw play as a form of creative expression and a way in which children can explore and understand the world around them.

To meet the objectives of this work, we selected the concepts of environment, setting, holding, reliability, process of mutuality, play and potential space anchored in the theory of the maturation process developed by Winnicott. It is based on the idea that there is a tendency towards development that is innate and inherited, emphasizing the environment as a facilitator for growth towards health. Thinking about human development as a continuum is fundamental to thinking about clinical interventions in mental health services for children and adolescents, as they are based on models that seek to encapsulate the different ways of existing, in all their complexity, within a psychopathological classification.

Environmental provision provides the conditions for the course of the maturation process to continue. Here we find a first possibility of thinking about clinical interventions in CAPSi based on the concept of environment. An environmental provision, as defined by Winnicott (1962), can encourage patients to relive primitive needs that were previously unsatisfied, now being welcomed and cared for. Such a conception would underpin the process of embracing the child or adolescent into the service, as previously described.

In his 1954 work, *Metapsychological and Clinical Aspects of Regression within the Psychoanalytical Setting*, Winnicott begins to establish a division of the techniques of interpretation and setting. Here we are interested in the idea that the setting can be transformed into a holding environment. In our opinion, the mental health service can function as an environment capable of producing transformations in the subjects' self-experience through sophisticated forms of care, such as holding, handling, presenting objects and playing, when provided by a team of professionals.

In another text, *Accommodation for Children in Time of War and in Time of Peace* (Winnicott, 1948) states that children need environmental stability, individual care and continuity of that care. And to ensure the possibility of providing individual care to children, the service must have staff who: can be able to withstand the emotional strain involved in caring for any child, but especially children whose own homes cannot withstand such strain (p. 78).

It is about enabling the establishment of trust, as a result of the care provided. This requires engagement from the professional as a real person, who uses their feelings, their empathy, their intuition to play in spaces and in different encounters inside and outside the service, since such services are territorially based. The concept of mutuality, developed by Winnicott (1969), underpins clinical interventions in the context of the service, as they must take place in a climate of reliable communication, in which the professional protects the setting from the invasions of external reality.

In this sense Avellar (2009), states that the care of children and adolescents in mental health services involves attentive and complex listening, made up of different elements and requires an analytical attitude that involves the possibility of the analyst playing with his patient. In the terms proposed by Winnicott, in his perspective, playing is an acquisition of the process of emotional development, it is a bridge between the internal and external world, it would be the space of between a third area, which is neither inside nor outside, where potential space is constituted. We turn again to Winnicott, who defines it as follows: here there is trust and reliability there is also a potential space, a space that can become an infinite area of separation. The baby, child, adolescent and adult can creatively fill it. With play and time, it became the enjoyment of cultural heritage (1971, p. 150).

The clinical intervention carried out within the potential space is subject to symbolization. Adequate holding for the service is essential in this process. Professionals take care that the patient can make meaningful communication. Just like a mother who is adapted to her baby's needs and places the object in the place of the baby's needs, the professional also makes a similar movement, as they are faced with anxieties that the patient cannot elaborate on during their development process. This is why clinical intervention must meet the patient needs.

## 5. Final considerations

The objective of this work was to deepen knowledge about clinical interventions with children and adolescents in public mental health services, based on some concepts from Winnicott's theory. Texts from the Public Mental Health Policy in Brazil were used to present the design of how the Assistance Network for this public is configured in Brazil. The Psychosocial Care Center, a territorial based service that has Psychosocial Care as its foundation, was briefly described. Some concepts from Winnicott's theory of human maturation were selected so that, in conjunction with policy texts, the objectives proposed in this work could be achieved.

It is believed that the main objective proposed here has been achieved, as it was possible to present some articulations of the concepts of Winnicottian theory to create foundations for clinical interventions in public mental health services. For future work, it is recommended to present practical cases that can bring greater clarity and depth to the topic proposed in this work.

With this, it is believed that a contribution has been made towards the implementation of public mental health policies in Brazil, so that the constitutional principles guaranteeing the right to comprehensive care for children and adolescents can be enforced.

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## LIFE ON HOLD – LIVING WITH AMBIGUOUS LOSS

**Lili Khechuashvili, & Mariam Gogichaishvili**

*Department Psychology, Tbilisi State University (Georgia)*

### Abstract

The study is first part of larger mixed method study, and aims at preliminary exploration of the subjective experiences of ambiguous loss in case of individuals whose family members have gone missing due to armed conflict. Thirty adults who met inclusion criteria were recruited based on random/available sampling procedures, and life stories were recorded via semi-structured in-depth life story interview. 390 stories (13 per person) were coded for narrative structure, autobiographical reasoning, generativity and motives. As data revealed, search for meaning in loss as well as in staying alive is one of the recurrent themes in the narratives of research participants. Only part of the sample was capable to construct their life stories in redemption manner – turning to autobiographical elaboration of the loss experience and extracting lessons/insights and growing out of adversity. The sample was quite low on generativity and only small portion of respondents, who did tell generative stories, mainly focused on their own family members, children/grandchildren, and afterwards on their community. As for autobiographical reasoning and finding meaning in disappearance and in life in general, most of the sample was quite low. Motivational themes of power and intimacy were presented in most of the stories told by research participants, however, motives of intimacy and close relationships prevailed in the majority of the stories whilst agency showed up in stories told as high points. Regardless hardship and pain lived by respondents, there were no stories of rejection and disillusion in human beings.

**Keywords:** *Ambiguous loss, narrative identity, meaning, generativity, motives.*

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### 1. Introduction

Living with someone who is both gone and not for sure – or here and gone – is a bizarre human experience that produces sadness, confusion, doubt, and anxiety. Expanding on years and even decades, this state causes even more damage to the individual, her/his everyday functioning as well as to her/his family networks and broader community. Being in ambiguity – not knowing whether a person's loved one is present or absence, alive or dead, exerts unique influence on human beings on both, individual and relational level. To denote this incomparable state and this ongoing, never-ending stressful experience, Boss (2006) coined the term Ambiguous Loss.

The presented study aims at preliminary exploration of the subjective experiences of ambiguous loss in case of individuals whose family members have gone missing due to armed conflict.

### 2. Ambiguous loss, immigration, and related experiences

The construct of an ambiguous loss (Boss, 2023), which by definition is relational and societal phenomena, is not located within a person but rather emerges in the family/social group structure, draws on the theory of family stress and describes situations where the loss is uncertain, unfinished, or partial. The term refers to ambiguous events or situations that entail a loss or separation that has no closure (Boss, 2016). In the ambiguous loss literature prolonged grief is viewed as inevitably linked to the not knowing the fate and whereabouts of disappeared person, and its causes are linked to the ambiguity, such as persistent hope, the absence of cultural and religious rituals to provide meaning to a loss, and the grief being so large as to disenfranchise community members (Hollander, 2016).

Psychologically, ambiguous loss can be a problem, in that it can create feelings of hopelessness, uncertainty, and confusion that can lead to depression, guilt, anxiety, and immobilization. Structurally, ambiguous loss can be a problem when it leads to boundary ambiguity, described as “a state in which family members are uncertain in their perception about who is in or out of the family and who is performing what roles and tasks within the family system” (Boss & Greenberg, 1984, p. 536). Boss

distinguishes between two types of ambiguous loss: Ambiguous absence and ambiguous presence. Ambiguous presence occurs when a family member is perceived as being physically present but psychologically absent. During reunion, although physically present, the family member may be psychologically absent, because of trauma from past experiences as well as of the distress from immediate resumption of previous roles and responsibilities.

Ambiguous absence occurs when a person is physically absent but perceived by her/his family members as being psychologically present. In this case the family often becomes preoccupied with the lost or absent relative, and it becomes unclear which roles family members play. As Drummet et al. (2003) claimed, family members must stretch the family boundary enough both to psychologically retain the missing person as a viable family member and to temporarily reassign his or her responsibilities. Individuals and families must deal with the latter in case of disappearance.

Disappearance, namely forced disappearance is one of the negative doings of catastrophic events such as natural disasters, earthquakes, and military conflicts (Boss, 2006). Following official statistics, there are around 2400 registered missing persons only in Georgia due to armed conflicts of 90-ies and August 2008. Being the one or part of the family that has relative/loved one gone missing, puts, individual, entire family and even broader community in special and unique position, since this is not distinct event with beginning, development and clear ending, rather than it is the ongoing, never ending, extremely demanding state of mind and the body without closure, causing individual (and her/his social network in the way) to freeze in the past and deny or ignore realms of present and perspectives of the future (Boss, 2016).

### 3. Method

The study employs social constructivism framework and interpretive paradigm. Hence, the data collection and analysis are qualitative and revolves around the subjective experiences, feelings, and interpretations reported by the research participants.

#### 3.1. Participants

*Demographics and sampling:* Thirty research participants were recruited via availability sampling procedures from International Committee of Red Cross (ICRC), Georgian Delegation database ( $M_{age} = 64.6(12)$ , [37 – 85]). Of all sample 18 persons (60%) were in the state of ambiguous loss and 12 persons (40%) already gained mortal remains of their loved ones before 2020.

*Enrolment criteria:* the respondent should have family members gone missing due to Abkhazia war in early 90s and/or 2008 armed conflicts in Georgia; Be either spouse or parent of the missing person.

#### 3.2. Instrument and procedures

*Instrument.* Georgian adapted version of life story interview (Khechuashvili, 2020; McAdams & Pals, 2006) with some modifications is a semi-structured interview containing questions about key points (high, low and turning points, positive and negative childhood, vivid memory and mystical/religious experience), challenges (life and health challenges, stories about loss and failure/regret), and future chapter, dreams/hopes and plans. Audio recorded interviews were transcribed verbatim.

*Ethical Considerations.* All participants read and signed a written informed consent form. Research assistants answered all questions regarding research procedures, withdrawal from the study, anonymity and confidentiality, publishing, etc.

*Place and time.* Interviews were recorded in 2020-2022, mainly in participants' homes. A few of them were recorded in coffeeshops and parks upon request of research participants. Each session lasted 70-90 minutes.

#### 3.3. Data analysis

*Narrative Coding and Reliability Check.* The story served as the unit of analysis. In each narrative were coded 13 stories: Eight key points and Five challenges. In total 390 memories were coded for target variables. Two independent raters coded 39 (10%) stories and got acceptable levels of reliability by each coded variable ( $.6 < k < .9$ ). The procedure followed the complete coding manual which was developed within the presented study based on already accumulated knowledge (Khechuashvili, 2020).

*Coded Variables.* (a) *Narrative structure.* The story was rated as having redemptive structure and was assigned code 1 if there was transition from negative scene toward positive one either in causal or time sequential mode ( $k = .95$ ). The stories where positive event ended up with negative outcome, was rated as contamination sequence and was assigned code 2 ( $k = .82$ ). The code 0 was assigned to the narrative if there was neither redemption nor contamination sequential transformation in the storytelling.



(b) For *Generativity* authors employed the Georgian version of coding scheme (Khechuashvili, et. at., 2019). Each memory was coded on 3-point scale (create, preserve, offer). A score of 0 was assigned to stories that contained no generativity at all. Narratives were scored as 1 if there was mention of a generational intention or action, which contains assignment of life to people or things ( $k=.88$ ); A score of 2 was assigned to narratives that contained description of intention/action of preservation, protection, wariness or cultivation ( $k=.92$ ). Stories were scored as 3 if generational intention/action was offered to someone ruthlessly that means offer to the next generation something, that was created, reserved and will keep its own autonomy ( $k=.85$ ) (McAdams, 2013). (c) *Autobiographical reasoning* measured via sophistication of meaning was coded based on McLean and Pratt's (2006) scheme, on a 4-point scale that represents the degree of meaning-making ( $k=.93$ ). A score 0 was assigned to narratives that contained no explanation of the meaning of the event to the self. Narratives were scored as 1 if there was mention of a lesson that the narrator learned from the event. A score of 2 was assigned to stories that contained "vague meaning". Narratives were scored as 3 if there was evidence that the narrator had gained specific emotional, psychological, or relational insight from the lived experience that applied to broader areas of his/her life (McLean & Breen, 2009). (d) *Self-Event connections* were coded according the coding system by Pasupathi and Mansour (2006). It has 3 categories: No connection to the self, a stability story and a change story ( $k=.73$ ). (e) *Power and Intimacy motives*. In high points and childhood positive memories the degree of power content in a given story was estimated by coding the presence or absence of four specific content themes centered around having impact and feeling strong: Psychical or psychological strength, Impact, Action, Status. The level of intimacy content in stories was coded in terms of the presence or absence of 5 intimacy themes: Interpersonal, Friendship/love, Communication/sharing, Sympathy, Touch/physical closeness. In low points and childhood negative memories were coded according to 4 power themes: Failure/weakness, Losing face, Ignorance, Conflict. As for intimacy themes, there were 4 categories: Separation, Rejection, Disillusionment about people, Another's misfortune (McAdams, 1991). Presence of a theme was scored as "1", absence – "0".

#### 4. Results

The stories were coded for both, structure and content characteristics. Half of the narratives (49%) had neither redemption nor contamination structure, however, nearly one-third of narratives were structured with redemption sequence (23%) and another 11.8% turned to be contamination stories. Those respondents who told the redemption stories, mainly spoke about improvement, upward mobility and recovery, while half of the individuals with contamination stories mainly focused on loss and failure.

Neither Generativity nor its any dimension was not reported as strong characteristic of the research participants. More than 2/3 of respondents reported no generativity in their stories, however, those who turned to be generative in either direction, told the stories of offering (10.5%) to outer world what they already accumulated.

Autobiographical reasoning was coded via expression of meaning in the story and the ability to trace self-event connections. As data show, about one half of research participants do not look for self-event connections in their stories. In other words, They do not reflect much on the events in their lives in order to see the causal connections between events and their own personality, as well as to search the meaning the event bears for them. However, those who do see the connections (half of the sample), tell twice more stories of stability or explanation than stories of change. When it comes to meaning of the lived experience in the stories of the same half of the sample, quarter of the stories (24.6%) are with vague meaning, and small part (around 5%) speaks of either learned lesson or insight.

As for the thematic lines revealed via coding, 1/3 of the stories are about relationships. Other stories speak of tension, discomfort (18.2%), mortality (14.6%) and Self/values (10%). Coping with the problems was coded through several variables, such as intrusive rumination, and particular coping strategies. As data show 2/3 of the respondents do not turn to intrusive rumination that enables them to cope with situations more or less proactively and effectively. The most frequently used coping strategies were to be oriented on problem solving (33.6%) and to reconstruct emotional relation towards the situation (18.1%), which seems adaptive in ambiguous loss state, when one is forced to solve the problem this or that way, and reorganize emotional relation towards the situation one is not able to change.

#### 5. Discussion

Thus, as data show, the motivational themes of power and intimacy are presented in most of the stories told by research participants, however, the particular line of the motif is associated with type of the memory. Namely, the stories of power, which means expanding and realizing oneself, are told mostly as high points. There are fewer power stories in low points and childhood memories. However, when stories contain power motives, they speak of orientation on action and status.

*What I had to do, I had to do it by myself. I was only one I could rely on. If you do not pull out yourself from this deep darkness, nobody can help you (Female, 63, N23).*

As for intimacy motives, which refers to the need of being connected with other human beings this-or-that way, the most of the stories, be it high and low points, and childhood positive memories, contain intimacy motives, underlying the themes of interpersonal relationships, sympathy, separation, misfortune of other human being, and love.

*By the way, she met me kindly... When she noted that I am deeply in my thoughts, she used to come, hug me and gave me hope, that everything will be ok (Female, 74, N13).*

It should be noted that there are no stories of rejection and disillusion in human beings.

When zooming out on all collected stories, it seems logical: Urge for having another person next to oneself is inherited human need, specifically when misfortune happens in one's life, and emotional, physical and instrumental support is vital for survival. As Boss (2016) mentioned "What mourners and family members need, more than medication, is human connection, along with society's empathy, compassion, and patience". Hence, although there are stories of loss, separation and others' misfortune, there are no even single story of rejection and losing the believe in humanity.

Another trend in the stories from personal life is either to focus on negative experiences, or to give negative interpretation of the event. This leads recalling more stories with negative emotional tone. Failure, regret and challenges, also happened in personal life stories, be it health issues of oneself or one's family member, or termination of relationships. As for loss experience, it was not surprising to have stories about losing loved one, through either death or being gone missing.

*After perfect childhood and student years in Sokhumi, Abkhazia, I happily got married my high school sweetheart, who disappeared in war after 7 months, and I stayed pregnant (Female, 55, N19).*

As data show, research participants told one-third of stories in redemption manner that replicates other studies conducted on Georgian samples (Khechuashvili, 2020; Khechuashvili, et. al., 2019; Jananashvili, et. al., 2018; Gogichaishvili, et. al., 2016; Khechuashvili, 2015). Besides, such manner of telling one's experience was associated with the type of the memory one has told. Namely, people construct their nadir, turning and challenging experiences in redemptive structure.

Generativity, in general is not strong suite for given sample: There were a fewer respondents with generative intentions and their stories are about offering what they have accumulated – mainly for their offsprings and grandchildren. Besides, some of them are active in their community – having responsibilities in family comettees and other projects, this or that way linked to the issues of missing persons and their families.

*Being in this ambiguous state, I found out that I was much stronger and resilient that I ever thought. I still feel pain but I started helping other men and women whom I shared this loss with, and I found the strength in myself, new power... (Female, 65, N10).*

Being low in generativity could be one of the side effects of being in ambiguous loss state, e. i. being frozen in the past, with missing person, and individuals lack the resources to be in the present, to think and care about somebody other than their immadiate family members, such as langer groups and community, in general. Nevertheless, some of the research participants spoke about caring for family members and relatives (one of the way to be generative) served as the way of adaptation to ambiguity and as the coping mechanism. As one of them stated:

*I had to stand strong not to fall down. I had to keep my face, my humanity and think about good things and kindness. I had to survive for them – my kids and relatives (Female, 62, N23).*

Another characteristic, that might be associated with the state of ambiguity, is scoring low on autobiographical reasoning. When traumatic event happens, it discontinues the life story on the individual, and this, in turn, often triggers authobiographical reasoning, which, leads to finding the meaning and ultimately brings to elaboration of the stressful experience, restoring the story line, and higher sense of well-being. When one reflects on experience and tries to find meaning in it, and links this experience to one's current self, one moves on the grief pathway toward better well-being and adaptation. However, when individual lacks resources for doing so, or when the trauma is too severe, one is frozen in past and is not capable (without external help) to follow adaptive elaboration and grief process. All these dynamics embodies as low scores on authobiographical reasoning, meaning and self-event connections, and leave a person in never-ending suffering:

*I know nothing... [crying]. I am leaving and coming, no meaning... I am fading slowly-slowly... I lived and did only good things and still I am the one who suffers so much. Why? Can somebody tell me why? Does God give me the ordial? How many good things I did for so many people... I do not understand (Female, 80, N11).*

There are plenty of empirical evidence that only way out from frozen grief due to uncertain loss, and further social adaptation, as Boss also states (Boss, 2022), is to engage in autobiographical reasoning – to search the meaning in disappearance. This, of course, is the very long and painful process, however it brings resiliency and some peace to the individuals.

*Here is the book saying that my son is a hero. This sounds a bit strange but seeing his smily face on the pages and having him recognized as a hero, smooths my pain. Yes, not all pain but still (Femal, 66, N22).*

Search for meaning in loss as well as in staying alive is one of the recurrent themes in the narratives of research participants, as it is illustrated bellow in qualitative part of the study.

## 6. Limitations

First limitation associated with sample – only parents and/or spouses of missing persons and only those whose loved persons gone missing due to war were interviewed. Second limitations in the sample size that does not allow extensive quantitative analysis on individual level. And third, the exploration of the phenomenology of ambiguous loss was one-sided – only on individual level and from one family member’s viewpoint, and other members of the family or second generation were not taken into account.

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# MEANING MAKING AFTER MALPRACTICE COMPLAINTS AGAINST PSYCHOLOGISTS: LOSING THE BATTLE, WINNING THE WAR

**Esmé van Rensburg, & Hanlé Kirkcaldy**

*Psychology Department, North- West University (South Africa)*

## Abstract

A career in psychology can in general be seen as very rewarding and meaningful. However, working as a psychologist in a Third World country such as South Africa, poses its own unique challenges. There is a severe shortage of psychologists in South Africa (2.75 psychologists per 100 000 individuals). This places a severe burden on psychologists to provide services. Besides excessive workloads, psychologists also experience severe stress due to managing clients, attending to administrative procedures, balancing work-home life and financial concerns. An additional stressor, namely a malpractice complaint, increases the risk of distress and possible impairment within the psychologist. The aim of this research was therefore to determine how psychologists who experienced an adverse event such as a malpractice complaint made meaning thereof. Meaning making can be defined as the process of coming to an understanding of how events in one's life fit together, how to adjust to adverse events and to integrate challenges about oneself, others, one's world and to find equilibrium. A qualitative design was followed where semi-structured interviews were conducted and the results analysed and interpreted from an interpretive phenomenological perspective. The results indicated that the group of psychologists who participated (n=10) in this research were able to experience meaning making despite the traumatic impact of such a complaint. Three themes emerged: The participants experienced professional and personal growth; meaningful changes were made to risk management; and the complaint contributed to integration of meaning of life. The research made a positive contribution on theoretical level in terms of meaning making after malpractice complaints, but also on practical level in that the results can be used for therapeutic and professional guidance and intervention in order to re-establish psychological well-being after an adverse event.

**Keywords:** *Professional complaints, ethics, meaning making.*

## 1. Introduction

This qualitative study aimed to explore the meaning making of ten South African psychologists who experienced an adverse professional event, namely professional malpractice complaints. The study envisioned that by understanding these professionals' meaning making, insight could be gained of what sustained the practitioners and what meaning they made despite the distressing events. The results of this study can be used for therapeutic and professional support of practitioners during such an adverse event.

## 2. Professional charges against psychologists

South Africa can be seen as a Third World country with conditions of adversity. Crime, poverty and lack of basic services form part of the socio and economic landscape, leading to scarcity also in the mental health care arena (De Kock & Pillay, 2018). Psychologists are faced with severe occupational stress leading to burnout (Sim, Zanardelli, Loughran, Mannarino, & Hill, 2016). In general psychologists are faced with managing clients with complex problems and difficult diagnoses, excessive workloads, keeping professional boundaries, maintaining ethical standards, organizational stressors and having difficulties balancing work-private lives (Rupert, Miller, & Dorociak, 2015). Already in 2007, research done by Jordaan, Spangenberg, Watson, and Fouché found that South African Psychologists displayed above average levels of anxiety and depression and at times battled to manage their own stress. This may be correlated with the working conditions in which South African Psychologists often find themselves in. There is a high demand for services but limited service availability. Psychologists often experience feelings of powerlessness or lack of control within the current health system. Amidst the scarcity of health resources, medical malpractice litigation and claims have increased, in both the public and private sectors in South

Africa (Oosthuizen, & Carstens, 2015). Malherbe (2013) postulated that this increase may be due to several factors, namely decreased professional standards, changes in the legal system, clients' awareness of rights, and pressure on psychologists due to the collapsing health system or a combination of these factors. The changing face of professional practice and the rise in consumerism in the wider medical field may also contribute to malpractice claims. Further indications are that practitioners often prefer to cease practice rather than run the risk of law suit that may be extended and expensive. Professional practice indemnity firms have in the past few years raised their practice indemnity fees for psychologists, because of the protracted, complex and potentially expensive nature of proceedings at the Health Professions Council of South Africa (HPCSA) and the potential cost of clinical negligence claims or eventual non-claims). This however also places an additional financial burden on the practitioner. It is impossible to predict who will be charged as it is not only devious or criminal practitioners who are complained against (Keith-Spiegel, & Koocher, 1995). Newly qualified psychologists who are motivated often makes mistakes due to inexperience. Experienced psychologists make judgement calls which with hindsight, proved to be incorrect. Honest mistakes or negligence can lead to mistakes, while some psychologists are personally troubled or impaired or have job burnout and limited emotional strategies to cope with demanding circumstances and difficult clients. Allen states: "the threat of legal liability is a constant source of concern to therapists (Allan, 2001, p. 68).

The effect of a malpractice claim on practitioners is well documented by literature and Poythress and Brodsky (1992) described the stress as pathogenic. Psychological symptoms and specifically depression and pervasive anger, were common in defendants in relation to litigation process. They suggested that professionals may develop "litigaphobia" which means an excessive fear of litigation. This may in future have a severe impact on their personal and professional lives. Clinicians may develop a negative attitude towards their work and their clients and start to practice defensively. The results of their study also indicate that the half-life of emotional impact of litigation extends into several years. Charles (2001) describes this reaction as Malpractice Stress Syndrome (MSS) and parallels between MSS and Post Traumatic Stress Disorder were drawn by Ryll (2015). It is imperative that psychologists who have faced a professional charge against them, should be assisted in the process of coping. Coping refers to mitigating the harmful effects of stress and regulating negative emotions and distress (Folkman, 2011). A focus should be on stress-related resilience which implies the maintenance of wellbeing during stress and the process to recover after stress. Zautura and Reich (2011) postulate that recovery, sustainability and growth form important constructs on resilience and bouncing back after adversity. Recent coping theories emphasize meaning focused coping.

### **3. Meaning making**

Meaning making can be seen as the process where a person in distress tries to fit a new experience into his or her understanding of the world, so that a sense of coherence and familiarity is restored. It therefore the process of making sense of our experiences. Proulx and Inzlicht (2012) indicate that we generally ask two questions: "what happened here?" (understanding the incident that brings the threat) and "why did this happen?" (understanding the meaning violation). Park (2010, 2013) proposes that when there is a discrepancy between how a person perceives a particular situation (how they see and understand the facts) and their global meaning system (what they believe and desire), this discrepancy creates distress and the person attempts to reduce the distress in various ways, for instance by coping strategies. Sometimes the situation does not lend itself to immediate and effective coping or problem solving (like for instance during a charge) and then the situation calls for a new meaning making in order to restore the belief that the world is meaningful. People experience meaning if they have a sense of how things fit together in their lives. Posttraumatic growth does not occur automatically after an adverse event (Janoff-Bulman, 2004) as the adverse event first needs to be incorporated into the life of the person and reappraised. In the context of a professional malpractice complaint, the individual's perception of himself, his profession, and world as he knows it, are all challenged which leads to psychological distress (Bourne et al., 2015; Charles, 2001; Kirkcaldy, Van Rensburg, & Du Plooy, 2022; Ryll, 2015). There is a paucity of research regarding how psychologists in South Africa make meaning of an adverse event such as a professional charge.

### **4. Research methodology**

The specific phenomenon under investigation in this study was how psychologists made meaning, if any of a malpractice complaint. A qualitative approach was chosen, and specifically interpretive phenomenological analysis, where semi-structured retrospective interviews were used as data collection method. This design was deemed to be the most appropriate as it is exploratory in nature and the focus was the specific experience of the participants. In interpretative phenomenological research the focus falls on

the personal meaning and sense making of a specific experience within a specified context. After obtaining ethical clearance by the Human Research Ethics Committee of the North-West University, South Africa (NWU-00367-16S1 approval number), psychologists registered in South Africa and who had received a complaint against them at any time during their career, were recruited by means of a public domain email, explaining the aim of the study. The invitation and particulars of the study was sent to a large, general group of psychologists whose email addresses appeared in the public domain. Potential participants were requested to privately contact the second author in order for confidentiality to be maintained. After obtaining informed consent, interviews were scheduled with the participants in venues which they could choose which would provide emotional security and confidentiality. Semi-structured interviews with ten participants, yielded rich data and it became clear that data saturation has occurred and no new themes emerged. Eight females and two males participated in the interviews. The participants ranged in ages from 45 years to 70 years and had an average of 23.2 years of experience. The interviews were manually transcribed and returned to the participants to make changes and additions in order to improve the credibility of the transcripts and to capture the essence of the individuals' experiences. Interpretive phenomenological analysis was used to analyse the data and to generate themes.

## 5. Research findings

Three superordinate themes were found during the analysis of the data. It became prevalent that participants experienced personal growth, made meaningful changes to certain practical aspects of their professional work, and experienced changes in terms of their meaning in life. In terms of professional personal growth, some of the participants reported that they eventually felt empowered by the process of defending themselves and more courageous and with more confidence. Some of them reported increased personal strength and increased self-reliance. One participant reported that she experienced herself as being able to cope better with life stressors. It was also noted that some participants had an increased realization of their fallibility and that they are able to make mistakes and overcome the feelings associated with such mistakes. An increase in self-insight and self-acceptance were also reported. The second theme identified, confirmed that participants made meaningful changes to practical aspects in their professional lives. They indicated that they saw it as an opportunity to re-evaluate the procedures they used in their practices and to increase risk management strategies. The participants reported being more aware of risk factors and being more proactive. There was an increase in reviewing the quality of their own work and an attentiveness of increasing quality. In this regard several participants increased their appreciation of continued professional development, and constant supervision. The participants became aware of the complexities of complaints and that complainants can at times be unreasonable and dishonest. Yet, the participants were mostly able to understand how the client's diagnosis could contribute some of the complaints. The participants also agreed that ethical deliberation is complex and multi-faceted. They agreed that in spite of being well-trained in ethics, ethical issues will always be present and that it is not always a clear-cut situation. Ethical guidelines are at times ambiguous and can be interpreted in different ways. However, the participants felt that being more prepared on professional level and expanding their risk management strategies they were empowered during the whole process. In terms of the third superordinate theme, the results indicated that the participants felt that the experience has led to a deeper meaning in their personal and professional lives. The experience led to experiencing a higher purpose in life and also the need to be more available and supportive towards others who may be going through similar processes. They also felt that the experience must be shared (where appropriate) with clients and other colleagues. They were therefore quite open about their experiences in training seminars, or during group or individual supervision. For some, helping others aided in the process of coping. For some, the meaning of their work, even if it led to an adverse experience, increased in its value and they felt that they are better equipped to provide therapeutic service. One participant felt that this experience made her aware of the important advocacy role that psychologists need to play in general life but also in the profession. Some participants felt that the charge against them provided them with the opportunity to reflect on their own values, but also that it served as a confirmation and validation of their values and ethical principles. Some participants felt that their experience of the HPCSA, and by providing feedback on national level, may improve the quality of the process and how professional complaints may be handled in future. Some of the participants have voiced their concerns to Board Members of the HPCSA, or at national symposiums and in the process they may benefit the profession at large.

The results of this study indicate that the professionals who participated in this research, could, despite experiencing severe trauma find meaning in the process and bounce back after such a traumatic experience. Baumeister (1991) is of the opinion that meaning making is a basic psychological need where a sense of purpose, justification of behaviour and the development of self-efficacy form an important correlation with positive self-worth. The results correlate Janoff-Bulman (1992) who described increased

awareness of personal strength as an important requirement for posttraumatic growth. The participants were able to identify strengths that came about during the process of making meaning. In terms of the second theme, namely changes in their practice management and risk strategies, Stevanovic and Rupert (2004) explain the important role of work-focused strategies and a sense of control in career-sustaining behaviour. The participants in this group re-evaluated their strategies which led to an increase in professional behaviour and sense of control. In the third theme, psychologists found meaning because it enhanced the experience of “being part of a bigger issue”, or being able to make a difference on a broader level. It also led to involvement in advocacy issues to improve the lives of others. Ward and King (2017) indicate that work that contributes to the world in a larger sense, add meaning and calling – which may lead to experiencing work as enriching, purposeful and fulfilling.

The participants in this research, did not initially thought that in the end the experience may led to meaning making. The initial shock, anger, depression and sense of hopelessness they experienced, had to be processed and assimilated in order to come to a point of meaning making. This experience was not only to the benefit of the professionals themselves, but may also lead to the support of others and possible changes in the process as followed by the professional body.

Limitations to this study are that generalizability is compromised by only using ten participants. Self-reports were the only sources of data, and there were no limit on how long ago the charge to place. It may therefore be that the participants found themselves in “different phases” of the meaning making process. Yet, as in-depth analysis of their experiences was the main aim, these results may stimulate further research in this field.

## 6. Conclusion

This study was a sub-study of a larger PhD thesis which consisted of three parts. In the first study the second author analysed professionals experience of having a charge against them in the second study professionals’ experience of their coping with such a charge was explored and in the final study professionals meaning making of having a charge against them were explored. The results of this study to a certain extent provides hope to practitioners who experience a charge against them (whether justified or not). The results indicated that in spite of the initial shock and trauma, the participants in this group was able to make meaning and in their experience, transcend to a higher level of functioning. The results of this study therefor make a valuable contribution in terms of knowledge, but also on practical level.

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# EPISTEMOLOGICAL FRAMING IN STATISTICS COURSES FOR PSYCHOLOGY STUDENTS

**Carlos Vargas Morales**

*El Paso Community College (United States of America)  
The University of Texas at El Paso (United States of America)*

## Abstract

As psychology grows in popularity, most students select professions related to therapy, which constantly deem statistics courses as irrelevant and accentuate negative attitudes. This study explored perspectives of knowledge, known as epistemological frames, that students enrolled in a psychology-based course in statistics generate and the extent to which these relate to attitudes, thus leading to three research questions: What are the range of attitudes from students enrolled in a psychology-based course in statistics and would these vary among instructors? What type of epistemological frames do students enrolled in a psychology-based statistics course generate? How do epistemological frames relate to course attitudes? This mixed-methods study gathered data from students enrolled in an introduction to statistics course in different institutions to evaluate attitude ranges and chose nine students for a qualitative analysis on their epistemological frames. The results evidence similarity in attitudes toward statistics, regardless of the instructor teaching the course or the institution where the course was offered. Furthermore, the qualitative analysis evidence the existence of productive and unproductive frames which significantly relate to positive, neutral and negative attitudes. This study should encourage every statistics professor to question not only if the delivery of material is effective to generate knowledge, but if this knowledge transitions to the construction of productive epistemological frames that can foster positive attitudes as this course is useful for every psychology student, regardless of the specialization area.

**Keywords:** *Epistemological framing, student attitudes, psychology education.*

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## 1. Introduction

As of 2017, nearly 3.5 million people in the United States held a Bachelor's degree in psychology, out of which almost 1 million have received degrees over the last decade and data as recent as 2020 evidence a career growth of 3.46% as 183,794 degrees were awarded that year (Bureau of Labor Statistics, 2023). However, despite its growing popularity most students select specialization areas related to therapy, which leaves them frequently surprised when encountering math requirements on their degree plan, more specifically in statistics courses (Prayoga & Abraham, 2017). Consequently, psychology students frequently frown on the reality of enrolling in at least an introductory course on statistics during their undergraduate education and often dread on the possibility of encountering more statistics courses through graduate programs (Counsell & Cribbie, 2020).

### 1.1. Statement of the problem

Research methods courses can be perceived as difficult and dull by social and behavioral science students (Murtonen, 2005), and statistics courses are often among the most problematic for psychology students (Gal et al., 1997). Two decades worth of academic literature suggest that psychology students continuously hold negative attitudes toward statistics, or neutral at best (e.g. Hogg, 1991; Ruggeri et al., 2008), and most set only for the required statistics modules while postponing them as much as possible (Onwuegbuzie, 2004). Traditionally, negative attitudes toward statistics are explained by adverse experiences with mathematics through primary education, which can trigger negative emotions toward any related topic such as statistics (Onwuegbuzie, 2000). However, these dreadful attitudes are especially relevant among psychology students due to the misconceived connection of the discipline with qualitative oriented methods when associating the field with careers in therapy (Murtonen et al., 2008) and ignorance about the usefulness of quantitative courses with this area of study (Griffith et al., 2012). Addressing the concept of attitudes and perspectives of knowledge in statistics courses, a research gap exists in tracing a

potential link among these two variables; possibly the perspectives of knowledge that students generate in statistics courses can mediate attitudes toward the course.

## 1.2. Literature review

Framing is an interpretation to a situation, also described as an answer to the question “What is going on here?” (Goffman, 1974). Framing is predisposed by schemas, which are created by life experience; thus, two individuals with different life experiences can perceive the same situation differently. A point to consider here is that a source generating frames may not be aware of how simple verbal and non-verbal behaviors can modify the interpretation of a situation. Therefore, the way in which a situation is framed can alter the interpretation of a message, which gives the messenger enormous influence (Entman, 1993). This leads to an interest of frames in education, primarily focused on the study of epistemological framing.

Research in learning sciences evidence the existence of frames in education within a context of knowledge, which can be answers to questions such as “What do I expect to learn?” and “By what standards will my intellectual contributions be judged?” (Redish, 2004). By the time a student steps into a new classroom there are many years of experience that already built a schema to evaluate the situation: where to sit, what to do, how to act. Once class begins a student generate frames to develop expectations about what is required, such as deciding what is relevant to succeed in a course (Scherr & Hammer, 2009); this notion of students’ framing emphasizing knowledge and learning is known as epistemological framing. Recent studies suggest that students with diverse epistemological frames can understand the same lesson differently since the interpretation of a lecture is not directly tied to the lecture itself, but to the perspective that a student creates about the subject (Krupnik et al., 2018). Therefore, a productive epistemological frame of the student coherent with the frame of an instructor can influence whether class instruction will achieve successful or unsuccessful goals (Hammer et al., 2005).

As noted on the following examples, unproductive frames often involve automatic thought processes that require little to no effort or no sense of voluntary control, while productive frames require conscious efforts and prompts the student to take responsibility for knowledge. Examples of unproductive frames include classroom strategies of accumulating facts without considering their connection to real life (Hutchison & Hammer, 2010), misunderstanding the purpose of lecture as an attempt to hoard facts without relevance (Scherr & Hammer, 2009), and a “cut and paste” mentality when unquestioningly accepting knowledge from perceived authority sources, such as a high achieving classmate (Shim & Kim, 2018). On the other hand, examples of productive frames include a comprehension of the logic behind the content being taught (Krupnik et al., 2018), a classroom strategy of storytelling (Rosenberg et al., 2006), and shifts in positionality among classmates so every student receives a chance to lead during discourse (Shaban & Wilkerson, 2019). As evidenced by these studies, research on epistemological framing indicates an influence of teaching strategies that can foster productive frames, and their existence links to student success (Hutchinson & Hammer, 2010).

## 1.3. Student attitudes toward statistics

The concept of student attitudes toward statistics courses has been studied for over 30 years, with outcomes suggesting that psychology students often hold negative attitudes or neutral at best (Counsell & Cribbie, 2020), up to the extent at which many may perceive required statistics courses an obstacle toward reaching their academic goals, and as a result, students can even avoid or postpone quantitative statistics courses (Prayoga & Abrams, 2017). Controlling attitudes is a concept worth exploring, as studies already associate positive attitudes toward statistics with higher grades (e.g., Dempster & McCorry, 2009). Furthermore, student attitudes can impact factors such as the development of statistical thinking skills, the willingness to enroll in statistics courses and general achievement (Hilton et al., 2004).

## 1.4. Research questions

The conclusion from these studies leads to the prediction that epistemological frames will follow different patterns among students with low (negative), medium (neutral) and high (positive) attitudes with a trend tracking productive frames among medium and high attitude students and unproductive frames being especially evident among low attitude students. This interest leads to the following research questions:

- Q1: What are the range of attitudes from students enrolled in a psychology-based course in statistics and would such range of attitudes significantly vary among instructors?
- Q2: What type of epistemological frames do students enrolled in a psychology-based statistics course generate?
- Q3: How do epistemological frames generated by these students relate to course attitudes?

## 2. Methods

This study followed a mixed-methods design as it integrates quantitative and qualitative research. Data was collected from introduction to statistics courses both at El Paso Community College (Psyc 2317;  $n = 45$ ) and the University of Texas at El Paso (Psyc 1303;  $n = 63$ ) during Summer and Fall 2022. At EPCC data was collected from 6 courses that were taught by 4 different professors; at UTEP, data was collected from 3 courses taught by 2 different instructors. The instrument used for the qualitative analysis is the *Survey on Attitudes toward Statistics (SATS; Schau, 2003)* to establish a range of attitudes from psychology students enrolled in a statistics course. This scale was chosen due to its good convergent validity with similar scales, along with good reliability as researchers support the proposed factor structure (Nolan et al., 2012). The results provided varying attitudes and distinguished students holding low (negative), medium (neutral) and high (positive) attitudes. The study originally pursued a follow-up interview with three students of each range ( $n = 9$ ) and although quantitative data gathered 103 students, the follow-up qualitative analysis incorporated unequal sample sizes with 3 students with low attitudes, 4 students with medium attitudes and 2 students with high attitudes.

## 3. Results

The first research question led to a quantitative data analysis as it combined two interests: What are the range of attitudes of students enrolled in a psychology-based class in statistics and would such range of attitudes significantly vary among psychology instructors? The following table summarizes data.

*Table 1. Descriptive statistics from sample.*

| <b>Subscales</b>     | <b>M</b> | <b>SD</b> |
|----------------------|----------|-----------|
| Affect               | 4.91     | 1.79      |
| Cognitive competence | 5.51     | 1.62      |
| Value                | 5.01     | 1.79      |
| Difficulty           | 4.02     | 1.66      |
| Interest             | 4.92     | 1.64      |
| Effort               | 6.19     | 1.29      |

Note. Each mean is based on a range of scores from 1 to 7.

The *SATS* is structured in six subscales, representing different aspects of attitudes concerning classes in statistics (Schau & Emmioglu, 2012). According to the authors, the following descriptions can help understand what each subscale measures:

- Affect: Positive and negative feelings concerning statistics.
- Cognitive competence: Intellectual knowledge when applied to statistics.
- Value: Usefulness and relevance of statistics in personal and professional life.
- Difficulty: Perceived difficulty of statistics as a subject of study.
- Interest: Level of individual interest in statistics.
- Effort: Amount of work expected to learn statistics.

Inferential statistics were conducted to test if range of attitudes significantly varied on each subscale when comparing scores from all six professors. To conduct this comparison, the first round of analysis was taken by running a Kruskal-Wallis one-way analysis of variance as this method is recommended to compare two or more independent samples of unequal sample sizes (Kruskal & Wallis, 1952). Six separate tests were run, one for each subscale. Surprisingly, for neither of the subscales did the significant value lie below .05, therefore which retaining each null hypothesis; regardless of the professor teaching the course and the academic setting (EPCC or UTEP), students held the same attitude level across each of the six subscales from the *SATS*.

### 3.1. Qualitative analysis

As discussed in the methods section, the *SATS* provided varying attitudes and distinguished students holding low (negative), medium (neutral) and high (positive) attitudes. The interviews were semi structured to allow for better responses about the situation at hand, to the emerging worldview of the interviewee and the ideas arising on the topic. The initial structure consisted of 10 questions addressing

three main areas of interest: perspectives of knowledge, teaching techniques and knowledge of course material. These three areas were chosen to represent the most common interests when addressing epistemological framing, as studies have focused primarily on perspectives of knowledge (e.g. Hutchison & Hammer, 2010; Redish, 2004; Scherr & Hammer, 2009), the influence of teaching techniques (e.g. Rosenberg et al., 2006) and the framing evoked when inquired about knowledge of course material (e.g. Hammer et al., 2005; Krupnik et al., 2018). The results evidenced patterns of unproductive frames among low and medium attitude students differing from high attitude students on perspectives of knowledge and course content knowledge, but not on teaching techniques. These results further validate the quantitative data analysis as student attitudes varied similarly regardless of which teacher taught the course, and the qualitative data analysis further evidenced the different patterns of teaching techniques that did not differ among students, regardless of their attitude level.

An example from a response worth exploring came near the end of an interview with a medium attitude student who solidified a course lesson that not only connected to his understanding of statistics in the classroom, but with its importance in the real world as he connected the lesson to a relevant topic in his life, this is one of the most insightful lessons from the interviews: *One lesson that I probably learned and I don't know why it stuck with me, when we were learning about the nasty null. I believe it was on week 2 when we were learning how to write hypotheses, she ended up telling us that right now in the class we're taking we don't want the null to be true, but one think she did say that researchers actually sometimes when the null is proven true and the alternative hypothesis is proven correct that is ok cause that is what data is, sometimes you're going to get good results, sometimes you'll get null results and sometimes you'll get decreasing results and that's ok if it happens. I like to relate that to the ying and yang symbol, which I guess I'm very fascinated in because it represents the bad and the good and when she told me that that's what it kind of reminded of.*

#### 4. Discussion

The current study explored student attitudes about a course in statistics and the extent to which these can be impacted by perspectives of knowledge generated through the course. This interest led to the hypothesis that despite the range of attitudes generated through the course, there would be substantial variability at least from the course of one professor; our results failed to support this hypothesis. The second part of the hypothesis predicted a connection between student attitudes and different perspectives of knowledge generated by these students, and this was supported as evidence shows a consistent pattern of productive frames held primarily by high attitude students, while a pattern of unproductive frames was held primarily by low attitude students, with medium attitude students remaining ambivalent as they projected a positive impression of their course, which was coupled by an assertion on the usefulness of statistics in their fields of study; yet when prompted to provide concrete examples they often failed to provide one. However, these patterns were evident with questions addressing perspectives of knowledge (theme 1) and the understanding of a standard deviation (theme 2), but not with teaching techniques (theme 3).. This is coherent with the results from the quantitative analysis that could not define substantial attitude change by the respective professor; the results suggest that students hold a range of attitudes due to the class, not the professor.

Tracing this study back to its theory, this study evidenced that students generate perspectives of knowledge and develop a range of attitudes regardless of the instructor, but it does not test if conscious strategies to evoke productive frames make a difference. The professor should not be relegated to be a supplier of information with the student perceived as a static source contained to receive and repeat knowledge as this process constructs an unproductive frame of “knowledge propagated from authority” (Hutchison & Hammer, 2010); the professor can do more. The results from this study should encourage every statistics professor to question not only if the delivery of material is effective to generate knowledge, but if this knowledge transitions to the construction of productive epistemological frames that can impact the understanding of a course in statistics as more than just math, more than just a grade and more than a course useful only for researchers. Professors in statistics should be encouraged to question if current teaching methods aid in the construction of productive epistemological frames, as this study evidence that these frames will invariably affect student attitudes toward the course, solidifying the strength of the course not only for academics, but for professionals in applied fields related to Psychology.

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## **CLINGING TO THE DREAM: PREDICTING PERSISTENCE AMONG COLLEGE STUDENTS**

**Gaithri A. Fernando\***, Krishna Foster, Michael S. Joseph, Tina Salmassi,  
Valerie Talavera-Bustillos, & Amber Pereira  
*California State University, Los Angeles (USA)*

### **Abstract**

For young adults who are the first in their families to attend college (“first-generation college students”), earning a college degree is not only an exciting dream but also a practical path to upward mobility. These students face numerous challenges that impact their motivation and intent to persist towards their degrees, and institutions of higher education would benefit from identifying the variables that promote or discourage persistence. A survey on college persistence was conducted at a Southern California university serving a majority of first-generation college students. A total of 578 students (women = 69%, first-generation students = 63%) between the ages of 18 and 51 years (mean age = 18.9) responded to the online survey assessing persistence, academic and social burden, social support, instructor support, sense of belonging, and academic self-efficacy. Regression models with persistence as the primary outcome were tested for first-generation and non-first-generation respondents. Results revealed that for first-generation students, sense of belonging was the strongest predictor of persistence, while instructor support and academic self-efficacy were also significant predictors in the model; together, the variables explained 21% of the variance in persistence. For non-first-generation students, academic self-efficacy was the strongest predictor, with sense of belonging also being a significant predictor in the model; together, the variables explained 24% of the variance of persistence. These findings will be discussed in the context implications for pedagogy as well as institutional policies.

**Keywords:** *College students, academic persistence, academic self-efficacy, sense of belonging.*

### **1. Clinging to the dream: Predicting persistence among college students**

Three current trends in higher education are vying with each other for the dominant narrative about the value of a college degree. First, while universities used to be reserved mostly for children whose parents also went to college, in today’s competitive job market it is expected that most successful candidates will have earned a college degree. Simultaneously, students and their families are questioning the value of higher education, given its rising costs and perceived weak links to practical skills needed in the workforce. Third, while most colleges accept and register large numbers of students, their retention and graduation rates are alarmingly low, with an average graduation rate of only 41% in the USA (ThinkImpact, 2021). For first-generation college (FGC) students (those whose parents have not attended college), persisting towards a degree poses even more difficulties (Rendón, 1994); yet getting this degree may be the path for upward mobility for the whole family (Zajacova & Lawrence, 2018).

Researchers in higher education make a distinction between retention, a construct referring to the actual number of college students who return to campus from semester to semester, and college persistence, which refers to a set of beliefs, attitudes, and behaviors of the college student linked to continuing on with one’s college education (Davidson, Beck, & Milligan, 2009). Retention rates are significantly lower for fresh students returning for their sophomore year, with retention rates for FGC students significantly lower than for those whose parents have attended college. Persistence on the part of fresh students strongly predicts retention in their second year. For these reasons, it is worth considering the variables associated with keeping students, particularly FGC students, persisting towards their degree.

\* Correspondence concerning this article should be addressed to Gaithri A. Fernando, Department of Psychology, Cal State LA, 5151 State University Drive, Los Angeles, CA 90032, USA. Email: gfernan2@calstatela.edu

Currently there is a substantial body of research that has identified psychological variables that keep students persisting in college. Social support and academic self-efficacy are two that have been examined extensively. Social support is a socioemotional construct, and can be defined as the perceived availability of help and encouragement from others, or “resources provided by one’s interpersonal ties” (Cohen & Hoberman, 1983). Social support has been reliably linked to academic success (Katreviceh & Aruguete, 2017). Academic self-efficacy is defined as confidence in one’s abilities to successfully complete academic tasks such taking good notes, being timely with assignments, and passing exams (Owen & Froman, 1988), and is positively linked to almost all successful outcomes for college students (e.g., Honicke & Broadbent, 2016).

More recent research has examined how other socioemotional variables such as sense of belonging to an institution and relationships with key faculty also predict college persistence. Instructor support can be defined as a student’s perception of receiving emotional, practical, and/or academic support from one or more instructors (Nielsen, Newman, Hirst, & Heilemann, 2017). Sense of belonging can be defined as the “psychological sense that one is a valued member of the college community” (Hausman, Schofield, & Woods, 2007). Although there are fewer empirical studies on the ability of sense of belonging and instructor support to predict persistence, the few available studies have established their ability to predict persistence.

While social support, instructor support, sense of belonging, and academic self-efficacy are variables positively impacting persistence, stressors and burdens are those that can impeded a student’s path towards graduation. Numerous studies have demonstrated that academic and social stressors strongly predict negative academic and mental health outcomes. However, there are no studies to our knowledge that examine this construct along with those associated with positive outcomes for college students.

### **1.1. Purpose of the study**

The purpose of the present study was to examine whether variables demonstrated to predict persistence for college students in general would do so for a group of college students generally not represented in the literature. Additionally, variables associated with positive and negative academic outcomes are tested together in a single model.

## **2. Method**

### **2.1. Participants**

Participants for this study were 578 college students between the ages of 18 and 51 years (mean age = 18.9,  $SD = 2.15$ ). The majority of students identified as female (69%), first-generation college students (63%) of Hispanic/Latinx ethnicity (78.7%), in their first year of college (72.6%).

### **2.2. Instruments**

Participants completed a survey that included a demographic section and measures assessing the constructs of interest. College persistence was measured with six items from the 53-item College Persistence Questionnaire (CPQ; Davidson et al., 2009), while sense of belonging (SB) was measured using a different set of six items from the same scale. Academic self-efficacy was measured using the College Academic Self-Efficacy Scale (CASES; Owen & Froman, 1988). Academic and social burden was assessed with the Academic & Social Burden Inventory (ASBI; Fernando & Zambrano-Morales, 2010); social support was measured using the Interpersonal Support Evaluation List (ISEL, Cohen & Hoberman, 1983); and instructor support was measured with a scale developed for this study, the Instructor Support Scale (ISS; Zurita-Lopez & Fernando, personal communication, 2019). To conserve space, a table with information about the measures is provided below. All measures demonstrated acceptable reliability (see Table 1 for a summary).

Table 1. Measures completed by participants.

| Name of Scale                          | Construct Assessed                    | Number of Items | Item Scale          | Reliability in this Sample |
|--|---------------------------------------|-----------------|---------------------|----------------------------|
| College Persistence Questionnaire      | Desire to persist in college          | 6 from 53 items | 1 (low) to 5 (high) | .72                        |
| Sense of Belonging Index               | Sense of belonging                    | 6               | 1 (low) to 5 (high) | .67                        |
| College Academic Self-Efficacy Scale   | Academic self-efficacy                | 34              | 1 (low) to 5 (high) | .92                        |
| Academic & Social Burden Index         | Stressors of academic and social life | 35              | 0 (low) to 6 (high) | .89                        |
| Interpersonal Support Evaluations List | Social support                        | 40              | 1 (low) to 4 (high) | .78                        |
| Instructor Support Scale               | Perceived support from an instructor  | 7               | 1 (low) to 4 (high) | .71                        |

### 2.3. Procedure

Participants were recruited from a university in Southern California serving an urban, ethnically-diverse, predominantly Latinx group of college students, the majority of who are first in their family to attend or to complete college. A majority of participants were recruited through a subject pool in which students taking a general education class were registered. These students received an hour of research credit for their participation. Other students were recruited by sending an email to faculty with a link to the survey. These faculty provided a few extra credit points to students who took the survey. The survey was conducted via Qualtrics and took approximately 40 minutes to complete. Data analysis was conducted using SPSS. We tested two regression models, one for first-generation students and another for non-first-generation students, with the same predictors and same outcome.

### 3. Results

Both models tested were significant. For first-generation students, the predictors together accounted for 21% of the variance,  $R^2 = .21$ ,  $F(4, 320) = 21.72$ ,  $p < .001$ , while for non-first-generation students, the predictors accounted for 24% of the variance,  $R^2 = .24$ ,  $F(3, 190) = 19.51$ ,  $p < .001$ . For first-generation students, sense of belonging was the strongest predictor of persistence ( $\beta = .25$ ), with perceived instructor support ( $\beta = .15$ ) and academic self-efficacy ( $\beta = .15$ ) also predicting persistence ( $p < .001$ ). Social support ( $\beta = .12$ ) also significantly predicted persistence, though more weakly ( $p = .02$ ). For non-first-generation students, academic self-efficacy was the strongest predictor of persistence ( $\beta = .28$ ), with sense of belonging ( $\beta = .23$ ) also significant in the model ( $p < .001$ ). Instructor support also significantly predicted persistence, though more weakly ( $p = .03$ ).

### 4. Discussion

The results revealed some similarities as well as some interesting differences in predictors of persistence for first-generation and non-first-generation college students. First-generation students likely benefit more from socioemotional experiences such as sense of belonging and perceived instructor support. Academic self-efficacy also predicts persistence for this group of students. Further analyses indicate that academic self-efficacy mediates the relationship between these socioemotional predictors and persistence, where sense of belonging and perceived instructor support lead to greater academic self-efficacy, which in turn significantly predicts persistence. These results are consistent with research on motivated behavior in low-confidence situations, where the support of ‘experts’ acts as scaffolding for novice learners, whose confidence in their own abilities increase as they interact with the experts on a task (Stehr & Grundmann, 2011). For first-generation students who are not always able to get parental advice on how to navigate the myriad of tasks in college, a welcoming and inclusive campus environment and caring faculty help to keep students returning to campus and finish their degree.

For non-first-generation students, belief in one’s own academic abilities was the strongest predictor, along with feeling that one belonged on campus. Perhaps students whose parents attended and/or completed college have less need for instructor support, as they may be getting that socioemotional as well as practical support from their parents.



An interesting finding was that academic and social burden and social support did not significantly predict persistence for this group of students. A prior study with a similar participant group demonstrated that students with high ASB were significantly more likely to consider dropping out of college, compared to those with low ASB (Fernando & Zambrano-Morales, 2010); perhaps “considering dropping out of college”, as a variable, though related to college persistence, is a different psychological construct from the positive behavior of persisting in college. The lack of findings regarding social support could be due to the similarity of this construct with those of instructor support, and high correlation between the two; variance in the former construct may have been accounted for by the variance in the latter.

## 5. Limitations

The participant pool is not fully representative of the State where the university is located, therefore generalizing the results to a broader population of students warrants caution. The reliability of the Sense of Belonging Index was somewhat low, probably due to the low number of items. Future research should include a scale specifically designed to assess the construct.

## 6. Implications for policy & intervention

The results taken together indicate that institutions of higher education should spend time and resources fostering a sense of belonging among all students. University administration can encourage faculty and staff to create an inclusive environment by funding and showcasing effective strategies that increase sense of belonging. This sense of belonging can counter ‘imposter syndrome’ that many college students experience as they transition from high school to the more rigorous demands of college. Feeling like one does belong to an academic community can keep students persisting even when they may become discouraged or frustrated with themselves or their institution. Additionally, university administrators should encourage and reward faculty who create inclusive environments in their classrooms using pedagogies that welcome all levels of ability, rather than trying to create highly competitive environments where students experience academic failure. Faculty can also incorporate practices that help students to reflect on their academic self-efficacy and work on those areas where they feel less competent. Strengthening a student’s belief that “Yes, I can do this!” will keep students persisting towards their longed-for goal of graduating with their degree, creating a positive upward mobility spiral which has lasting positive effects for their family and larger community.

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# TOWARDS FAIR AND RESPONSIBLE AI: A STUDY USING SWOT AND FOUR-COMPONENT MODEL TO ANALYSE ETHICAL AI IN EDUCATION

**Ruhul Amin Noel, & Gabriele M. Murry**

*Weiden Business School, Institute of Psychology & Behavioral Science,  
Technical University Amberg-Weiden (Germany)*

## Abstract

Some suggest that generative AI tools like ChatGPT can improve student learning, and therefore, educators should modify their teaching and assessment methods to accommodate the new reality of AI's widespread availability (Sullivan, Kelly, & McLaughlan, 2023), others suggest that certain universities have implemented bans on the usage of ChatGPT, leading some academics to view such tools as a "threat" and a "plague on education" (Sawahel, 2023). This study provides one of the first investigations using a SWOT analysis (Benzaghta, Elwalda, & Mousa, 2021) and the Four-Component model in decision-making (Rest, 1986) into how AI, or in this case, particularly ChatGPT or similar AI tools, are disrupting higher education. The focus areas guiding this analysis are to explore the perception of students and lecturers regarding the use of ChatGPT or similar tools as an AI assistant and ii) how students and lecturers perceive the ethical components when using these tools. The respondents were bachelor's and master's level students and lecturers from the Technical University Amberg-Weiden, Germany. The validity of the data was measured against standard quality criteria for quantitative data using SPSS. Depending on the two scenarios presented whether to "accept" AI with certain ethics and guidelines or to "ban" it, knowing that it is counted as cheating (Intelligent, 2023) or risk of increased plagiarism (Koutsoftas, 2023) this paper explores how to deal with the use of ChatGPT or similar AI tools in the future. Considering both points of view, guidelines should be introduced clarifying how AI tools can be integrated into education following certain ethics. Similarly, communicating the necessity for change to the university leadership is needed; also, lecturers should come up with methods of teaching not avoiding AI but using AI as an assistant to learning processes within ethical constraints.

**Keywords:** *Artificial Intelligence (AI), ChatGPT, higher education, ethics.*

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## 1. Introduction

The integration of Artificial Intelligence (AI) has become increasingly prevalent in various fields, including education. The theory of using AI in higher education became a reality (Mollick & Mollick, 2022). This study delves into the exploration of ChatGPT, an AI language model, as a tool for teaching and learning. To gain a better understanding we aim to investigate the potential by conducting a SWOT analysis from both students' and lecturers' user perspectives to understand its capabilities. Through this approach, we identify the strengths, weaknesses, opportunities, and threats associated with the use of ChatGPT in educational experiences. Then, we analyzed how users perceive education while working with ChatGPT applying the Four-Component model. This approach allows us to map the ethical use of ChatGPT in teaching and learning environments and its role in shaping future education. Each of the models used in this analysis is described and evaluated below.

## 2. Theoretical background

AI was first introduced in 1955 by McCarthy, Minsky, Rochester, and Shannon (1955). "Artificial intelligence (AI) is defined as the branch of computer science that is concerned with the automation of intelligent behavior" (Lugar, 2005). AI technology is a broad term that encompasses various intelligent capabilities such as robotics, natural language processing, computer vision, machine learning, and more (Elbana, 2020). The use of AI applications is increasing rapidly (Gkinko & Elbana, 2023). Due to recent advancements in AI and natural language processing technologies, chatbots have become more accessible, versatile, and efficient in terms of implementation, adaptability, and the ability

to simulate human-like conversations (Caldarini, Jaf, & McGarry, 2022). A chatbot is a type of software that can generate responses based on the input it receives, making it capable of simulating human conversations through both text and voice modes of communication (Sojasingarayar, 2020). Nowadays, chatbots are being implemented in a wide range of fields and areas, such as education, e-commerce, healthcare, and entertainment (Caldarini, Jaf, & McGarry, 2022).

ChatGPT (Chat Generative Pre-Trained Transformer), one of the highly advanced chatbots that was launched on November 30<sup>th</sup>, 2022, has quickly become one of the most powerful and popular ones in the market (Farrokhnia, Banihashem, Noroozi, & Wals, 2023). The utilization of Natural Language Processing (NLP) and generative AI has allowed ChatGPT to create text that resembles human-like language and maintain a conversational tone, resulting in more realistic and natural dialogues (Tlili, et al., 2023). The communication format allows ChatGPT to address follow-up questions, acknowledge errors, challenge false premises, and reject unsuitable requests (OpenAI, 2022). Despite its widespread popularity, there is an ongoing discussion among scholars (Mhlanga, 2023) and several editorials (Rospigliosi, 2023) have written about its ethical usage and influence in education.

### 2.1. Strengths, weaknesses, opportunities, and threats

SWOT stands for Strengths, Weaknesses, Opportunities, and Threats often addressed as approach, framework, matrix, model, technique, or tool for analysis (Puyt, Lie, & Wilderom, 2023). SWOT was called SOFT approach in the beginning, which was designed as a tool in one of the earliest strategic planning frameworks. This approach has found extensive application in the field of business and education to guide effective strategic planning and decision making, particularly when it is necessary to consider the views and abilities of different stakeholders (Zhu & Mugenyi, 2015). This analysis provides information from different sources and provides a comprehensive assessment of the strengths and weaknesses internally and opportunities and threats that exist externally. This analytical framework can be particularly helpful in identifying and addressing benefits and challenges related to the integration of new technologies in education (Farrokhnia, Banihashem, Noroozi, & Wals, 2023).

### 2.2. Ethical decision-making

Ethical decision-making (EDM) is well accepted now; therefore, it is crucial to understand the importance of EDM not only in the corporate community but also in academic management and society as a whole (Schwartz, 2016). Several theoretical models have been proposed to explain why people sometimes behave ethically or unethically in various situations and these models draw on different academic fields like philosophy, psychology, economics, and so on. To better understand EDM, it is important to understand the stages which generally start with the initial awareness, leading to moral judgment, forming an intention to act, and finally engaging in a behavior (Rest & Narvaez, 1994). Individuals, when faced with ethical dilemmas, undergo a decision-making process that consists of four components; moral awareness, which is the realization of a scenario, to moral judgment, which is the assessment, and then they move to moral intention, which involves how to act, and finally, moral action, which is the actual behavior (Lincoln & Holmes, 2007).

### 2.3. Conceptual framework

Research in Generative AI (GenAI) applications (Peres, Schreier, Schweidel, & Sorescu, 2023), which is a type of AI technology that creates new and unique outputs, is ongoing in business and higher education (Chiu, 2023). There have been various reports, journals, and posts published regarding the benefits of using ChatGPT. We conducted a semantic search using various keywords such as “AI in education”, “ChatGPT in education”, and “ethical use of ChatGPT”. Our focus was on articles published in the year 2023, and we found multiple articles (see Figure 1).

After studying relevant theories, we formulated research questions and hypotheses (see Table 1) that we will analyze in this paper.

Figure 1. Semantic search on most recent research (Litmaps, 2024).

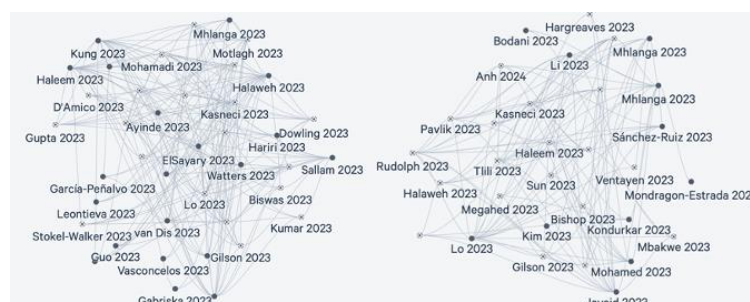


Table 1. List of research questions and respective hypotheses.

| <i>RQ<sub>1</sub></i>   | <i>H<sub>1</sub></i>  | <i>H<sub>2</sub></i>  |
|---|---|---|
| What is the perception of students and lecturers regarding the use of ChatGPT or similar tools in an educational setting?                                       | Students will generally view the use of ChatGPT in an education setting as a valuable tool for learning               | Lecturers will perceive ChatGPT as a useful aid in teaching and are anticipating educational settings will benefit positively |
| <i>RQ<sub>2</sub></i>   | <i>H<sub>3</sub></i>  | <i>H<sub>4</sub></i>  |
| How do students and lecturers prioritize the four ethical decision-making components when incorporating ChatGPT into their learning and teaching methodologies? | There are significant differences in the ethical decision-making patterns between students and lecturers in their use | Students believe that lecturers should be more transparent in guiding them on the incorporation of ChatGPT into learning      |

### 3. Methodology

To answer the aforementioned research questions and hypotheses, we began by gathering data from students and lecturers. We used a paper-pencil method to obtain accurate responses (Bates & Cox, 2007) and have included demographic details in Table 2. A total number of diverse students (n=77) and lecturers (n=16) participated in this study. Students were asked questions regarding their usage of ChatGPT as a learning tool and lecturers were asked about their use of ChatGPT for research and content creation for teaching. Subsequently, we measured the validity of our data against standard quality criteria for the quantitative data using SPSS.

Table 2. Demographic details of participants.

| Demographics- Students | n  | %   | Demographics- Lecturers | n  | %     |
|------------------------|----|-----|-------------------------|----|-------|
| Total                  | 77 | 100 | Total                   | 16 | 100   |
| Male                   | 47 | 61  | Male                    | 6  | 40    |
| Female                 | 30 | 39  | Female                  | 10 | 60    |
| Nation                 |    |     |                         |    |       |
| Bangladesh             | 12 | 15  | Bangladesh              | 03 | 18.75 |
| Germany                | 10 | 13  | Germany                 | 13 | 81.25 |
| India                  | 09 | 12  |                         |    |       |
| Nigeria                | 08 | 10  |                         |    |       |
| Pakistan               | 13 | 17  |                         |    |       |
| Sri Lanka              | 02 | 03  |                         |    |       |
| Others*                | 23 | 30  |                         |    |       |

\*Algeria, Burma, China, Egypt, Kenya, Laos, Morocco, Myanmar, Romania, Russia, Syria, Taiwan, Tunisia, Vietnam

### 4. Data analysis

To answer the aforementioned research questions and hypotheses, we began to evaluate the collected data sets and ran several analyses on SPSS. To evaluate RQ<sub>1</sub> regarding the use of ChatGPT and similar tools in educational settings as perceived by students and lecturers, we considered the means for H<sub>1</sub>. The cluster of items dealing with the strengths and opportunities of ChatGPT as a research and inspirational tool all provided mean values between  $\bar{x} = 2,68$  and  $\bar{x} = 3,19$  on a 4-point-Likert scale with 1=strongly disagree and 4=strongly agree. Therefore, H<sub>1</sub> can be accepted.

H<sub>2</sub> also serves to answer RQ<sub>1</sub>, since it dealt with lecturers' perception of the use of ChatGPT or similar AI tools as a useful aid in teaching. Based on the means of the frequency distribution ranging from  $\bar{x}=2,63$  to  $\bar{x}=3,44$ , it becomes apparent, that the lecturers also anticipate AI to be an advantageous assistance in their educational settings. Therefore, H<sub>2</sub> can also be accepted.

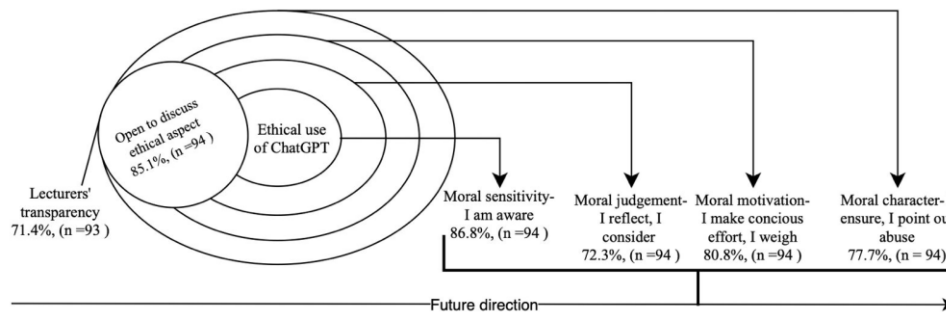
For RQ<sub>2</sub>, we wanted to find out about ethical concerns in students' and lecturers' usage of AI. To assess this, we conducted a two-sided independent sample t-test between the data sets of the two groups. None of the items evaluated concerning ethical decision-making patterns provided significant differences ( $\alpha = 0.05$ ) between students and lecturers. Therefore, H<sub>3</sub> needs to be rejected.

Furthermore, H<sub>4</sub> dealt with the belief of students' perception that more guidance by lecturers is needed concerning the use of AI. Here, the data revealed that a  $\bar{x}=3,52$  indicates a very strong need of the students requiring guidance and information about the proper and ethical use of AI in their educational journey. Therefore, H<sub>4</sub> can be accepted.

## 5. Discussion, limitations, and future research

Students and lecturers expressed a notable interest in incorporating ChatGPT into academic settings. However, ethical considerations played a significant role in their decision-making (Figure 2). Results also indicated a high level of moral sensitivity, judgement, motivation, and desire to take action regarding using the AI tools in academic settings. Furthermore, students exhibit a willingness to engage in open discussions surrounding the ethical aspects of using ChatGPT. Additionally, there is an expectation among students that lecturers should provide transparency regarding how ChatGPT can be appropriately utilized within the educational context.

Figure 2. Model: Integrated ethical usage of ChatGPT (own illustration).



Therefore, we highly recommend educational institutions act accordingly and provide role modeling in the use of AI. This can take the form of ethics commissions or statutes provided to the students. The first important overarching step in this direction was made by the European Union in December 2023, when the EU AI Act was passed in the European Parliament (News European Parliament, 2023).

### 5.1. Limitations

The small sample size from only one university in Bavaria as well as a limited number of lecturers participating pose limitations on the research. It would be imperative to connect between universities and develop a (joint) policy or to compare with other universities and also other continents and see if there is already a policy in place.

### 5.2. Future research

While this topic is very new, it is nonetheless apparent that a great need exists to explore AI's ethical use further. Whether it is in the domain of text production or in the area of graphic developments, AI will disrupt creative use and academia further. Integrated ethical decision-making using ChatGPT and continuous feedback from users to improve may result in more responsible and ethical integration of this valued tool in the educational environment.

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# FACILITATORS AND BARRIERS IN THE USE OF DIGITAL TOOLS FOR ADOLESCENTS AND YOUNG ADULTS WITH DISABILITIES OR TROUBLES

**Florent Halgand<sup>1,2,3</sup>, Dorothée Trotier<sup>1</sup>, Guillaume Souesme<sup>1,2,3</sup>,  
Sophie Pivry<sup>1</sup>, & Célia Maintenant<sup>1</sup>**

<sup>1</sup>*Laboratoire de Psychologie des Âges de la Vie et Adaptation (PAVeA – EA2114),  
Université de Tours, 37000 Tours (France)*

<sup>2</sup>*Centre Interdisciplinaire de Recherche en Réadaptation et Intégration Sociale (CIRRIS),  
Québec (Canada)*

<sup>3</sup>*Laboratoire de Psychologie, Université de Franche-Comté, F-90000 Belfort (France)*

## Abstract

*Introduction:* Digitalization changes in many ways how we connect to other people and how we live in society. On the one hand, information and communication technologies (ICT) carry a risk of marginalization, especially for people with disabilities or troubles. On the other hand, ICT can mediate the relationship to other people and extend social ties. The study aimed to identify the psychological barriers and facilitators to the use of ICT by adolescents and young adults with disabilities or troubles. *Methods:* 9 adolescents and young adults (44% men, Mage=17.1 years; SD=2.3) were recruited in Educational and Medical Institute and Medical-Psycho-Pedagogical Centres. Semi-structured interviews were administrated, and a qualitative content analysis was performed using the recommendations of Braun and Clarke (2012). Participants were asked about their use of ICT, how they feel when they use it, what motivates them to use ICT and what kind of difficulties they have to deal with. *Results:* Preliminary results show that the main ICTs used are the telephone (9), computer (9) and tablet (7). The main uses are for entertainment, communication and schooling. Three major themes emerged: *Representation of ICT, Perception of available resources and Individual and environmental component.* For participants, using ICT makes their everyday life easier and provides moments of pleasure. Then, they note that their curiosity and the autonomy that ICT gives supports their desire to use it. The main difficulty encountered is the lack of competence with ICT. In these situations, participants report feelings of anger, stress, and frustration. These feelings lead to a drop in self-confidence and self-esteem. Furthermore, the perceived risks of ICT are a hindrance. The main risks mentioned were addiction, inappropriate content, and piracy. *Conclusion:* This study identified both barriers and facilitators associated with the use of ICT by adolescents and young adults with disabilities or troubles. These results show that for them, ICTs are important for their sociability and sense of belonging. It is therefore necessary to support them and facilitate their learning of ICT to encourage their use, so that they feel confident and secure. Interviews show how they are motivated to use ICT. A good support could reduce the barrier and allow them to take full advantage of ICT.

**Keywords:** *Adolescent, disabilities, qualitative study, ICT, troubles.*

## 1. Introduction

In France, as elsewhere in the world, digitization has made great strides in recent decades, increasing the use of information and communication technology (ICT). Although equipment rates are rising every year, particularly for smartphones, the difficulties associated with using ICTs are also increasing (Baromètre du numérique, 2021, 2022). A major risk of digitalization is therefore the marginalization of those who do not master ICT. What is more, digital technology is a means of connection, socialization and autonomy, all of which are necessary for the development of adolescents and young adults (Borca, Bina, Keller, Gilbert, & Begotti, 2015). Its involvement in the development of adolescents, both in terms of its positive aspects and in terms of problematic use (addiction, exposition to inappropriate content, etc.), is the subject of scattered studies and needs to be developed (Borca et al., 2015; Samhel, Wright, & Cernikova, 2022; Stavropoulos, Motti-Stefanidi, & Griffiths, 2022). While there does not appear to be a link between personality traits and the use of ICT (Mark, & Ganzach, 2014) psychological troubles



seem to encourage problematic use of ICT. (Williams, Sindermann, Yang, Montag, & Elhai, 2023). More than the risk of marginalization, the use of ICTs is a double-edged sword: on the one hand, it can promote the development of adolescents and their well-being, but on the other, it can also be a source of harm in case of misused (Lai et al, 2022). To the best of our knowledge, no study has used the psychological angle to study the relationship between ICT and adolescents with disabilities or troubles in France. This is the aim of the first phase of the NuméVie project. In this study, we will look at the relationship between adolescents and young adults with disabilities or troubles and ICT through a qualitative study. The aim of this exploratory study is to understand, through semi-structured interviews, the psychological barriers and facilitators of the use of ICT.

## 2. Method

### 2.1. Participants

Participants were recruited in Educational and Medical Institute (IEM) and Medical-Psycho-Pedagogical Centres (CMPP) in Tours, France. Inclusion criteria were: (1) being age between 15 and 25, (2) being French speaker since minimum 5 years, (3) taking care in CMPP or IEM. Exclusion criteria were (1) minor participant without parental or legal tutor authorization and (2) completion of the entire interview and questionnaire, with missing information excluding the participant.

### 2.2. Procedure

We used individual face-to-face semi-structured interviews with participants, either at the university of Tours or in a quiet place in the institute (CMPP or IEM) that remained undisturbed during the interview to maximize comfort. At the end of the interviews, participants provided sociodemographic information. The interview guide was drawn up by the research team which consisted of experts and researchers with expertise in psychology. To ensure accurate understanding of the terms in French for all the population considered in the study, the interview guide used the term “digital tools” (*outils numériques* in French) to refer to “ICT” and the latter is the term used systematically in the writing of this chapter.

### 2.3. Analysis

Content analysis was carried out by the first author (FH, engineer and expert in qualitative methodology) as proposed by Braun and Clarke (2012) using NVivo 12-QSR International software. The analysis focused strictly on the data that derived from the verbatim transcriptions.

## 3. Results

### 3.1. Descriptive

Present sample included 9 adolescents and young adults (4 men and 5 women, from 14 to 22 years, Mage=17.1 years; SD=2.3): 5 treated in CMPP for behavioural and learning troubles, 4 treated in IEM for cerebral palsy and associate troubles. The interviews ranged in length from 30 minutes to 1.5 hours (M=45min). The ICT used by participants are smartphones, computers and tablets. The main uses were for communication, entertainment and school. *Table 1* presents participants characteristics in terms of age, gender and institution.

### 3.2. Thematic analysis

In our sample, 3 majors themes emerged. The first theme was the *representation of ICT*, understood as the perception of ICT linked to their experiences and expectations with regard to ICT. The facilitators were considered as *making everyday life easier and increasing opportunities*, increasing the ability to communicate with family and friends, particularly for teenagers with disabilities, with devices such as voice assistance (“I write a bit better than when I was at primary school, by hand. (...) I'm dyslexic anyway, I can't write straight, that's why I got a computer” P3; “I think it's great that we're dematerializing everything because it's much more practical” P5). ICT were also seen as a *source of entertainment*, providing moments of pleasure and escape (“For me, what motivates me is watching videos, going on the Internet, seeing what interests me” P1; “To watch videos on YouTube, that sort of thing. I use digital tools mainly for entertainment purposes.” P9; “I play a lot of Assassin's Creed, (...) a game based on adventure and old moments in history, which I think is wonderful.” P3). For this theme, the factors that could be a facilitator and a barrier were *perceived ease* and *expectations of ICT*, respectively. *Perceived ease* varies according to the intuitiveness of ICT and their accessibility, but also their perceived complexity and therefore the effort required to master them (“I know how to use it, so now it's easy to search on Google or something.” P9; “it's a bit complicated to do the research and so on” P7). *Expectations*

of ICT represented the gap between what they perceived it would be possible to do and the tools currently available to them. These expectations ranged from simple improvements in the performance of existing equipment to the introduction of new equipment, in particular to overcome difficulties linked to disabilities (“I’d like, like, what I’m looking for in the future, I’d really like better voice recognition software that can, that can overcome my speech difficulties.” P4 “Tools that recognize requests and that, for example, I want to go, I want to go to a yoga class, what is the best way if I have to, if I can’t walk or... what do you think is the best way to get there?” P4). Lastly, the barriers linked to the first theme were *risk awareness and poor experience and perceived reliability* of ICT. ICT and online spaces are at risk of problematic behaviour, exposure to inappropriate content and cyberbullying. These negative experiences were a source of alienation from ICT (“You become too addicted. I know that social networking in general is very addictive.” P5; “Boys coming up to me when I’m not even their age (...) they’re always coming up to me when I say ‘no, I don’t want to’ and all that, and they don’t really understand.” P9). Finally, *perceived reliability* was related to the risk of malfunctioning, which limited the confidence placed in the ICT (“Fear because, well, if it crashes, well, I’m afraid of losing my phone or of losing what’s inside it, and even phones in general have value.” P7).

The second theme was the *perception of available resources*. The facilitators mentioned by the participants were the *social support*, who provided a link with those around them to pass on knowledge, and the help they can give each other on the various ICT (“if I’m still discovering things today, that my father, he shows me little subtleties” P7). Participants reported a *willingness to learn*, which often translates into the possibility for ICT to provide sources for personal learning (“I’m going to help my Internet problems via the Internet (*laughs*)” P3). The *quality of training* was a sub-theme that can act as both a facilitator and a barrier. For some, the training they received is comprehensive and enables them to make good use of ICT (“We have technology classes, so it’s true that that helps a lot.” P8), while for others it was superficial, limiting their use (“I know we’d had very quick lessons on it, but pfft, it never goes into any depth.” P5). The barrier mentioned for the second theme was the difficulties linked to their *lack of knowledge* (“I know I can do the basics, but other than that I don’t necessarily know my way around.” P5).

The third theme was the *Individual and environmental component*, which surrounds and influences their use of ICT. The facilitators were the *will to do by themselves*, the *tendency to explore and be curious*, the *desire to learn*, the *feeling of success* and the *obligation* to use the ICT. The *will to do by themselves* and the *tendency to explore*, corresponded to a desire for autonomy, understanding and individual experimentation with ICT (“I like to be alone in my digital mastery” P4; “I can do it, but you have to give me a bit of time, you can’t force me to do it. The more you force me, the less I’m going to do it.” P9). Then, the *desire to learn* was a driving force for those who want to improve their ICT skills (“When there’s the slightest thing that could be exciting, I go straight to it without necessarily thinking.” P3). Finally, the *feeling of success* was evoked by the participants when they manage to master the ICT and overcome the difficulties they have encountered, which maintains their desire to use them (“sometimes I discover things on my computer that I didn’t know were possible and then I’m happy because I’ve discovered something, and I’ve made it work” P7). Subthemes that could be both facilitators and barriers, we identified *emotional management*, *acceptance of difficulties* and *distance from ICT*. These three sub-themes refer to ways of managing and coping with the difficulties presented by ICT, but also entail a risk of detachment (“I’ll stop or I’ll carry on and go even more crazy. (*laughs*)” P6). Finally, for the third theme, the barriers were *difficulties due to troubles or disabilities*, which require specific support to overcome (“I still can’t handle a mouse” P4) and *give up* in the face of the difficulties encountered (“I’ll stop and move on. Or I give up for good and come back in a few months.” P6).

#### 4. Discussion and conclusion

The aim of this exploratory qualitative study was to identify the psychological facilitators and barriers to the use of ICT by adolescents with disabilities or troubles. Through thematic analysis, three major themes emerged, namely (1) *Representation of ICT*, (2) *Perception of available resources* and (3) *Individual and environmental component*.

The majority of adolescents perceived ICT as beneficial for them, as it fosters a bond with their loved ones and could compensate for their difficulties. However, they were not unaware of the risks associated with ICT. These results support the idea of the double edge-sword (Lai et al, 2022). ICT is seen as a means of sharing and communicating with peers, which is necessary for the development of adolescents. The downside was that ICT can expose people to risks such as piracy or cyberbullying, leading them to move away from or abandon ICT.

Support from family and friends was one of the most important facilitators. Help from family and peers was a way of learning and coping with difficulties encountered with ICT. Support from adults with good digital literacy reduces the risks associated with ICT (Adigwe & Van der Walt, 2020). The main obstacle mentioned was the lack of knowledge of ICT and the need to learn more, which links in with the generally positive view of ICT.

Finally, the development of autonomy is a feature of the transition from adolescence to adulthood. (Noom, Deković, & Meeus, 2001). The teenagers interviewed expressed a desire for autonomy and self-sufficiency in mastering ICT.

Our results are in line with those of Borca et al. (2015) on the use of internet by Italian adolescents. They also identified that adolescents maintain their links with peers and their autonomy via ICT. It can therefore be said that supporting the proper appropriation of ICT by adolescents is a way of fostering their development and well-being (Borca et al. 2015; Smahel et al, 2022).

The main limitation of this study was the small interview sample. The aim of this exploratory work was to initiate further studies to gain a deeper understanding of the relationship between adolescents with disabilities or troubles and ICT.

Then, we interviewed adolescents being followed in CMPP and IEM. This study provides new knowledge on the relationship between ICT and adolescents with disabilities or troubles. We did not focus on the diagnostic criteria for disabilities or troubles to include them in this study. Adolescents in the IEM all spoke of ICT as a concrete way of improving their daily lives and their expectations of more effective and better adapted ICT. Future research could explore adolescents' relationship with ICT using more precise diagnostic criteria to refine our knowledge and encourage the development of appropriate and effective tools.

In conclusion, ICT is an important factor in the development and lives of today's adolescents with disabilities or troubles. We have shown that adolescents were interested in using ICT. Although there were risks involved, with the right support, the use of ICT could be complete and more beneficial.

Table 1. Participants.

| Participant | Institution | Age | Gender |
|-------------|-------------|-----|--------|
| P1          | IEM         | 18  | Man    |
| P2          | IEM         | 18  | Woman  |
| P3          | IEM         | 22  | Man    |
| P4          | IEM         | 18  | Man    |
| P5          | CMPP        | 17  | Woman  |
| P6          | CMPP        | 15  | Man    |
| P7          | CMPP        | 16  | Woman  |
| P8          | CMPP        | 15  | Woman  |
| P9          | CMPP        | 14  | Woman  |

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## EARLY DIAGNOSIS AND INTERVENTION OF DEVELOPMENTAL DYSLEXIA AT THE PRESCHOOL AGE: THE ROLE OF STRESS

Victoria Zakopoulou<sup>1</sup>, Elena Venizelou<sup>1</sup>, Christos-Orestis Tsiantis<sup>2</sup>, Alexandros Tzallas<sup>3</sup>, George Dimakopoulos<sup>4</sup>, & Maria Syrrou<sup>2</sup>

<sup>1</sup>Department of Speech and Language Therapy, University of Ioannina (Greece)

<sup>2</sup>Laboratory of Biology, Faculty of Medicine, University of Ioannina (Greece)

<sup>3</sup>Department of Informatics & Telecommunications, School of Informatics & Telecommunications, University of Ioannina (Greece)

<sup>4</sup>BIOSTATS, Science and Technology Park of Epirus (Greece)

### Abstract

Developmental dyslexia (DD) is a multifactorial, specific learning disorder characterized by various interactions of dysfunctions of biological, neurophysiological, cognitive, and psychomotor factors. In this study the association between the early signs of DD and stress was investigated. Polymorphisms/variants that affect the expression levels of HPA axis related genes - that are involved in the regulation of stress response- were studied along with the mitochondrial DNA copy number (mtDNAcn), a sensitive stress biomarker. 314 children aged 5.0 to 6.0 years were recruited, while 20 preschoolers were identified 'at risk' of dyslexia, along with 10 typically developed preschoolers (control group). From the 'at risk' of DD group 10 individuals underwent a 3-month systematic intervention program. Two screening tests for early identification of DD were administered, while a developmental history and the CBCL 1½-5 form of the Achenbach System of Empirically Based Assessment (ASEBA) were completed. Buccal DNA was extracted. Genotyping of variants of HPA axis genes was performed along with mtDNAcn estimation before and after the intervention in all participants.

Multivariate analysis was applied between all variables between the three groups. A statistically significant difference was observed between the DD and typically developed group on cognitive, psychomotor, and linguistic factors, along with similar statistically significant difference recorded within the DD group before and after the intervention. Although no statistically significant difference was observed before the intervention in mtDNAcn, after the intervention, a statistically significant difference was observed in the intervention group compared to the other 2 groups. Early dysfunctions in specific factors are revealed in a complex framework of interactions, shaping an early DD phenotype. Stress is considered to play an important role in the early occurrence of DD. Early detection of DD in preschool becomes more urgent as it contributes to the implementation of effective interventions, thereby reducing or preventing multiple negative effects in later school age.

**Keywords:** *Developmental Dyslexia, early identification, early intervention, multifactorial phenotype, stress.*

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### 1. Introduction

Developmental dyslexia (DD) is a multifactorial, specific learning disorder characterized by multiple dysfunctions of one or more, biological, neurophysiological, psychomotor, cognitive, and socioemotional factors (Livingston et al., 2018). The onset of symptoms of DD, while systematically recorded and addressed during the school age, becomes apparent from the preschool age onwards (Zakopoulou et al., 2023). Several independent studies support that frustration, failure and difficulties caused by learning difficulties, create a constant fear of failure or real failure, sadness, inadequacy, reduced happiness and self-esteem, stress, anxiety, emotional vulnerability (Exarchou et al., 2020; Peterson, 2021; Zakopoulou et al., 2019). All these matters can influence an individual's predisposition to DD, regardless of the presence or absence of genetic variations in risk genes (Romeo et al., 2018). In the context of DD etiopathogenesis, stress is considered as an important factor (Theodoridou, et al., 2021), presumably underlying a dysregulation of the HPA axis (Kershner, 2020). *FKBP5*, the overexpression of SNV rs1360780 inside intron 2 of the gene, the levels of *SLC6A4*, 5-HTTLPR polymorphic region,

rs25531 SNV inside the gene's promoter region, and the mitochondrial DNA copy number (mtDNAcn), a sensitive stress biomarker, influence the response to stress (Palma-Gudiel & Fananas, 2017).

However, regarding the study of the existence of an early interactive relationship between stress and DD, as well as the importance of this interaction in a multifaceted understanding of the endophenotype and phenotype of DD, a critical literature gap is highlighted.

## 2. Objectives

Aiming to a comprehensive understanding of this phenotype, the purpose of this study is to investigate the early role of stress in this network of strongly interrelated difficulties, through an innovative research protocol.

## 3. Methods

In this paper we present the results of the analysis investigating the association between the early signs of DD and the HPA axis genes involved in the regulation of stress response and the polymorphisms/variants affecting their expression levels, while mitochondrial DNA copy number (mtDNA cn), a sensitive stress biomarker, was also evaluated.

### 3.1. Data acquisition

307 children aged 5.0 to 6.0 years participated in this study, consisting of three testing groups, as follows: 10 preschoolers were identified 'at risk of DD with intervention' (they underwent a 3-month systematic intervention program), 10 'at risk of DD without intervention' (they underwent no intervention program), and 10 typically developed preschoolers, 'without DD'. In no one of the subjects was recorded co-occurrence with other neurodevelopmental disorders. Written consent forms were obtained from all parents of the children who participated on a voluntary basis.

**3.1.1. Material.** Towards early identification of DD, the test of Early Dyslexia Identification (EDIT) (Zakopoulou, 2003) and the ATHINA test (Paraskevopoulos et al., 1999) were administered. Seeking to compare any early signs of DD with early internalizing and externalizing problems (Emotionally Reactive, Anxious, Depressed, Aggressive Behavior, Attention Problems, Somatic Complaints, and Withdrawn), a developmental history and the Greek version of the Child Behavior Checklist for Ages 1½ to 5 (CBCL 1½-5) of the Achenbach System of Empirically Based Assessment (ASEBA) (Roussou, 2009) were completed.

Through the EDIT test three sectors (including 8 tasks) were examined, considering: (i) Visual-spatial Abilities (Sketching, Copying shapes, Visual discrimination/Laterality/Left-right discrimination), (ii) Grapho-phonological Awareness (Phonemes Composition; Phonemes Discrimination; Name Writing) and (iii) Working Memory (Phonemes Discrimination, Name Writing, Copying shapes, Visual-verbal correspondence). Through the ATHINA test one sector (Short-term Sequence Memory (Numbers Memory, Pictures Memory, Shapes Memory) was examined. To examine the role of the stress at the molecular level, DNA from buccal cell swabs was extracted from all subjects: (a) mtDNAcn was evaluated by qPCR, using primers to target the nuclear DNA and mtDNA. One sample from the "at risk of DD with intervention" group was considered an outlier and removed from the analysis; (b) rs1360780 was genotyped using a TaqMan assay (Thermo Assay ID: C\_8852038\_10, #4351379, Applied Biosystems, Foster City, CA), while 5-HTTLRP and rs25531 were analyzed using a polymerase chain reaction-restriction fragment length polymorphism (PCR-RFLP) assay.

### 3.2. Statistics

Multivariate analysis was applied between all variables between the three groups. Data were examined for normality distributions, and non-parametric tests were used in cases where data did not follow Gaussian distribution.

## 4. Results

A statistically significant difference was observed between the DD and typically developed group on cognitive, psychomotor, and linguistic factors, along with similar statistically significant difference recorded within the DD group before and after the intervention (see table 1).

Table 1. Differences between the groups of children at risk of DD with intervention and children without early signs of DD.

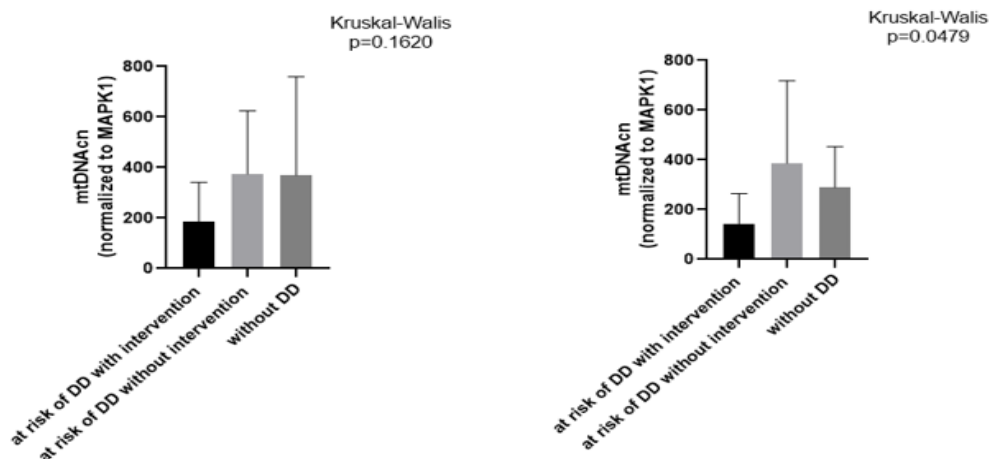
| Tested Skills | Groups                          |      |        |       |       |            |      |        |       |       |
|---------------|---------------------------------|------|--------|-------|-------|------------|------|--------|-------|-------|
|               | At risk of DD with intervention |      |        |       |       | Without DD |      |        |       |       |
|               | Mean                            | SD   | Median | Range | P     | Mean       | SD   | Median | Range | P     |
| Sk_initial    | 2.90                            | 2.51 | 2.50   | 6.00  | 0,007 | 8.90       | 3.41 | 9.50   | 12.00 | 1,000 |
| Sk_final      | 6.80                            | 2.70 | 8.00   | 7.00  |       | 8.90       | 3.41 | 9.50   | 12.00 |       |
| Csh_initial   | 2.80                            | 2.44 | 2.00   | 8.00  | 0,012 | 7.50       | .97  | 8.00   | 3.00  | 1,000 |
| Csh_final     | 6.30                            | 1.34 | 6.00   | 4.00  |       | 7.50       | .97  | 8.00   | 3.00  |       |
| VD_initial    | 5.70                            | .48  | 6.00   | 1.00  | 0,317 | 5.90       | .32  | 6.00   | 1.00  | 1,000 |
| VD_final      | 5.90                            | .32  | 6.00   | 1.00  |       | 5.90       | .32  | 6.00   | 1.00  |       |
| L_initial     | 5.20                            | 2.57 | 6.00   | 8.00  | 0,227 | 5.90       | 2.96 | 6.00   | 10.00 | 1,000 |
| L_final       | 6.00                            | 2.91 | 5.50   | 8.00  |       | 5.90       | 2.96 | 6.00   | 10.00 |       |
| L-R_initial   | 2.50                            | 1.18 | 2.50   | 4.00  | 0,238 | 2.00       | .82  | 2.00   | 3.00  | 1,000 |
| L-R_final     | 2.50                            | 1.18 | 2.50   | 4.00  |       | 2.00       | .82  | 2.00   | 3.00  |       |
| NW_initial    | 2.80                            | 1.93 | 3.50   | 5.00  | 0,007 | 7.70       | .48  | 8.00   | 1.00  | 1,000 |
| NW_final      | 5.90                            | 1.85 | 6.00   | 5.00  |       | 7.70       | .48  | 8.00   | 1.00  |       |
| PhD_initial   | 6.50                            | .71  | 7.00   | 2.00  | 0,005 | 9.50       | .71  | 10.00  | 2.00  | 1,000 |
| PhD_final     | 8.90                            | .74  | 9.00   | 2.00  |       | 9.50       | .71  | 10.00  | 2.00  |       |
| V-VC_initial  | 1.60                            | 2.32 | .00    | 6.00  | 0,068 | .00        | .00  | .00    | .00   | 1,000 |
| V-VC_final    | .00                             | .00  | .00    | .00   |       | .00        | .00  | .00    | .00   |       |

Note. Sketching= Sk; Copying shapes=Csh; Visual discrimination=VD; Laterality=L; Left-right discrimination=L-R; Name Writing=NW; Phonemes Discrimination=PhD; Visual-Verbal correspondence=V-VC

From the Buccal DNA analysis, the following results were recorded:

I. mtDNA copy number: although no statistically significant difference was observed before the intervention in mtDNAcn between the three groups, after the intervention, statistically significantly lower mtDNAcn levels were recorded in the group *at risk of DD with intervention*, compared to the other 2 groups, (Kruskal Wallis,  $p=0.048$ ) (see figure 1). Specifically, as we see in the table, the measurements are based on groups but also the time. The changes that were observed across time are in all cases non-significant even though the central tendency expressed by the median is indicative of differences. The main statistically significant difference recorded was between the *'at risk of DD with intervention' group and the 2 other groups, where significantly smaller values of stress were detected* ( $p=0.048$ ).

Figure 1. mtDNA copy number differences between the three groups at the initial and final testing state (after three months)



I. Genotyping of variants of stress related genes: Although the “risk” alleles are more common in the dyslexia group, no statistically significant difference is observed (see table 2).

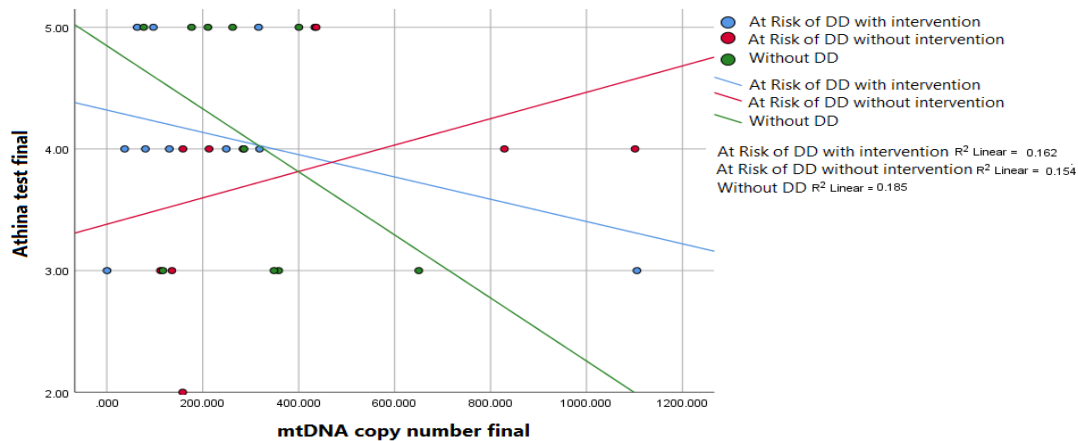
Table 2. Allelic frequencies of genotyped variants (risk alleles are in bold).

|                  | At risk of DD<br>(n=20) | Without DD<br>(n=10) | <i>p</i> | At risk of DD<br>(n=40) | Without DD<br>(n=20) | <i>p</i> |
|------------------|-------------------------|----------------------|----------|-------------------------|----------------------|----------|
| <i>SLC6A4</i>    | SS (5/20 - 25%)         | SS (1/10 - 10%)      | 0,775    | S (19/40-47,5%)         | S (7/20-35%)         | 0,519    |
| 5-               | SL (9/20 - 45%)         | SL (5/10 - 50%)      |          | L (21/40-52,5%)         | L (13/20-65%)        |          |
| <i>HTTLRP</i>    | LL (6/20 - 30%)         | LL (4/10 - 40%)      |          |                         |                      |          |
| <i>FKBP5</i>     | CC (8/20 - 40%)         | CC (6/10 - 60%)      | 0,633    | C (27/40-67,5%)         | C (16/20-80%)        | 0,478    |
| <i>rs1360780</i> | CT (11/20 - 55%)        | CT (4/10 - 40%)      |          | T (13/40-32,5%)         | T (4/20-20%)         |          |
|                  | TT (1/20 - 5%)          | TT (-)               |          |                         |                      |          |
| <i>SLC6A4</i>    | AA (17/20 - 85%)        | AA (9/10 - 90%)      | 1        | A (37/40 - 92,5%)       | A (19/20 - 95%)      | 1        |
| <i>rs25531</i>   | AG (3/20 - 15%)         | AG (1/10 - 10%)      |          | G (3/40 - 7,5%)         | G (1/20 - 5%)        |          |
|                  | GG (-)                  | GG (-)               |          |                         |                      |          |

II. Furthermore, the effect of several indices was examined on these differences. Specifically, the observed mtDNA measurements were examined for differences depending on the presence of internalizing and externalizing problems, according to the answers on CBCL 1½-5. None of these had a statistically significant effect on mtDNA values, before or after the intervention or to their change.

III. A series of correlations were also examined between scores at the EDIT and ATHINA test with the mtDNAcn values and the mtDNAcn observed changes. A statistically significant and positive correlation was observed for the group ‘at risk of DD without intervention’ highlighting a positive correlation between the persistence of the difficulties and an increase in stress. Regarding the mtDNA changes not statistically significant and correlations were observed for any group.

Figure 2. Correlations between ATHINA scores and mtDNAcn values at the final testing stage.



#### 4. Discussion

Children ‘at risk’ of DD meet difficulties in a wide range of skills in a complex framework of interactions, shaping an early DD phenotype. The main aim of the current study was to investigate the role of the stress in the early DD phenotype. Based on the results of this study, we see that the children who were diagnosed at risk of DD at the initial testing stage, showed a statistically significant improvement in all the domains that initially had recorded low scores, after the implementation of the intervention. The findings underscored that the stress-related risk alleles are more common in children at risk of DD, while mtDNAcn displayed lower levels in the “at risk of DD with intervention” group and did not show statistically significant differences with typically developing children before the intervention. Despite these low levels of mtDNAcn, a reduction in mtDNAcn was observed after the intervention, indicating that early intervention programs contribute positively to minimizing stress levels, confirming relevant research findings. Adding to this, the significant correlation observed between stress and the persistence of difficulties in specific domains, such as working memory, rather confirms the Horbach’s et al., (2019) statement that internalizing problems increase numerically during the transition from



kindergarten to elementary school. In the light of these findings, it is highly suggested that DD phenotype is a stress-related phenotype that could help to alleviate negative psychological conditions, such as stress, and to prevent the development of behavioral problems.

## 5. Conclusions

A stress-related DD phenotype indicate the existence of powerful mechanisms that negatively influence the reduction or prevention of multiple later school age difficulties and personality effects in individuals with DD.

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## DIFFERENT ASPECTS OF IDENTITY AND ETHNIC SOCIALIZATION PRACTICES OF PARENTS IN SERBIA \*

**Milena Belić<sup>1</sup>, Hana Sejfović<sup>1</sup>, & Đerđi Erdeš-Kavečan<sup>2</sup>**

<sup>1</sup>*Department of Philosophical Sciences and Arts, State University of Novi Pazar (Serbia)*

<sup>2</sup>*Vocational Studies in Psychology - College of Vocational Studies for the Education of Preschool Teachers and Sports Trainers, Subotica (Serbia)*

### Abstract

In order to promote multiculturalism and reduce tensions in the multi-ethnic society of the Republic of Serbia, it is important to examine how parents shape their children's ethnic identity. Ethnic identity is a personal, self-categorizing concept in which an individual identifies with an ethnic group and its beliefs, values, and origins. Ethnic socialization is a process of learning about and making meaning out of one's ethnic heritage. The aim of this research is to examine the practices of ethnic socialization and various aspects of identity of parents of different ethnic origins. The sample consisted of 501 parents of high school students (75% women) of different ethnicities living in the territory of the Republic of Serbia. Parents reported their ethnic socialization practices using the 15 items Ethnic Socialization Scale referring to four underlying dimensions of ethnic socialization: Cultural Socialization, Preparation for Bias, Promotion of Mistrust and Pluralism. Belonging to certain groups, as a determinant of identity, was assessed by parents using the Social Identification Scale (SOCID) - a 5-point Likert scale with 9 items, and the groups included: belonging to gender, ethnic belonging, belonging to a religious group, belonging to a family, a group of friends and geographical affiliation such as city/village, Serbia, Balkans and Europe. The parents of Hungarian ethnicity are significantly less supportive of cultural pluralism in practice than parents of Serbian ethnicity and parents from Bosniak-Serb families, and that they are significantly less supportive of cultural pluralism than parents from mixed Bosniak-Serb families. Parents from mixed Bosniak-Serb families prepare their children for potential discrimination on the basis of ethnicity to a greater extent than parents of Serbian ethnicity and parents from mixed Hungarian-Serb families. A fostering mistrust towards members of other ethnic groups, the greatest difference was found between parents of Hungarian and Serbian ethnicity, who do so to a significantly lesser extent. Parents from mixed Bosniak-Serb families are more concerned with the ethnic socialization of their children than parents of Serbian ethnicity and parents from mixed Hungarian-Serb families. In general, parents identify most with family and friend groups, and when it comes to differences between ethnic groups, parents from mixed Bosniak-Serb families identify to a greater extent with their ethnic group than Hungarian-Serb families, and significantly more with Europe in relation to the Serbs, as the dominant ethnic group. The highest positive correlation was obtained between the practice of preparing for discrimination and identification with one's own ethnic group.

**Keywords:** *Ethnic socialization, identity, parents, secondary school students.*

### 1. Introduction

Ethnic identity is defined as the totality of feelings and experiences related to the physical characteristics, attitudes, culture, and values of one's own group (Smith, 1991). It is a dynamic and multidimensional concept that develops over time, which includes the cognitive, emotional and behavioural components of identifying with an ethnic group (Ignjatović & Radosavljević, 2023).

Modern societies are based on the values of multiculturalism, and fostering interculturalism is the foundation for good interethnic relations. Multiculturalism denotes the cohabitation of several cultures in one area, and their harmonious coexistence is essential for a modern democratic society. In some

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societies with conflicts and wars in their history, this can be a particular challenge. Special responsibility belongs to the most important agents of socialization who, through their specific relationships and influences, should convey values that align with those of a multi-ethnic society. Taking into account the unique approach that parents have in the lives of children when they acquire concepts about themselves and their ethnic group, along with the specific emotional relationship that exists in the family, it is certain that parental influence must be considered a significant determinant in the formation of the ethnic identity of their children. Parents can deliberately and directly influence the formation of children's ethnic identity by openly and consciously conveying values that are characteristic of a particular ethnic group. On the other hand, through the process of identification and imitation, children adopt values conveyed by parents in connection with an ethnic group, even when parents do not intentionally and consciously do so. This is confirmed by research whose findings indicate a high level of similarity between parents' and children's attitudes towards their own ethnic group and members of another ethnic group, ethnic distance and similarity in attitudes towards discrimination (Mihic & Mihic, 2003). Ethnic socialization specifically refers to beliefs, messages and practices that instruct children and adolescents about their racial or ethnic heritage and promote pride and commitment in their ethnic identity development (Hughes & Chen, 1999; Hughes et al., 2006; Thornton et al, Chatters, Taylor, & Allen, 1990; Rivas-Drake et al., 2009). Researchers list a number of parental practices through which children convey the messages, values and attitudes of their own ethnic group and define the relationship in relation to other ethnic groups. Hughes and colleagues (2006) organized the substantive content of parental ethnic-racial socialization along four general practices, which in the context of more current literature can be understood as (a) pride and heritage socialization, (b) bias socialization, (c) promotion of mistrust, and (d) egalitarianism. *Pride and heritage* socialization refers to parents' proactive approach to children in learning and emphasizing the values of their own culture, history, heritage, significant personalities, customs, food and all other characteristics of their own ethnic group. *Bias socialization* encompasses the practices of parents who are oriented towards preparing children for the potential experience of discrimination and the ways in which they should deal with such events. Promotion of mistrust refers to the socialization of parents, which indicates caution and distance towards members of other ethnic groups. In this context, children can be educated to be careful about establishing affective relationships with members of another ethnic group (friendships, love relationships) or fostering distrust when it comes to business or institutional relationships (choosing business associates or doctors based on ethnicity). As the fourth practice of parental ethnic-racial socialization according to the model of Hughes and colleagues, *Egalitarianism* is cited, and it refers to parental practices in socialization that advocate and promote equality, equal treatment, emphasizing universal values and what connects people, regardless of ethnicity.

A large number of studies show the connection between the development of children's ethnic identity and ethnic socialization (Tran & Lee, 2010; Hughes et al., 2006; Hughes & Johnson, 2001). However, the results are not unambiguous, since a link has been found between the practices of ethnic socialization and positive development outcomes (e.g. academic achievement), but the magnitude of these effects in practice is not known. In general, there are more studies dealing with ethnic socialization that emphasize the value and pride of one's own ethnic group. There are significantly fewer papers dealing with other practices of ethnic socialization (Huguley et.al, 2019) Moreover, the studies that related parents' ethnic identities with ethnic socialization practices have been rare. This study aims at filling this gap by investigating parents' ethnic identities (statuses of minority, ethnically mixed or culturally dominant groups) and their relation to ethnic socialization practices towards their children. This is particularly relevant for the Republic of Serbia where interethnic tensions have been an important socio-political issue in the last four decades, as well as for other countries with similar socio-political landscape.

## 2. Objectives

Ethnic identity is an important determinant of social behaviour and a creator of interpersonal relationships. In order to promote multiculturalism and reduce tensions in the multi-ethnic society of the Republic of Serbia, it is important to examine how parents shape their children's ethnic identity. The aim of this research is to examine the practices of ethnic socialization and various aspects of identity (including ethnicity) of parents of different ethnic origins who live in the Republic of Serbia. In addition, we explored if the socioeconomic status of the family plays a role in shaping ethnic socialization practices parents apply with their children.

### 3. Methods

#### 3.1. Sample

The sample consisted of 501 parents of secondary school students, (75% women) of different ethnicities living in the territory of the Republic of Serbia. The participants included 9.7% Hungarians, 4.2% Bosniaks, 5.7% Roma, 63% Serbs, 10% members of mixed Bosniak-Serb families, and 7.2% of mixed Hungarian-Serb families. The average age of parents was  $M=45$ ;  $SD=6.69$ . The parents who participated in the sample come from families with varying numbers of children ( $M=2.42$ ;  $\min = 1$ ;  $\max=6$ ), and belong to different categories of education, reflecting the educational structure of the population of the Republic of Serbia. Regarding the socio-economic status of the parents, the majority (52.2%) stated that they "have enough money for everyday normal life", 24.9% indicated that they "have money for basic needs", 12.5% said that they have enough for a luxurious life, and the smallest number of parents (10.4%) reported barely covering the costs of elementary living needs.

#### 3.2. Instruments

The Ethnic Socialization Scale for Parents (Hughes D, Johanson D, 2001) - Parents reported their ethnic socialization practices using 15 items regarding the frequency of a range of parental behaviors and communications to children that concerned ethnic and intergroup relationships. Items focused on behaviors, rather than on attitudes and values, because of the likelihood that parents' reports on their behaviors better reflect their actual practices. For each item, parents estimated the number of times they had engaged in the specified behaviour during the past 12 months (e.g., 1 =none; 6=*more than eight times*). The 15 items were intended to assess four underlying dimensions of racial socialization, including: (a) teaching about one's own group's culture, history, and heritage (termed *Cultural Socialization*); (b) teaching about prejudice and discrimination (termed *Preparation for Bias*); (c) communication of cautions or warnings about other groups (termed *Promotion of Mistrust*); and (d) emphasis on diversity and awareness of other groups (termed *Pluralism*). The scale shows high reliability (Kronbach alpha= 0.85).

Social Identification Scale (SOCID) (Branković et al., 2015) - Belonging to certain groups, as a determinant of identity, was assessed by parents using a 5-point Likert scale with 9 items, and the groups included: belonging to gender, ethnic belonging, belonging to a religious group, belonging to a family, a group of friends and geographical affiliation such as city/village, Serbia, Balkans and Europe. The scale shows high reliability (Kronbach alpha= 0.93).

Respondents provided data on gender and their ethnicity. The socio-economic status of the respondents was recorded on a scale, where they were asked to mark one of the six described socio-economic categories that most closely reflected their socio-economic status. Descriptors ranged from 'we barely cover the cost of food' to 'we have money for a more luxurious life, including travel to distant destinations, investing, etc.'

### 4. Results

The results of examining various practices of ethnic socialization among parents of different ethnicities reveal certain differences in different aspects of ethnic socialization (ethnic socialization  $F=3,606$ ,  $p\leq 0.01$ ; preparation for discrimination  $F=4,362$ ,  $p\leq 0.01$ ; practice of supporting distrust of others  $F= 3,182$ ,  $p\leq 0.01$ ; practice of nurturing egalitarianism  $F= 5,209$ ,  $p\leq 0.01$ ). The parents of Hungarian ethnicity are significantly less supportive of cultural pluralism in practice than parents of Serbian ethnicity and parents from Bosniak-Serb families ( $MD= -0.63$ ;  $p\leq 0.05$ ) and that they are significantly less supportive of cultural pluralism than parents from mixed Bosniak-Serb families ( $MD= -1.21$ ;  $p\leq 0.01$ ). Parents from mixed Bosniak-Serb families prepare their children for potential discrimination on the basis of ethnicity to a greater extent than parents of Serbian ethnicity ( $MD= -0.71$ ;  $p\leq 0.01$ ) and parents from mixed Hungarian-Serb families ( $MD= 0.96$ ;  $p\leq 0.01$ ). As for fostering mistrust towards members of other ethnic groups, the greatest difference was found between parents of Hungarian and Serbian ethnicity, who do so to a significantly lesser extent ( $MD= 0.75$ ;  $p\leq 0.05$ ). Parents from mixed Bosniak-Serb families are more concerned with the ethnic socialization of their children than parents of Serbian ethnicity ( $MD= 0.63$ ;  $p\leq 0.01$ ) and parents from mixed Hungarian-Serb families ( $MD= 0.82$ ;  $p\leq 0.01$ ).

When we talk about the differences between parents in ethnic socialization practices, taking into account their socio-economic status, we obtained differences in cultural socialization practices ( $F=3.537$ ,  $p\leq 0.05$ ), preparation for discrimination ( $F=3,212$ ,  $p\leq 0.05$ ) and the practices of advocating distrust towards members of other ethnic groups ( $F= 7,301$ ,  $p\leq 0.01$ ). We found that parents of below-average socio-economic status are more likely to prepare their children for discrimination ( $MD=0.53$ ,  $p\leq 0.05$ ;  $MD=0.59$ ,  $p\leq 0.05$ ), more likely to distrust others ( $MD= 0.72$ ,  $p\leq 0.01$ ;  $MD=0.87$ ,

$p \leq 0.01$ ;  $MD=1.05$ ,  $p \leq 0.01$ ), and more likely to turn to ethnic socialization practices in general ( $MD= 0.44$ ,  $p \leq 0.05$ ;  $MD= 0.46$ ,  $p \leq 0.05$ ;  $MD= 0.51$ ;  $p \leq 0.05$ ) than parents of average and above-average socio-economic status.

In accordance with the aim of the research, we also examined what parents most easily identify with, i.e., what is especially important to them as a determinant of their own identity. In general, parents identify most with family and friend groups, followed by identification with Serbia, the Balkans and Europe. In terms of identification, it has been shown that there are no differences in terms of socio-economic status and education. When it comes to differences in social identification in relation to ethnicity, parents from mixed Bosniak-Serb families identify to a greater extent with their ethnic group than Hungarian-Serb families, and significantly more with Europe in relation to the Serbs, as the dominant ethnic group. The following table shows the correlation values between individual practices of ethnic socialization and social identification.

*Table 1. Correlations between individual practices of ethnic socialization and aspects of social identification.*

|                               | Gender | Ethnicity | Town   | Religion | Family  | Friends | Serbia  | Balkans | Europe |
|-------------------------------|--------|-----------|--------|----------|---------|---------|---------|---------|--------|
| <i>Cultural Socialization</i> | .105** | .136**    | .143** | .095*    | -.039   | .033    | .040    | .099*   | .104*  |
| <i>Preparation for Bias</i>   | .179** | .208**    | .205** | .178**   | .025    | .072    | .083    | .149**  | .157** |
| <i>Promotion of Mistrust</i>  | -.029  | .031      | .028   | -.027    | -.251** | -.162** | -.142** | -.119** | -.079  |
| <i>Pluralism</i>              | .128** | .119**    | .130** | .097*    | .119**  | .151**  | .167**  | .195**  | .161** |

Note. \* refers to  $\text{sig} \leq 0,05$  and \*\*  $\text{sig} \leq 0,01$

The largest positive correlation was observed between the practice of preparing for discrimination and identification with one's own ethnic group, while the most significant negative correlation was found between the practice of supporting distrust towards others and identification with family. It is noteworthy that, in social identification with the Balkans, a slightly higher positive correlation was recorded in terms of fostering pluralism and preparing for potential discrimination, and a negative correlation when it comes to advocating distrust.

## 5. Discussion

Recent research indicates that adolescent ethnic identity exploration and commitment can be significantly predicted by parental cultural and ethnic socialization (Else-Quest & Morse, 2015). Ethnic socialization practices, which are oriented towards getting acquainted with one's own ethnic group, heritage and values correlate with various aspects of social identification. This confirms that ethnic identity is a component of social identity and is strongly linked to other aspects of identity (Rivas-Drake et al., 2009). Promoting pluralism, i.e., highlighting other ethnic groups and their values, correlates with all aspects of identity that the respondents declared. It is interesting to note that the greatest correlation was observed in terms of identification with the Balkans. Considering the geographical area and ethnicity of the peoples living in the region, this information can be further clarified, especially when taking into account the fact that our respondents support and live in multi-ethnic environments constituting the Balkan peoples. However, it is crucial to acknowledge that the correlation was obtained even in practices of ethnic socialization aimed at preparing children for potential discrimination and differential treatment. Specifically, the Balkans is an area burdened by a history of conflict, making it unsurprising that there is a possibility of discrimination or the perception thereof.

The finding that parents from mixed families more frequently practice the transfer of values and attitudes of their own group to their children is considered to be quite interesting. This information can be viewed from the perspective of the specific dynamics in these families where parents are of different ethnicities. Namely, based on the research of French et al. (2006), it is considered that individuals belonging to majority groups in a society do not necessarily have to change or improve their identity. However, it remains important for individuals belonging to minority groups to negotiate the meaning and importance of their identity.

The socioeconomic status of parents is a crucial factor in determining the representation of ethnic socialization practices, including education about one's own ethnicity and preparation for discrimination. The analysis of the results reveals a special risk group of parents and children who are members of ethnic minorities and have a lower socioeconomic status. This statement is in agreement with the findings that suggest that individuals who belong to multiple stigmatized social categories, such as

those based on ethnicity and socioeconomic status, face the greatest challenges in terms of discrimination and identity formation (Remedios & Snyder, 2018).

## 6. Conclusion

The period of adolescence is crucial for exploring and resolving identity. The practices of transmitting knowledge and positive attitudes towards one's own and other ethnicities are the most influential during this period. Considerations about parental practices of socialization should certainly be interpreted in accordance with the context of the environment in which the family lives, especially considering the ethnicity of the parents. Understanding parental practices of ethnic socialization in children can provide a deeper insight into relationships with one's own ethnic group and relationships with other ethnic groups, i.e. that it forms the basis for information, knowledge, and feelings. In multi-ethnic societies, this understanding can be of great significance. In societies that are multi-ethnic and burdened by conflicts in the past, this can be crucial for establishing good relations and coexistence. The limitations of this research primarily include the small number of Roma and Bosniaks included in the sample, as well as the issue of ethnicity itself, which remains a sensitive topic with a strong political connotation, especially concerning certain ethnic groups. Future research should also focus on the affective dimension of ethnicity and socialization practices in this regard, since relations between ethnic groups are often coloured by strong feelings.

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## SCHOOL CLIMATE – TEACHERS’ PERSPECTIVE

**Danijela S. Petrović<sup>1</sup>, Jovan Radosavljević<sup>2</sup>, & Natalija Ignjatović<sup>2</sup>**

<sup>1</sup>*Department of Psychology, Faculty of Philosophy, University of Belgrade (Serbia)*

<sup>2</sup>*Institute of Psychology, Faculty of Philosophy, University of Belgrade (Serbia)*

### Abstract

Multiple studies have suggested the importance of school climate in relation to various educational outcomes. Simultaneously, school climate is the indicator of the quality of school work, which is assessed during school self-evaluation and external evaluation. As teachers play a central role in shaping a positive school environment, this study aimed to explore their viewpoints and assess the extent to which the perception of school climate varies based on specific personal factors, including gender, ethnic background, professional experience and development. Participants were 385 teachers (Mage = 47.5; 66.5% female; 63.6% identified as Serbian (ethnic majority), 10.3% as ethnic minority, 11.4% as mixed ethnic background) from 19 secondary schools. In order to capture school climate as a multidimensional construct we used the Delaware School Climate Scale (DSCS) which consist of 9 subscales Teacher–Student Relations, Student–Student Relations, Clarity of Expectations, Fairness of Rules, School Safety, Student Engagement, Bullying, Teacher-Home Communications and Staff Relation. Teachers assessed each aspect of school climate on a 4-point Likert type scale. For determining personal variables a multiple-choice question was used. Beside descriptive statistics, t-test (for gender differences) and a one-way ANOVA was applied for comparing different groups of participants. Results show that teachers perceived overall school climate as relatively satisfactory (M = 3.2, SD = .42). The most positively rated aspect of school climate was teacher-student relation (M = 3.5, SD = .44), while the most negatively rated aspect was bullying (M = 1.9, SD = .60). Female teachers perceived student-student relation, school safety and student engagement more positively than male teachers. Additionally, novice teachers perceived teacher-student relation and staff relation more positively compared to highly experienced teachers, while experienced teachers perceived the presence of bullying to a greater extent. Teachers who received more professional training had higher scores on Bullying and lower scores on Expectations subscales. Serbian teachers had lower scores on Student engagement subscale than teachers of minority and mixed backgrounds. These results are relevant for school improvement and indicate that schools need to devote greater attention to important areas of school climate, including student-student relations, engagements and prevention of bullying.

**Keywords:** *School climate, teachers, professional experience, professional development, ethnicity.*

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### 1. Introduction

School climate is a construct that has a long tradition of research in educational psychology due to its recognized importance for various educational outcomes, ranging from enhancing student achievement to reducing problem behaviors, such as delinquency, bullying and victimization (e.g. Brand et al., 2003; Gottfredson et al., 2005; McEvoy & Welker, 2000; Welsh, 2000).

Initial studies of school climate relied on instruments, theory, and methods from both organizational climate and school effects research paradigms (Anderson, 1982). Overtime, school climate was distinguished as a separate area of inquiry and other theoretical frameworks were used for studying school climate, such as Bio-ecological theory, Attachment theory, Social cognitive theory, Social control theory, etc. (for overview see Wang & Degol, 2015). As a result, multiple domains were included into the research of school climate.

Today it is clear that school climate represents a multidimensional construct that encompasses almost every aspect of the school experience, including the quality of teaching and learning, school organization, and the institutional and structural features of the school environment, as well as, most importantly, positive interpersonal relationships among school participants (González, Bacon, & Kearney, 2023; Grazia & Molinari, 2021; Thapa et al, 2013; Wang & Degol, 2015). Therefore, it is not

surprising that school climate has been conceptualized differently over the years, depending on which aspect or dimension of school climate was the research focus. For example, school climate is defined as “the quality and consistency of interpersonal interactions within the school community that influence children’s cognitive, social, and psychological development” (Haynes, Emmons & Ben-Avie, 1997, p. 322) or as “the quality and character of school life”, based on patterns of students, parents and school personnel’s experiences with the school that affect their sense of social, emotional, and physical safety (Cohen et al., 2009, p. 182). Other researchers conceptualize school climate as shared norms, values, beliefs and attitudes that shape interactions and relations among students, parents and school personnel’s, setting parameters of acceptable behavior in the school (Brookover et al., 1978; Esposito, 1999)

Although there is not a single list of factors that shape the quality and character of school life, over the last three decades educators and researchers have recognized that complex sets of elements make up school climate. For example, a review of research, practitioner, and scholarly writings (Cohen et al., 2009) suggests that there are four major areas that clearly shape school climate: safety, relationships, teaching/learning and the (external) environment. According to Wang and Degol literature review (2015), the multidimensionality of school climate is represented by following four dimensions: academic climate (overall quality of the academic atmosphere, including curricula, instruction, teacher training, and professional development), community (quality of interpersonal relationships within the school), safety (degree of physical and emotional security provided by the school, as well as the presence of effective, consistent and fair disciplinary practices), and institutional environment (reflects the organizational or structural features of the school environment). Beside relationships and safety, Bear et al. (2016) distinguished social support and structure as important dimensions of school climate. Social support refers to the extent to which adults and peers are responsive to children’s social and emotional needs, exhibited by relationship-building qualities such as warmth, acceptance and caring, while structure refers to the extent to which adults present clear behavioral expectations and fair rules, enforce them consistently, and provide the supervision and monitoring needed to ensure the safety of students.

## 2. Objectives

As teachers play a central role in shaping a positive school environment, this study aimed to explore their viewpoints and assess the extent to which the perception of different aspects of school climate varies in relation to specific personal factors, including gender, ethnic background, professional experience and development.

## 3. Methods

To assess school climate, we utilized the Delaware School Climate Scale (DSCS), an instrument designed to evaluate various dimensions of school climate from different perspectives, including students, teachers, and parents (Bear et al. 2011, Bear et al. 2014a; Bear et al. 2014b). In this study, we used teachers’ version of the DSCS consisting of 38 items in total and 9 subscales (Bear et al. 2016): (1) *Teacher – Student Relations* subscale assesses the extent to which teachers and other adults in the school are responsive to the emotional needs of students, as reflected in them caring about and listening to students when they have problems (e.g. Teachers listen to students when they have problems); (2) *Student–Student Relations* assesses the quality of student interactions, as reflected in students exhibiting respect, caring, friendliness and cooperation among one another (e.g. Students get along with one another) ; (3) *Clarity of Expectations* assesses the extent to which the school’s behavioral expectations and rules are made clear to students (e.g. Students know how they are expected to act); (4) *Fairness of Rules* assesses the extent to which school rules and their consequences are viewed as fair (e.g. The consequences of breaking school rules are fair); (5) *School Safety* assesses the degree to which the school is viewed as safe by teachers/staff and students (e.g. Students feel safe in this school); (6) *Student Engagement* assess the cognitive, behavioral, and emotional dimensions of school engagement (e.g. Most students pay attention in class); (7) *Bullying* assesses school-wide bullying as a part of student-student relationships; (8) *Teacher–Home Communications* assesses the quality of teachers’ communications with the parents/guardians of students, as seen in listening to their concerns, showing respect, and working with them to help to prevent and address student misbehavior (e.g. Teachers work closely with parents to help students when they have problems); (9) *Staff Relation* (e.g. Teachers, staff, and administrators function as a good team. Participants respond by indicating the degree of agreement to a given statement on a 4-point Likert scale (1 = Disagree a lot, to 4 = Agree a lot). To obtain a comprehensive view of the school climate, the total school climate score is derived by combining scores across all subscales. The DSCS demonstrates high reliability for the total sum of raw scores, with a Cronbach’s alpha of 0.90 across grade levels, gender, and racial-ethnic groups.



To assess personal variables: gender, ethnic background, professional experience and professional development we utilized a multiple-choice question.

Participants were 385 teachers ( $M_{age} = 47.5$ ; 66.5% female; 63.6% identified as Serbian (ethnic majority), 10.3% as ethnic minority, 11.4% as mixed ethnic background) from 19 secondary schools. The schools were selected from multiethnic regions with attention to the geographical distribution of schools, school size and educational profile, to ensure sample diversity. Teachers' participation in the survey was on a voluntary basis.

After performing descriptive statistics, we compared different groups of participants by using an independent sample t-test (for gender differences) or one-way ANOVA (for differences in professional experience, professional development and ethnicity). For multiple comparisons, the Tukey post hoc tests were applied.

#### 4. Results

Descriptive statistics (Table 1) show that teachers perceived overall school climate as relatively satisfactory ( $M = 3.2$ ,  $SD = .42$ ) with highest satisfaction with teacher-student relation ( $M = 3.5$ ,  $SD = .44$ ) and clarity of expectation ( $M = 3.4$ ,  $SD = .54$ ). Teachers were less satisfied with student-student relation ( $M = 2.9$ ,  $SD = .50$ ), student engagement ( $M = 2.6$ ,  $SD = .49$ ), and especially bullying ( $M = 1.9$ ,  $SD = .60$ ).

Table 1. Perception of school climate – descriptives.

|                             | <b>n</b> | <b>Minimum</b> | <b>Maximum</b> | <b>Mean</b> | <b>Std. Deviation</b> |
|-----------------------------|----------|----------------|----------------|-------------|-----------------------|
| Teacher-Student Relation    | 385      | 2.00           | 4.00           | 3.46        | .45                   |
| Student-Student Relation    | 383      | 1.20           | 4.00           | 2.86        | .50                   |
| Clarity of Expectations     | 382      | 1.00           | 4.00           | 3.39        | .54                   |
| Fairness of Rules           | 384      | 1.25           | 4.00           | 3.20        | .58                   |
| School Safety               | 383      | 1.67           | 4.00           | 3.24        | .51                   |
| Student Engagement          | 385      | 1.00           | 4.00           | 2.63        | .49                   |
| Bullying                    | 384      | 1.00           | 4.00           | 1.95        | .60                   |
| Teacher- Home Communication | 385      | 1.75           | 4.00           | 3.31        | .51                   |
| Staff Relation              | 385      | 1.00           | 4.00           | 3.14        | .72                   |
| Total school climate score  | 377      | 1.79           | 4.00           | 3.23        | .42                   |

The t-test (Table 2) reveals that male teacher have significantly higher scores on subscales student-student relation ( $t(365)=3.12$ ,  $p < .01$ ), school safety ( $t(366)=2.493$ ,  $p < .01$ ) and student engagement ( $t(367)=2.172$ ,  $p < .05$ ), while gender differences were not determined regarding other aspects of school climate.

Table 2. Gender and perception of school climate.

|                          | <b>Gender</b> | <b>n</b> | <b>M</b> | <b>SD</b> | <b>t</b> | <b>df</b> | <b>p</b> |
|--------------------------|---------------|----------|----------|-----------|----------|-----------|----------|
| Student-Student Relation | Male          | 111      | 2.98     | .54       | 3.12     | 365       | .01      |
|                          | Female        | 256      | 2.81     | .48       |          |           |          |
| School Safety            | Male          | 113      | 3.34     | .50       | 2.49     | 366       | .01      |
|                          | Female        | 255      | 3.20     | .51       |          |           |          |
| Student Engagement       | Male          | 113      | 2.72     | .46       | 2.17     | 367       | .05      |
|                          | Female        | 256      | 2.60     | .50       |          |           |          |

ANOVA with Tukey post hoc tests (Table 3) shows that novice teachers (up to five years of professional experience) perceive teacher-student relation ( $F(3)=3.063$ ,  $p < .05$ ) and staff relation ( $F(3)=2.960$ ,  $p < .05$ ) more positively, while the most experienced teachers (over 25 years of professional experience) perceive the presence of bullying to a greater extent ( $F(3)=3.734$ ,  $p < .01$ ).

Additionally, ANOVA with Tukey post hoc tests shows (Table 4) that teachers who receive more professional training have higher scores on Bullying ( $F(2)=9.075$ ,  $p < .001$ ) and lower scores on Expectations subscale ( $F(2)=4.352$ ,  $p < .01$ ).

Table 3. Professional experience and perception of school climate.

|                          | Professional experience | n   | M    | SD  | df | F    | p   |
|--------------------------|-------------------------|-----|------|-----|----|------|-----|
| Teacher-Student Relation | Up to 5                 | 76  | 3.54 | .44 | 3  | 3.06 | .05 |
|                          | 6 -15                   | 118 | 3.51 | .42 |    |      |     |
|                          | 16 - 24                 | 126 | 3.39 | .45 |    |      |     |
|                          | Over 26                 | 63  | 3.39 | .46 |    |      |     |
| Bullying                 | Up to 5                 | 76  | 1.94 | .65 | 3  | 3.73 | .01 |
|                          | 6 -15                   | 118 | 1.88 | .58 |    |      |     |
|                          | 16 - 24                 | 125 | 1.90 | .58 |    |      |     |
|                          | Over 26                 | 63  | 2.17 | .55 |    |      |     |
| Staff Relation           | Up to 5                 | 76  | 3.32 | .63 | 3  | 2.96 | .05 |
|                          | 6 -15                   | 118 | 3.19 | .70 |    |      |     |
|                          | 16 - 24                 | 126 | 3.05 | .77 |    |      |     |
|                          | Over 26                 | 63  | 3.03 | .70 |    |      |     |

Table 4. Professional development and perception of school climate.

|                         | Professional development | n   | M    | SD  | df | F    | p    |
|-------------------------|--------------------------|-----|------|-----|----|------|------|
| Clarity of Expectations | 0                        | 108 | 3.40 | .51 | 2  | 4.35 | .01  |
|                         | 1-24                     | 142 | 3.46 | .49 |    |      |      |
|                         | Over 24                  | 109 | 3.25 | .62 |    |      |      |
| Bullying                | 0                        | 109 | 1.78 | .58 | 2  | 9.07 | .000 |
|                         | 1-24                     | 142 | 1.97 | .54 |    |      |      |
|                         | Over 24                  | 110 | 2.12 | .63 |    |      |      |

Ethnic differences were determined regarding only one aspect of school climate (Table 5). ANOVA with Tukey post hoc tests showed that Serbian teachers assess student engagement as lower than teachers of minority and mixed background ( $F(2)= 4.352, p < .01$ ).

Table 5. Ethnicity and perception of school climate.

|                    | Ethnicity | n   | M    | SD  | df | F    | p    |
|--------------------|-----------|-----|------|-----|----|------|------|
| Student Engagement | Minority  | 40  | 2.85 | .41 | 2  | 9.28 | .000 |
|                    | Serbs     | 245 | 2.58 | .49 |    |      |      |
|                    | Mixed     | 44  | 2.83 | .43 |    |      |      |

## 5. Discussion and conclusions

Examining the school climate is important because it can indicate the aspects that need to be improved in order to provide an environment conducive to learning. In this research, we found that teachers are relatively satisfied with the entire school climate, but that the presence of bullying is a key aspect of the school climate that needs to be acted upon. This result is not surprising because teachers are more sensitive to notice the elements of peer violence in schools and to react to it. It was also found that teachers who receive more professional training or who have the most professional experience have higher scores on the Bullying subscale. It is possible that due to their knowledge and experience they better notice and perceive what bullying is all about. One of the ways to prevent bullying is to improve peer relations, which is also an aspect of the school climate with which teachers are less satisfied. Additionally, from the teacher's point of view, another aspect of the school climate that should be improved is the engagement of students, which is in line with the generally widespread opinion of teachers that some students are insufficiently motivated for school learning.

The results show that female teachers have a more positive outlook on certain aspects of the school climate, such as relationships among students, student engagement and school safety, which should be further investigated.

When interpreting results obtained in this study, it should be kept in mind that teachers often report more favorable perceptions of learning environments and school climates than students, especially with respect to teacher–student relationships (Bear et al. 2016). It seems that this tendency is particularly pronounced among novice teachers who evaluate teacher-student relations (as well as staff relations) much more positively than experienced teachers. However, another possibility is that younger teachers actually establish better relationships both with students and colleagues.

In order to overcome some of the limitations of this study, it is necessary to examine the school climate from the perspective of both students and parents, not only teachers. Using the student, teacher and parent's surveys jointly will allow contrasting these different perspectives and increasing the validity of school climate assessment.

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# STUDY OF THE NATURE OF YOUNG PEOPLE'S ENABLING ENVIRONMENTS AND THEIR VOCATIONAL IDENTITY, IN THE EXPRESSION OF THEIR ORIENTATION CHOICES, ACCORDING TO SEN'S CAPABILITIES THEORY

**Sandrine Garin, Valérie Cohen-Scali, & Katia Terriot**

*CRTD, Conservatoire des Arts et Métiers (France)*

## Abstract

In 2023, 88% of new French students said they felt free to formulate their preferences for their first year at university. However, 34,9% of students manage to complete their bachelor's degree in more than 3 years (EESR n°16). Reorientation at the end of the first year therefore remains important.

The originality of our work lies in the simultaneous study of the individual's environment and internal resources, considering data such as parental involvement, compared with that of teachers and psychologists. Our research is part of the PIA (Plan Investissement Avenir) Ile-de-France program and focuses both on young people's psychological capacity to make a career choice, and on their perception of their environment as helping them to make that choice. To do this, our work is based on the capability approach: Sen (1992) builds his theory from a systemic perspective to understand the ability to choose (capability) in a favorable or unfavorable environment (enabling or disabling). Consequently, true freedom would consist in having sufficient environmental resources (family, school, institutional support, etc.), which psychological resources could convert into the ability to choose (Fernagu, 2022). Our aim is twofold: on the one hand, to gain a better understanding of high school students' perceptions of what they themselves recognize as the favorable environment (person, institution, etc.) for their choice of orientation. On the other hand, to explore, at the same time, their professional identities (Lannegrand-Willems and Perchec, 2017) in order to understand how guidance is as much a collective issue as an individual one.

Our qualitative study is based on a crossed methodology: a thematic analysis was carried out on semi-directive interviews from 3 focus groups of high school students (6 girls, 7 boys). This analysis was cross-referenced with a lexicometric analysis of textual corpora. Among our findings, students perceive the actions of their enabling environments through individuals. Indeed, teachers, Psychologues de l'Éducation Nationale (PsyEN) and parents provide support that is perceived differently depending on whether it falls under "support" (Chen and Solberg, 2018), such as teachers and fathers. When it comes to mothers and PsyENs, it appears more as a form of care ("caring"). Finally, while support is presented as an aid to making a choice, our cross-analyses highlight the act of renouncing other possible options ((by graphe of the word): this act would be done by the young person, without support or in a truly conscious manner.

**Keywords:** *Enabling environment, vocational identity, capabilities.*

## 1. Introduction

In 2023, 88% of new French students say they felt free to formulate their wishes on Parcoursup (the national platform for pre-registration in the first year of university). But at the same time, 83% say they also experienced stress during this stage, which they consider unclear (IGESR report, 2023). Questions of choice, selection and failure permeate the final year of high school and have a major impact on the first year of university. While the number of undergraduates increases every year, in 2018, only 34.9% graduated in 3 years and 65.1% repeated or reoriented (EESR report, 2023). This platform consists of an assignment procedure, which undermines the possibility of a chosen orientation when the wish is refused. The economic theory of Sen's capability approach (2000) proposes a systemic reading of the question of choice. Sen constructs several concepts to explain the shared responsibility of this act. We choose within an environment that may or may not support us. The capability approach draws on a systemic perspective to understand the possibility of choosing (capability) in a favorable or unfavorable (enabling or disabling) environment. Real freedom would then consist in benefiting from sufficient environmental resources (family, school, institutional support, etc.), which psychic resources could convert into the ability to choose

(Fernagu, 2022). The aim of our work is to grasp the possibility of applying the Capability Approach (CA) in the field of guidance: According to Sen (2000), equity between individuals is based on the balance between the external resources (enabling environment) and the internal resources (psychic) of the individual. In terms of the capability to make a decision, vocational identity is this perception or awareness of one's personality traits, skills, strengths, interests, and goals. The stronger this awareness, the greater the well-being (Lannegrund and Perchec, 2017), and the greater the chances of finding a guidance aligned with one's identity. Vocational identity is based on the work of Marcia (1966): depending on the degree of exploration and commitment, an individual's identity can be characterized. Diffused identity consists in the absence of exploration and commitment. Then person is unavailable for any reflection in terms of career guidance. Foreclosed identity corresponds to the absence of exploration with a strong commitment. For this person, there's nothing to think about, no hesitation, and only one career can be considered. The moratorium identity consists in exploring the possibilities of guidance open to me, without making a choice that would allow me to commit myself. Finally, the achieved identity is the combination of the two actions favoring the most appropriate career guidance for the individual. Since then, other studies have extended this theory, but for the purposes of this exploratory study, we have focused on these four typologies.

From these two resources, the individual can express his choices, he is able to do so at that moment. The expression of the capability to choose the career guidance oneself can be defined on the basis of Deci and Ryan's (2002) theory of self-determination, on which Brasselet and Guerrien (2010) based their definition of the feeling of freedom to choose. Feeling free to choose fosters greater motivation and satisfaction. This is self-determination. Deci and Ryan (2002) characterize two types of motivation: When the individual makes a choice under pressure from those around him or her, in order to get a good grade, this is extrinsic motivation. In this case, self-determination is low. Intrinsic motivation, on the other hand, is what leads the individual to make a choice for its own sake. Because the individual enjoys practicing this discipline, he or she chooses university studies so as to practice only this discipline. From then on, the individual chooses not on the basis of the interests that these studies might bring him, but by the pleasure of practicing it every day.

Sen (2000) differentiates between two types of freedom: formal freedom and real freedom. When an individual's basic needs (food, housing, health) are not met, or when he or she lives in an disabling environment and/or lacks sufficient mental resources, then he or she is only formally free. On the other hand, when an individual's basic needs are met, they live in an enabling environment, and they have the psychic resources (vocational identity), then they are really free to choose. How can this be understood in the field of guidance?

We hypothesize that real freedom corresponds to the combination of an enabling environment, a vocational identity of the achieved identity type, enabling the expression of a strong sense of freedom, strong self-determination, and intrinsic motivation.

The second hypothesis is that formal freedom corresponds to the combination of an disabling environment, a diffused or foreclosed identity, with the expression of a weak sense of freedom, low self-determination, and extrinsic motivation or amotivation.

## 2. Method

We conducted an exploratory study in the context of a Programme Investissement Avenir (PIA), based on semi-directive interviews recorded in focus groups. A crossover methodology was used: the textual corpus was processed by thematic analysis and lexicometric analysis.

The interview grid was designed according to the recommendations of Bonvin and Farvaque (2007) and therefore focused on deprivations of freedom, which are easier to explore than freedoms (renunciations, perceived impossibilities). The questions focused on the students' perceived environment (parents, teachers, school, peers) and the responses were analysed in terms of their commitment and level of exploration of their career plans to identify their vocational identity. The responses allowed us to see how we could identify whether an environment was perceived by the individual as enabling. In the light of this identification, we examined the way in which a capability to choose oneself is expressed.

**Thematic analysis:** Once the interviews had been transcribed, the elements of the textual corpus were sorted and the most significant text segments were selected and sorted into themes and sub-themes. The content analysis notebook was used to classify all the segments from all the interviews. Once all the elements had been sorted, a cross-sectional analysis was carried out to quantify the shared viewpoints.

**Lexicometric analysis:** The interviewer's interventions were first removed in order to focus on the students' responses. Each participant was coded according to the following variables: gender, school, level of the school's social position index, vocational identity, enabling environment, chosen track (technological or general). This coding allows for inter-individual analysis. After the textual corpus was then cleaned, an analysis using the Hierarchical Descending Classification (CHD) Reinert method was then carried out to

identify the classes representing the main themes. This allowed us to process words, active forms and hapaxes. Class and word graphs were created to visualise the most frequently used words and the associations between them. A Correspondence Factorial Analysis (CFA) by class was carried out to check whether certain classes might share certain word occurrences.

## 2.1. Participants

We conducted 3 semi-structured interviews with 3 focus groups in 3 high schools in the Paris region: 6 girls and 7 boys in their final year of high school answered our questions.

**2.1.1. Results of thematic analysis.** *Concerning the environment:* Firstly, 8 out of 13 students mentioned the support of their main teachers. Two students spoke of a negative impact due to the transmission of incorrect information on the choice of specialties and radical opposition to the choice formulated by the student. For 3 students there was no impact, either because they didn't express themselves on the subject or because the main teacher felt that they didn't need any help. Secondary school students perceived heterogeneity in the support given by teachers. They explain this difference in terms of the teachers' passion for teaching. As a result, upper secondary students perceive a strong commitment to support students by informing them about possible career choices and according to their profile. Secondary students characterize teachers' view of the university world as negative. To counter this, students explain why they turn to student testimonies to multiply their opinions and hope for more positive, less anxiety-provoking visions. *Parents:* 7 students feel that they are not accompanied by their parents, and they distinguish a difference in accompaniment between mother and father: 3 students expressed their satisfaction to be accompanied by their father. However, the description of the support given to these 3 students shows that the father anticipates the child's choices, in particular by seeking information long before his child does. The father may also be very distant in his support of the child's career choices or may not be interested in them at all. 8 students spoke positively about the support of their mothers. This support is different from that of the father. The mother seems to provide moral and administrative support (designing the Parcoursup file, writing the cover letter, etc.).

*PsyEN (National Educational Psychologist):* 6 out of 13 students praised the support provided by the school psychologist. 2 students were negative about this support. And 5 students said that they didn't need to meet this professional. The availability of this professional in the school is considered to be too low. Pupils with health problems, for example, expressed the importance of this professional. *Peers:* 9 out of 13 students don't recognize the influence of their peers on their choice of career. And friends seem to be far removed from the issue of guidance. Among friends, it's more a question of playing and relaxing. *Parcoursup:* 8 out of 13 high school students say that the platform has a negative impact on their career plans. The platform causes too much stress because students feel that their choice is blind rather than informed. Students don't see a connection between the specialties they have chosen in high school and university courses. Their plans don't seem to change until they receive information about their placement in the first year of university. *Institutional actions:* The students have a partial perception of the actions presented to them. For example, they identify only one action, but the other actions identified during these three interviews concern actions carried out on the initiative of the school teachers or PsyEN.

*With regard to internal resources:* 7 out of 13 students found it impossible, either for financial reasons or because of the refusal of a parent, a teacher or PsyEN. *Difficulty in making choices:* 10 out of 13 students reported difficulties in making choices: understanding all the possibilities is made difficult by the abundance of information and websites. Brilliant students may also find it difficult to get their choice heard, or to get their change of choice heard. *Difficulty in choosing between several options:* 11 out of 13 high school students had difficulty choosing between different options. In their final year of secondary school, students have to give up one of their three specialties and this seems to be the first experience of a choice that causes a lot of stress, even sadness, in giving up a discipline. *The act of giving up:* 8 out of 13 students have given up certain options on their own. This is a complex issue to grasp as the act of giving up is rarely verbalized. However, students may give up on certain career dreams because they feel they are not good enough, or because the dream does not sufficiently guarantee them a job.

*Regarding the expression of the capability to choose oneself:* 10 out of 13 students perceive their freedom of choice as partial. On the other hand, 3 students perceive their freedom as total. The perception of partial freedom is linked to the perception that one's choices are made within an ecosystem of career guidance. The secondary school students understand the challenges of Parcoursup. One high school student, on the other hand, considers himself to be completely free and refuses to accept the possibility of being prevented from choosing his path. Brilliant pupils may feel that they have access to everything. Pupils in great difficulty may also consider their freedom to be total because they understand that they can register any wish on the platform. *Perception of parental influences:* 6 students recognize the influence of their parents. 5 admit to being influenced by their teachers. Finally, 7 students consider themselves to be one of their own influences.

**2.1.2. Results of lexicometric analysis.** *The CHD analysis identifies 5 classes with a balanced distribution (between 15.4 and 19%) for 4 classes. Only one class (5) really stands out (32.5%). 1126 out of 1503 segments are classified in this class, i.e. 74.92% of the whole text corpus. The dendrogram shows the characteristic words of each class. An analysis of the terms by their Chi2 and p-value allows us to construct the themes of the classes.*

*Class 5 represents the difficulty of choosing ( $\chi^2 = 15.503$ ;  $p < 0.0001$ ) a field ( $\chi^2 = 36.16$ ;  $p < 0.0001$ ) in which the student can work ( $\chi^2 = 28.427$ ;  $p < 0.0001$ ). The importance of associating information about one's own future education ( $\chi^2 = 0.389$ ;  $p = 0.533$ ), one's own future ( $\chi^2 = 4.907$ ;  $p = 0.027$ ) and one's own history is again evident.*

*In class 3, there are strong negative connotations (regret ( $\chi^2 = 20.363$ ;  $p < 0.0001$ ) related to both the perception of being forced ( $\chi^2 = 9.902$ ;  $p = 0.002$ ) to choose in the "senior year" ( $\chi^2 = 10.371$ ;  $p = 0.001$ ) and the pressure of not being able to "change" ( $\chi^2 = 16.781$ ;  $p < 0.0001$ ) one's choice.*

*Class 2 represents what is involved in thinking about a project (thinking  $\chi^2 = 17.108$ ,  $p < 0.0001$ ), (project  $\chi^2 = 125.284$ ,  $p = 0.003$ ). In this case, according to the students, help is needed (help  $\chi^2 = 44.385$ ,  $p < 0.0001$ ) to ensure a realistic project (true  $\chi^2 = 17.108$ ,  $p < 0.0001$ ). The word 'talk' appears in the class graph ( $\chi^2 = 95.858$ ), but not significantly ( $p = 0.195$ ). However, the class graph shows a central value. The teacher ( $\chi^2 = 0.004$ ,  $p < 0.0001$ ) is used only to a limited extent, although he seems to be of prime importance (in this class as in others). It helps by providing information ( $\chi^2 = -0.546$ ,  $p < 0.0001$ ), but this doesn't seem to be enough. For example, the arousal of passions ( $\chi^2 = -1.463$ ,  $p < 0.0001$ ) (to love  $\chi^2 = -4.196$ ,  $p < 0.0001$ ) seems to be lacking in the construction of projects by high school students. The relationship of trust ( $\chi^2 = 26.092$ ,  $p = 0.086$ ) also seems to be missing.*

*Class 4 collects a list of dynamic verbs (push ( $\chi^2 = 14.679$ ;  $p < 0.0001$ ) linked to the anxiety of waiting for Parcoursup results and seeing one's name on the list ( $\chi^2 = 5.799$ ;  $p = 0.016$ ). These dynamic verbs are also associated with actions related to information about training courses ("sites") ( $\chi^2 = 19.768$ ;  $p < 0.0001$ ). Stress ( $\chi^2 = 53.379$ ;  $p < 0.0001$ ) seems to be related to both the senior year and the projection towards the college years. The "class" group ( $\chi^2 = 85.662$ ;  $p < 0.0001$ ) represents the functions of the classmate, both in terms of the possibility of feeding one's "motivation" ( $\chi^2 = 3.492$ ;  $p = 0.151$ ), in terms of this partner sometimes being present since "primary school" ( $\chi^2 = 5.247$ ;  $p = 0.022$ ), but also in terms of the possibility of "confrontation" ( $\chi^2 = 2.182$ ;  $p = 0.14$ ). In this case, the classmate is still seen as a member of the class group or even as a "person" ( $\chi^2 = 15.909$ ;  $p < 0.0001$ ). But it seems to be far from what the student recognizes as a friend ( $\chi^2 = 14.662$ ;  $p < 0.0001$ ). This class group is used to "invest" ( $\chi^2 = 5.009$ ;  $p = 0.025$ ) in questions and exchanges about the "world" ( $\chi^2 = 3.804$ ;  $p = 0.051$ ), and the pupils understand this investment as being made by the "teacher" ( $\chi^2 = 2.886$ ;  $p = 0.089$ ), and in particular by his ability to encourage ( $\chi^2 = 26.571$ ;  $p < 0.0001$ ). Only the teacher appears in this class4.*

*In class 1, the term "see" is central ( $\chi^2 = 44.316$ ) but not significant ( $p = 0.227$ ). We can hypothesize that this is due to a verbal tic, but also to the fact that high school students talk more about not being able to see. The class diagram clearly shows its centrality, and the theme (vision of the future, lack of transparency of the course) also reflects the difficulty of seeing. In other words, although this concept is expected in this class, it is underrepresented. Similarly, high school students expressed a lack of transparency, a lack of clarity about the Parcoursup "platform" ( $\chi^2 = 5.155$ ;  $p = 0.46$ ). Thinking ( $\chi^2 = 4.37$ ;  $p = 0.037$ ) about one's orientation ( $\chi^2 = 36.887$ ;  $p < 0.001$ ) based on what one likes ( $\chi^2 = 33.605$ ;  $p = 0.041$ ) seems complex. To promote this better vision of one's own choice of guidance ( $\chi^2 = 3.008$ ;  $p < 0.0001$ ), the main teacher ( $\chi^2 = 3.327$ ;  $p = 0.005$ ) seems to be central when he/she promotes a relationship of trust ( $\chi^2 = 26.092$ ;  $p < 0.0001$ ). This class shows that the information concerns the knowledge of possible training courses, the functioning of the platform and the relational dimension of the student with his/her referent.*

*A CFA revealed a similarity of active forms for classes 1 and 2. In this case, these similarities imply that a clear vision of one's guidance project and the verbalization of one's project are interdependent. Finally, the graph for the word "renounce" shows us how closely it is linked to the unspeakable and to loneliness. The graph for "choose", on the other hand, shows a strong verbalization.*

### 3. Discussion

The environment is enabling when it develops the agency of the individual (Fernagu-Oudet, 2014). In this way, it supports the development of self-determination to "construct one's choices" (Fernagu, 2022), both individually and collectively, both in "their knowledge, their health, their success and their progress" (Arnoud and Falzon, 2013). Indeed, the support of adults promotes the development of the professional identity of teenagers. To this end, Chen and Solberg (2017) specify that this support must be caring and engaged. It's not just any adult, as the latter must be a 'referent adult', i.e. 'parents, guardians, teachers, school counsellors and mentors'. In the context of our study, we find elements that confirm this "support" through the perceptions of support experienced by the students, but it differs according to the referent: in this case, the teacher and the father exercise a form of support by transmitting personalized information on training courses. Mothers and PsyEN, on the other hand, provide a "caring" type of support: less focused on information and more on "caring". In this case they are concerned with the psychological health of the

student. An empowering environment promotes the capability to choose oneself. However, students perceive different forms of support depending on whether it comes from the teacher, father, mother or PsyEN. When pupils express the absence of support from their parents, teacher or PsyEN, they may be expressing their capability because they benefit from the support of one of them. More precisely, in the field of guidance, support can appear to be interchangeable. Identity construction and career decisions are presented as correlated in numerous studies (Lannegrand and Perchec 2016, Porfeli et al. 2011). In our study, vocational identity is what characterizes the psychic resource necessary for the emergence of the capability to make your own choices. Diffused identity characterizes a student without commitment or exploration. A foreclosed identity characterizes a student who is prematurely committed without any exploration. A moratorium identity is a student in exploration without commitment. Finally, an achieved identity is a student who has committed after exploring all possibilities. In this case, a disabling environment limits the individual's psychological resources and therefore his capability to choose himself. The sense of freedom, the expression of self-determination and intrinsic motivation are closely linked to vocational identity (Lannegrand and Perchec, 2017). This identity, in turn, is linked to the environment in which it is deployed. When this environment is enabling, it promotes the development of vocational identity. Conversely, when the environment is disabling, it limits the development of vocational identity. In our study, vocational identity seems to be related to the perception of freedom, self-determination and intrinsic motivation. The more the identity is achieved, the more likely the individual is to feel free, self-determined and motivated. The theoretical framework of Sen's Capability Approach allows us to understand how an enabling environment promotes the ability to orient oneself. Indeed, an enabling environment promotes the development of the psychic resources necessary for the expression of agency.

#### 4. Conclusion

We have seen in this study that the environment is enabling when it promotes the development of a vocational identity. This identity is what allows the individual to express his or her capability to make a decision oneself. The more this identity is achieved, the more likely the individual is to feel free, self-determined and motivated. An enabling environment is one that supports the development of this identity. If the environment is disabling, it limits the development of vocational identity. As a result, the individual is unable to express his or her capability for self-direction. In this case, he or she will only experience formal freedom, i.e. the absence of real freedom. From these findings we can conclude that vocational identity is a key element in understanding the capability to make a decision oneself. It is therefore essential to take into account the environment in which the individual develops in order to support the development of this identity. This is particularly important in the context of guidance, where the expression of capability plays a crucial role in the success of the individual. In this study, the environment is perceived as facilitating when it supports the development of a vocational identity. This identity is what enables the individual to express their capability to make decisions for themselves. The more this identity is developed, the more likely the individual is to feel partially free, empowered and motivated.

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## RESULTS FROM YEAR TWO OF A BRAIN DEVELOPMENT UNIT WITH PRESERVICE TEACHERS

Susie Morrissey<sup>1</sup>, & Katharine Northcutt<sup>2</sup>

<sup>1</sup>Tift College of Education, Mercer University (USA)

<sup>2</sup>College of Liberal Arts and Sciences, Mercer University (USA)

### Abstract

An accurate understanding of brain development enhances teachers' understanding of how their students learn. Therefore, researchers collaborated to provide accurate information concerning brain development to preservice teachers. This study addresses neuromyths and general brain development misconceptions that were found to be persistent in a study conducted the previous year (Morrissey & Northcutt, 2023). Year two sample consisted of a different cohort of 12 teacher candidates than the year one cohort. Researchers addressed neuromyths and misconceptions with a unit on brain development that included inviting a neuroscientist into the preservice classroom to share accurate knowledge about brain development at different stages throughout K-12 schooling, with an emphasis on brain development knowledge on which the year one cohort scored low. In addition to assignments and activities from the previous year, pre-service teachers read an additional article about learning styles and read a collection of abstracts about the effects of sugar. Preservice teachers were given a pre-test, post-test, and end-of-semester test, and asked to journal about "What did you learn that surprised you? How will you use the information from today to understand students?" following the presentation by the neuroscientist. Data were analyzed to determine which neuromyths and misconceptions were persistent right after the brain development unit ended (during week 5 of a 16-week semester) and at the end of the semester. Because of the small sample size, data were analyzed qualitatively. Pre-, post- and end-of-semester-assessment results were compared. Responses to the discussion post were used to provide consistency and depth to results from the post-assessment (Krathwohl, 2009). Researchers saw improvements in areas that were emphasized more in year two. However, misconceptions continued to be apparent around whether the use of learning styles in the classroom were useful in improving student outcomes, and whether children must acquire a native language before learning a second language.

**Keywords:** *Educational psychology, teacher education, neuromyths, brain development.*

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### 1. Introduction

Neuromyths, unscientific ideas about the brain (Crockard, 1996, as cited in Howard-Jones, 2014), can be distortions or misinterpretations of proven hypotheses reported in the media (Pasquinelli, 2012). Neuromyths appeal to the general public, including preservice teachers, because they reinforce intuitive beliefs and observations (Howard-Jones, 2014; Pasquinelli, 2012; Purdy & Morrison, 2009). However, an accurate understanding of brain development is especially important in education, due to the relationship of brain development to social economic status, as well as how an understanding of brain plasticity leads to a growth mindset (Coch, 2018). Without access to accurate brain development information, preservice teachers rely on their own ideas gleaned from various resources, which can be detrimental to their teaching practices (Howard-Jones et al., 2009). Sources of neuromyths have been found to be popular media (Beck, 2010; Carter et al., 2020; Tardif et al., 2015), general knowledge, academic staff, school staff (Carter et al., 2020), readings, and teacher training courses (Tardif et al., 2015). Previous researchers have recommended a strong connection between educators and neuroscience researchers as a way to improve brain development knowledge and understanding, thus improving the use of evidence-based practices in the classroom (Coch et al., 2009; Dubinsky et al., 2013).

Researchers have identified common neuromyths, such as left-brain versus right-brain dominance, we only use 10% of our brain, children must acquire their native language before learning a second language, critical periods exist for learning new material (Karakus et al., 2014; OECD, 2002; Pasquinelli, 2012), and the belief that teaching in a student's preferred learning style or intelligence

profile improves learning (McMahon et al., 2019; Willingham, 2004). Several studies in the recent past have documented the existence of neuromyths in preservice and inservice teachers. Howard-Jones et al. (2009) developed a survey to investigate the brain development and neuromyth knowledge of preservice teachers, and Dekker et al. (2012) devised an instrument to look for evidence of neuromyths and brain development knowledge in teachers. In both studies, researchers found beliefs that reflected popular neuromyths concerning the influence of environment and genetics on student success. Other researchers subsequently used either the instrument from Howard-Jones et al. or the instrument from Dekker et al. with similar findings (e.g., Deligiannidi & Howard-Jones, 2015; Dundar & Gunduz, 2016; Ferrero et al., 2016; Gleichgerrcht et al., 2015; Hughes et al., 2020; Karakus et al., 2014; Macdonald et al., 2017).

To alleviate neuromyths, Kowalski & Taylor (2009) included neuroeducation courses in a teacher education program that used refutational lecture and text, resulting in significant changes in the beliefs of teacher candidates. Other treatments resulting in a decline in neuromyths include explicitly addressing neuromyths using a conceptual change model to create cognitive conflict (Grospletsch & Mayer, 2018), research-based innovations embedded in a teacher training program (McMahon et al., 2019), and addressing neuromyths in an educational psychology course during initial teacher training (Im et al., 2018). Overall, studies have shown that collaborations and interdisciplinary communication between science and education can reduce misconceptions, lead to meaningful, productive theories and result in more efficient teaching and learning strategies (Dekker et al., 2012; Hughes et al., 2020; Pasquinelli, 2012; Pickering & Howard-Jones, 2007; Sigman et al., 2014).

To address the prevalence of neuromyths and lack of knowledge of brain development in preservice teachers, researchers in this study collaborated to provide a neuroscience unit to preservice teachers. Researchers asked the questions, What neuromyths are present in second-year preservice teachers, and are any of the neuromyths present able to be alleviated by the neuroscience unit short-term and long-term? Which neuromyths are more resilient? This paper reports on year two of the study, during which researchers targeted neuromyths and brain development misunderstandings that were seen to be persistent at the end of year one (see Morrissey & Northcutt, 2023).

## 2. Methods

The year two sample consisted of 12 secondary preservice teachers in their second year of undergraduate teacher education, enrolled in an adolescent psychology course as part of their teacher certification program. Teacher candidates were seven White females, one Indian female, three White males and one Black male who planned to teach middle or high school music, Spanish, mathematics, history or language arts. The pre-, post-, and end-of-semester survey of 20 general assertions about the brain and ten neuromyths was developed from the instruments used by Howard-Jones et al. (2009) and Dekker et al. (2012), with additions from Kim and Sankey (2018) and Blanchette Sarrasin et al. (2019), and changes to wording of some questions recommended by Macdonald et al. (2017). Responses allowed were Agree, Disagree, or Don't Know. At the end of year one, the post-survey had indicated persistent neuromyths were the belief that children are less attentive after consuming sugary drinks and/or snacks, and the belief that children must acquire their native language before a second language is learned. The most notable general brain development knowledge misunderstanding was that boys' brains are the same size as girls brains. Confusion was evidenced over whether learning styles were shown by research to impact learning. For year two, these beliefs received additional attention.

Researchers collaborated on a unit on brain development that included inviting one of the researchers, a neuroscientist, into the preservice teacher education classroom to share accurate knowledge about brain development. A video on brain development (Blakemore, 2012), two articles (Howard-Jones, 2014; Schultz, 2009), and relevant textbook chapters (Durwin & Reese-Weber, 2018) were part of the unit. The article by Schultz addressed, among other neuromyths, the neuromyth that children must acquire their native language before a second language is learned, which was also mentioned by the neuroscientist. To address the persistent neuromyth that children are less attentive after consuming sugary drinks and/or snacks, an additional assigned reading consisted of a collection of abstracts from three articles that addressed the effects of sugar on children's behavior (Rosén et al., 1998; White & Wolraich, 1995; Wolraich et al., 1995). In addition, this neuromyth was emphasized in the lecture by the neuroscientist. The neuroscientist's lecture also emphasized brain size, sharing data on the size of boys' brains versus girls' brains. Teacher candidates read an article addressing learning styles, their misconceptions, and use in the classroom (Papadatou-Pastou et al., 2021) to attempt to clearly define the role of learning styles in the classroom.

Preservice teachers were given the survey as a pre-test, post-test, and end-of-semester test. In addition, preservice teachers were asked to journal about "What did you learn that surprised you? How will you use the information from today to understand students?" following the presentation by the

neuroscientist. Pre-, post- and end-of-semester-assessment results were compared to determine to what degree neuromyths were eliminated right after the brain development unit ended (during week 5 of a 16-week semester) and at the end of the semester. Responses to the discussion post were used to provide consistency and depth to results from the post-assessment (Krathwohl, 2009).

### 3. Findings

Table 1 shows the results of pre- post- and end-of-semester assessment for neuromyths and the one brain knowledge question that was emphasized in the brain development unit. Items of note on the end-of-semester results include improvements in two areas of focus, the effects of sugary snacks and the size of boys' and girls' brains. However, the third area of focus, acquisition of a native language, continued to be persistent, as did the fourth area of focus, "Individuals learn better when they receive information in their preferred learning style (e.g., auditory, visual, kinesthetic)".

Three other neuromyths showed improvements, namely "We only use 10% of our brain", "Some of us are 'left-brained' and some are 'right-brained' and this helps explain differences in how we learn" and "There are critical periods in childhood after which certain things can no longer be learned". Two neuromyths, concerning drinking caffeine and extended rehearsal of mental processes, were marked correctly by at least 50% of teacher candidates on the pre-test, and showed improvements on the end-of-semester test. One neuromyth was not alleviated to the same extent in year two as year one. At the end of the semester, 50% of teacher candidates agreed with the neuromyth "Learning problems associated with developmental differences in the brain function cannot be remediated by education."

Four preservice teachers mentioned content related to the four focus areas when they wrote their reflections after the neuroscience lecture, stating that they learned that male brains are actually larger on average than female brains. Those four teacher candidates each answered the question about brain size incorrectly on the pre-test, and correctly on the post-test.

*Table 1. Assessment Results Year Two.*

| Brain development knowledge (T true or F false)   | Percent correct pre-test | Percent correct post-test | Percent correct end-of-semester |
|---|--------------------------|---------------------------|---------------------------------|
| Boys have bigger brains than girls (T)  | 8.3                      | 83.3                      | 83.3                            |
| Neuromyth (T true or F false)   |                          |                           |                                 |
| Children must acquire their native language before a second language is learned. If they do not do so neither language will be fully acquired (F) | 58.3                     | 75                        | 58.3                            |
| We only use 10% of our brain (F)  | 33.3                     | 91.7                      | 91.7                            |
| Some of us are "left-brained" and some are "right-brained" and this helps explain differences in how we learn (F)                                 | 33.3                     | 75                        | 83.3                            |
| There are critical periods in childhood after which certain things can no longer be learned (F)   | 41.7                     | 66.7                      | 83.3                            |
| Individuals learn better when they receive information in their preferred learning style (e.g. auditory, visual, kinesthetic) (F)                 | 8.3                      | 75                        | 50                              |
| Children are less attentive after consuming sugary drinks and/or snacks (F)   | 8.3                      | 75                        | 75                              |
| Regular drinking of caffeinated drinks reduces alertness (T)  | 58.3                     | 83.3                      | 83.3                            |
| Extended rehearsal of some mental processes can change the shape and structure of some parts of the brain (T)                                     | 58.3                     | 58.3                      | 75                              |
| Individual learners show preferences for the mode in which they receive information (e.g. visual, auditory, kinesthetic) (T)                      | 75                       | 58.3                      | 66.7                            |
| Learning problems associated with developmental differences in the brain function cannot be remediated by education (F)                           | 41.7                     | 58.3                      | 50                              |

### 4. Discussion

Persistent neuromyths for year two were the belief that "Children must acquire their native language before a second language is learned ...", and "Learning problems associated with developmental differences in brain function cannot be remedied by education." The myth about language acquisition was addressed in the neuroscientist's lecture, although minimally. It was also addressed in the reading by Schultz (2009). Belief in this myth varied widely in previous studies (e.g., Dekker et al., 2012; Dunder

& Gunduz, 2016; Ferrero et al., 2016; Karakus et al., 2014; Macdonald et al., 2017). More investigation is needed to determine why this myth is so persistent. Belief in the learnings problems myth is unfortunate, as this is an important concept related to a teacher's effectiveness in teaching those students with learning problems (Howard-Jones, 2014). This neuromyth was addressed solely in one article (Howard-Jones, 2014). Researchers plan to address this myth directly and completely in the following years.

Still problematic in year two was the distinction between individuals preferring to learn in a particular style and individuals learning better when they received information in a particular style. This topic was addressed in the textbook (Durwin & Reese-Weber, 2018) and in the Howard-Jones (2014) article. In year two, teacher candidates also read an article specifically targeting the learning styles myth (Papadatou-Pastou et al., 2021). Lacking was specific discussion of this topic during the lecture by the neuroscientist, pointing to a direction to take for the next year.

The belief that children are less attentive after consuming sugary drinks and/or snacks was addressed in the Howard-Jones (2014) reading, and in year two was additionally addressed with a collection of abstracts (Rosén et al., 1998; White & Wolraich, 1995; Wolraich et al., 1995) and related discussion, and explicitly in the lecture by the neuroscientist. Researchers found an improvement in understanding of this neuromyth, believed to be related to the additional resources and lecture discussion provided in year two. Improvement was also seen in the brain development knowledge question that "Boys have bigger brains than girls", which was emphasized and discussed during the lecture by the neuroscientist. Other neuromyths that were mentioned in the neuroscientist's lecture and mostly alleviated include the myth we only use 10% of our brain, some of us are left-brained and some are right-brained, there are critical periods in childhood after which certain things can no longer be learned, regular drinking of caffeine reduces alertness (true), and extended rehearsal changes the brain (true),

Findings of this study support the use of multiple sources of accurate brain development knowledge, and cement the belief that providing expert information directly from a neuroscientist benefits teacher candidates by lessening their belief in neuromyths and improving their brain development knowledge. Inclusion of neuroscience information has been found to be beneficial in several studies (e.g. Im et al., 2018; McMahan et al., 2019; Tadielo et al., 2022), reinforcing the finding that the presence of a neuroscientist as guest lecturer in the classroom adds legitimacy and substance to the information.

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## TEACHER'S PERCEPTIONS OF THE USEFULNESS OF BOARD GAMES IN ELEMENTARY SCHOOL

**Pierre Cès<sup>1,2</sup>, Mathilde Duflos<sup>1</sup>, Anne-Lise Doyen<sup>2</sup>, & Caroline Giraudeau<sup>1</sup>**

<sup>1</sup>*PAVeA Lab, EA 2114, Department of Psychology, University of Tours (France)*

<sup>2</sup>*ERCAE Lab, EA 7493, INSPE Centre Val de Loire, University of Orléans (France)*

### Abstract

Playing games at school can have a positive impact, particularly regarding student's motivation and learning efficiency. Various types of games are employed by teachers, including board games. Board games are defined as games with limited playing time, simple themes, and rules. They require a physical medium (e.g., a board, cards, dice), and are played by two or more players. While the educational value of games is widely recognized in the literature, few studies have delved into elementary school teachers' perceptions regarding playing board games at school, even though they are the ones encouraged to use them. The aim of this study is to address the following research questions: According to elementary school teachers, what's the interest of board games in the school context? Why elementary school teachers use (or don't use) board games in their class? In order to better understand teachers' perceived usefulness of board games in the school context, we conducted 3 focus groups (with three to five participants per group, 13 participants in all) with elementary school teachers teaching from first grade to fifth grade. The results of the thematic analysis conducted on Nvivo highlighted three relevant themes regarding our research questions: (1) Board games for academic learning, (2) Board games for emotions, social life, and coexistence and (3) Teachers' motivation, roles and rights. Indeed, teachers believe that the use of board games, as suggested by scientific literature, can benefit student learning (e.g., language, mathematics, geography...) but teachers believe that board games can also be an interesting tool from a social and emotional perspective, both for students and teachers. While studies on games in school often focus on children, this research provides insight into teachers' perspectives on board games in elementary school. Exploring teachers' perceptions of board games may help us better understand why board games are or are not used in the school context.

**Keywords:** *Board games, elementary school teachers, focus groups, perceptions.*

### 1. Introduction

Play promotes mental health in childhood and allows them to develop skills that are essential for academic success and everyday life (Whitebread et al., 2017). Moreover, playful activities, such as group games, symbolic play and creative activities support the skills needed for future learnings. Several researches have showed the effectiveness and the value of incorporating play-based learning in schools (Mardell et al., 2019). Some studies also showed that playful pedagogies are more effective for fostering learnings and are more likely to provide a deeper understanding compared to more traditional pedagogical approaches (Parker & Thomsen, 2019). Different types of games are used by teachers in elementary school, including board games (BG) (Koh et al., 2012). BG are defined as games with limited playing time, simple themes, rules, require a physical medium (e.g., a board, cards, dice), and are played by two or more players (Gobet et al., 2004). Two recent systematic reviews by Gauthier et al. (2019), and Noda et al. (2019) highlighted the benefits of BG in educational settings: they have beneficial effects on health-related behavior and education at all ages, facilitate social interactions between participants, which in turn can enhance learning opportunities (Gauthier et al., 2019; Noda et al., 2019).

Although we already have some information on teachers' perceptions regarding the use of games in schools, most of the studies used a broad concept when defining "games". Indeed, some studies have looked at teachers' perceptions of digital games (Huizenga et al., 2017), but to our knowledge there is very little information on teachers' perceptions of BG specifically, even though they frequently used by them (Koh et al., 2012). Furthermore, there is data on teachers' perceptions of play base learning at school but mainly on preschool or kindergarten teachers (Bubikova-Moan et al., 2019) and a limited number of

studies have investigated elementary school teachers (EST) perceptions. Thus, to fill the gap in the literature concerning EST perceptions of BG at school, we conducted three semi-structured focus group with 3 different public schools (13 teachers in all). Each focus group was composed of participants teaching between the first and fifth grades as well as the director of the establishment.

## 2. Design

Three focus groups were carried out, each one with three to five participants (13 participants in all). The focus groups lasted between 50 minutes and 1 hour 32 minutes. Demographic questions were first collected (i.e., age, gender, status, education, teaching experience, teaching grade and board games habits, see table 1 for participants characteristics). Open-ended questions focused on teachers' perceptions of BG in the school context (e.g. What do you think about the use of BG in elementary school? In your opinion, should BG be part of children's school experience?). The aim of our qualitative study is to explore EST perception of using BG at school and to address the following research questions:

RQ1: According to elementary school teachers, what's the interest of board games in the school context?

RQ2: Why elementary school teachers use (or don't use) board games in their class?

The qualitative data obtained during the interview were analyzed using thematic analysis (Braun & Clarke, 2006) on Nvivo.

*Table 1. Participants characteristics.*

|   | All participants | Teachers | Teachers/<br>directors |
|---|------------------|----------|------------------------|
| <b>N</b>  | 13               | 10       | 3                      |
| <b>Age M</b>  | 42.2             | 41.4     | 45                     |
| <b>Years of teaching (M)</b>  | 11.8             | 10.5     | 16.3                   |
| <b>How many teachers or teachers/directors (%) have given lessons in...</b> |                  |          |                        |
| <b>First grade</b>  | 76.9             | 80       | 66.6                   |
| <b>Second grade</b>   | 92.3             | 100      | 66.6                   |
| <b>Third grade</b>  | 69.2             | 70       | 66.6                   |
| <b>Fourth grade</b>   | 84.6             | 80       | 100                    |
| <b>Fifth grade</b>  | 84.6             | 80       | 100                    |
| <b>How many teachers or teachers/ directors (%) use board games</b>         |                  |          |                        |
| <b>In their teaching practice</b>   | 69.2             | 80       | 66.6                   |
| <b>In their personal life</b>   | 92.3             | 100      | 66.6                   |

### 3. Results

The results of the thematic analysis conducted on Nvivo revealed three themes of interest regarding the research questions mentioned above: (1) Board games for academic learning, (2) Board games for emotions, social life, and coexistence and (3) Teachers' motivation, roles and rights.

Concerning the first theme, (1) Board games for academic learnings, thematic analysis revealed that elementary teachers believe that the use of board games can benefit student learning. Indeed they all evoke the potential of BG for various academic learnings: *“I think board games are a fun way to teach children skills. I'm thinking mainly of mathematics, but it could also be French”* (Pauline, 30). Moreover, according to teachers, using BG can be beneficial for students with learning difficulties: *“It's another way of learning; I know that sometimes there are students who struggle with difficult exercises, and sometimes they shine a bit more with games because it's more playful”* (Mélanie, 27).

The second theme, (2) Board games for emotions, social life, and coexistence, highlighted teacher's perceived potential of board games for social and emotional competencies: *“It's crucial because the frustration they experience can be very challenging. Unfortunately, at home, parents make their children win to keep them happy and make it enjoyable”* (Françoise, 57) allowing children to experience social life through board games. Teachers also believe that board games are a genuine way for children to get to know each other *“Having to play with others, it forces the child to see what others can give, what they can reveal about themselves”* (Nathalie, 31).

In the third theme, (3) Teachers' motivation, roles and rights, teachers reported their personal interests, motivations in using board games in their class. Indeed, some of them reported that using board games enabled them to create a different bond with their student, to discover them in a different way, *“I like it because it creates a link, it changes, you see the students differently”* (Fabienne, 31) and to change their teaching methods and be more in an observational role *“Playing means accepting that you can learn in a different way, and being convinced that it brings something to the students. [...] It allows us to observe because we're not part of the game”* (Clarisse, 47).

### 4. Conclusion

Our results are in line with the existing literature. The board game interest for academics' learnings is widely recognize among scholars, nevertheless, this study also provides a new insight regarding elementary school teachers perceptions of board games. Indeed, this qualitative study provide new data regarding the teachers' perceived interest from an emotional and social perspective. Moreover, the qualitative analysis provides us new information about teacher's motivations for using board games in their classroom both for students and teachers. Indeed, while the existing literature focuses on the academics benefit of board games, few studies have highlighted the social and emotional interest of board games at school, especially in elementary school. Furthermore, research on games in schools often focuses on children; thus, this study offers the teachers' point of view on board games in elementary school.

Despite the results presented above, this study nevertheless have some limitations. As this research was carried out in a French context, it would be interesting to extend it to other cultural contexts to gain a more global view of teachers' perceptions of board games. This study only involved three focus groups, more participants are needed to generalize the result. However, gaining insight into teachers' perceptions on board games could enhance our comprehension of the educational, social, and emotional benefits that board games might offer, both for teachers and students.

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# PERCEPTIONS OF INCLUSION PROFESSIONALS ON EMPLOYABILITY OF INDIVIDUALS WITH INTELLECTUAL AND DEVELOPMENTAL DISABILITIES: A TRANSNATIONAL STUDY

Carla Sousa<sup>1</sup>, Júlia Pereira<sup>1</sup>, Paulina Tsvetkova<sup>2</sup>, & Cátia Casimiro<sup>1</sup>

<sup>1</sup>Lusófona University, CICANT (Portugal)

<sup>2</sup>Bulgarian Academy of Sciences (Bulgaria)

## Abstract

Individuals with Intellectual and Developmental Disabilities (IDD) face significant employment barriers, driven by societal biases, a lack of recognition of their abilities, and inadequate institutional policies. Addressing this requires transforming training professionals and the education system to embrace inclusive and adaptive practices. This transnational study aims to explore the perceptions of professionals in the field of inclusion of people with IDD about employability, investigating three specific aspects: (a) the pedagogical needs of trainers in this field; (b) reasonable accommodation as a structuring factor for a more inclusive world of work; and (c) the assessment and monitoring models in the labour context for people with IDD. With these objectives in mind, 43 professionals working daily with people with IDD in Italy, Portugal, Sweden and Türkiye were surveyed using an online questionnaire, with a set of multiple-choice questions based on previous comprehensive research on the employability of individuals with IDD. The obtained results highlight the importance of social skills and interpersonal communication in vocational training for individuals with IDD, particularly in Türkiye, while also noting Sweden's focus on problem-solving skills and Italy's emphasis on adaptive and self-care skills. The research reveals a preference for adaptive and personalized learning plans, especially in Portugal, Italy, and Sweden, indicating a shift towards customized educational strategies for learners with IDD. Furthermore, the study underscores the challenges in workplace accommodation due to a lack of employer awareness and the need for targeted training in countries like Türkiye, Italy, and Portugal, advocating for a broader adoption of assistive technologies to foster inclusive work and learning environments.

**Keywords:** *Intellectual and Developmental Disabilities, employment barriers, social inclusion, professional perceptions, reasonable accommodations.*

## 1. Introduction

Intellectual and Developmental Disabilities (IDD) encompass a range of conditions that involve substantial limitations in intellectual functioning and adaptive behaviour, which impact various skills necessary for daily life (Schalock et al., 2021). Being millions of people affected by IDD, this constitutes a global issue. Equally urgent in Europe, namely in Portugal (PT), Italy (IT), Türkiye (TR) and Sweden (SE), a study has shown that their limitations pose an obstacle to accessing work opportunities. Mainly due to the emergence of a highly skilled and technological work environment, this group's linguistics and digital literacy levels, lower training levels and hurdles in accessing and usage of assistive technologies are major obstacles (APD, 2012; ISFOL, 2014). This has led countries to develop a robust legal system to protect them. Securing work as a right for people with IDD, through the establishment of a proactive quota system, recognizing reasonable accommodations as essential and providing them training programs designed to facilitate the transition to employment.

However, individuals with IDD still face substantial obstacles that greatly hinder their ability to secure employment due to systemic barriers (AlFozan, & AlKahtani, 2021; Hall et al., 2017). An important barrier is a widespread failure to acknowledge their skills and potential in the labour market (AlFozan, & AlKahtani, 2021). This problem is worsened by insufficient institutional policies and practices that do not adequately consider the distinct requirements and abilities of this particular group (Baker et al., 2018). This oversight not only restricts job prospects for individuals with IDD but also deprives society of the advantages that come from their varied contributions.

To tackle these challenges, it is imperative to undergo a significant overhaul of the training and educational systems, considered a priority for future research in the field of employment for people with IDD (AlFozan, & AlKahtani, 2021). The primary objective of this change should be to establish a more comprehensive and flexible setting that is open to accommodate the unique requirements of individuals with IDD, based on the adoption of practical adjustments and the incorporation of assistive technologies (Boot et al., 2018; Chandola, & Rouxel, 2021; Sula, 2023). These interventions have the potential to greatly improve the learning and development experiences of individuals with IDD, thus enhancing their chances of finding employment (AlFozan, & AlKahtani, 2021; Almaky, 2020).

### **1.1. Design and objectives**

The present study adopts a primarily quantitative approach through surveys, situated within the broader context of action research, as a preparatory step for the development of a training program for professionals working in the employment of people with IDD. This methodological choice underscores the study's commitment to not only understanding but also actively contributing to the enhancement of inclusion practices in the workplace.

This transnational study aims to explore the perceptions of professionals in the field of inclusion of people with IDD about employability, investigating three specific aspects: (a) the pedagogical needs of trainers in this field; (b) reasonable accommodation as a structuring factor for a more inclusive world of work; and (c) and monitoring models in the labour context for people with IDD.

The selection of Portugal (PT), Italy (IT), Türkiye (TR), and Sweden (SE) as the countries for this study is intentional and stems from a funded project conducted in the respective field – No Barriers to Employment (2022-1-SE01-KA220-ADU-000089826). This selection demonstrates a deliberate focus on geographical distribution and capitalizes on the consortium's abilities. Therefore, the study seeks to include a wide variety of European regions to examine a broad range of practices and perspectives, hopefully enhancing the current understanding of the challenges individuals with IDD face in different socio-cultural settings.

## **2. Methods**

### **2.1. Participants**

This study included a non-probabilistic convenience sample, collected from the network of partners of a project in the area of labour inclusion, in four countries – PT, IT, TR, and SE. A total of 43 professionals working on the field of inclusion, namely with individuals with IDD were included in the sample, 13 from TR (30,20%), 12 from PT (27,90%), 10 from IT (23,30%), and 8 from SE (18,60%). Most participants identified as females ( $n = 28$ ; 65,10%), while 12 identified as males (27,90%), and three as non-binary (7,00%). Their ages ranged between 31 and 66 years old ( $M = 40,67$ ;  $SD = 10,34$ ).

Most professionals identified as “trainers and/or educators” ( $n = 11$ ; 25,60%), followed by: “teachers” ( $n = 10$ ; 23,30%); “other professionals working in the field of intellectual disability” ( $n = 8$ ; 18,60%); “staff from an NGO” ( $n = 7$ ; 16,30%); “health professional and/or therapist” ( $n = 6$ ; 14,00%); and “person with intellectual disability” ( $n = 1$ ; 2,3%).

### **2.2. Instruments and procedure**

The online form aimed to collect crucial insights from professionals in the field of IDD and inclusion. The first section gathered demographic data including gender, country of origin, and whether respondents identified primarily as professionals, individuals with disabilities, or both. The second part delved into specific topics related to inclusion, allowing respondents to select a maximum of three options among several choices. These options included necessary skills and teaching methods in vocational training for individuals with IDD, accommodations required for their employment, and the effectiveness of monitoring and evaluation processes. The questionnaire was developed based on previous research on the employability of people with IDD in the labour market, and the main faced challenges, including the findings from Athamanah et al. (2022) and Nord & Hepperlen (2016). The questionnaire was disseminated through an online form, with the support of the No Barriers to Employment consortium and the obtained data was subjected to statistical analysis.

## **3. Results**

Analyzing the questionnaires applied, it was found that the two most important skills in the vocational training of people with IDD are related to social skills and interpersonal communication ( $n = 32$ ; 74,41%), verified specifically in TR ( $n = 12$ ; 92,31%) and SE ( $n = 4$ ; 50,00%), and communication skills

( $n = 22$ ; 51,16%). Besides this, the results from IT show that the adaptive and self-care skills ( $n = 9$ ; 90,00%) are the most important, for PT are the technical and job-specific skills ( $n = 9$ ; 75,00%). SE also considers that the problem-solving skills ( $n = 4$ ; 50,00%) are important in the vocational training.

Regarding the most suitable pedagogical approach, it was found that the two most important skills in the vocational training of people with IDD are related to adaptive and personalized learning plans ( $n = 27$ ; 62,79%), which were verified in PT ( $n = 11$ ; 91,67%), IT ( $n = 8$ ; 80,00%), and SE ( $n = 5$ ; 62,50%) and peer-assisted learning and collaboration ( $n = 23$ ; 53,49%), represented only in IT ( $n = 8$ ; 80,00%). Besides this, the results from IT also show that hands-on training and experiential learning ( $n = 8$ ; 80,00%) are the most important, for TR individualized instruction ( $n = 10$ ; 76,92%) is the most important approach.

About the main challenges in integrating people with IDD into training, we found that although the two main challenges identified were related to the lack of trained instructors and support personnel ( $n = 19$ ; 44,19%) and the social isolation and interaction challenges ( $n = 18$ ; 41,86%), only in IT were the main challenges identified ( $n = 6$ ; 60,00%, in both). In the rest of the countries, the main challenge identified was unequal access to resources and support in PT ( $n = 7$ ; 58,33%) and SE ( $n = 4$ ; 50,00%) and communication barriers in TR ( $n = 9$ ; 69,23%).

On the other hand, the two most important key challenges for people with IDD in accessing reasonable accommodation and assistive technology in the workplace, according to the participants, were related to the lack of awareness and understanding among employers ( $n = 23$ ; 53,49%). This was also verified in TR ( $n = 9$ ; 69,23%), IT ( $n = 6$ ; 60,00%) and PT ( $n = 7$ ; 58,33%). The other key challenge identified was the lack of training for employees and HR staff, which was verified in PT ( $n = 9$ ; 75,00%), IT ( $n = 6$ ; 60,00%) and SE ( $n = 4$ ; 50,00%). In addition, TR had two other key challenges: inadequate legal protection and enforcement ( $n = 9$ ; 69,23%) and stigma and prejudice at work ( $n = 9$ ; 69,23%). The results are presented in Table 1.

Table 1. The main challenges in accessing reasonable accommodations and assistive technologies in the work context of people with IDD, according to the sample.

| In your opinion, what are the main challenges that people with IDD face in accessing reasonable accommodations and assistive technologies in the work context? |        |          |        |          |        |          |        |          |        |          |  |
|--|--------|----------|--------|----------|--------|----------|--------|----------|--------|----------|--|
|  | IT     |          | PT     |          | SE     |          | TR     |          | TOTAL  |          |  |
|  | %      | <i>n</i> | %      | <i>n</i> | %      | <i>n</i> | %      | <i>n</i> | %      | <i>n</i> |  |
| Lack of Awareness and Understanding Among Employers  | 60,00  | 6        | 58,33  | 7        | 12,50  | 1        | 69,23  | 9        | 53,49  | 23       |  |
| Financial Constraints for Providing Assistive Technologies   | 50,00  | 5        | 25,00  | 3        | 0,00   | 0        | 23,08  | 3        | 25,58  | 11       |  |
| Inadequate Legal Protection and Enforcement  | 20,00  | 2        | 8,33   | 1        | 37,50  | 3        | 69,23  | 9        | 34,88  | 15       |  |
| Stigmatization and Bias in the Workplace   | 20,00  | 2        | 25,00  | 3        | 37,50  | 3        | 69,23  | 9        | 39,53  | 17       |  |
| Limited Availability of Customized Accommodations  | 40,00  | 4        | 33,33  | 4        | 25,00  | 2        | 23,08  | 3        | 30,23  | 13       |  |
| Communication Barriers to Requesting Accommodations  | 0,00   | 0        | 25,00  | 3        | 37,50  | 3        | 15,38  | 2        | 18,60  | 8        |  |
| Insufficient Training for Employees and HR Personnel   | 60,00  | 6        | 75,00  | 9        | 50,00  | 4        | 15,38  | 2        | 48,84  | 21       |  |
| Bureaucratic Hurdles in the Accommodation Approval Process   | 30,00  | 3        | 25,00  | 3        | 37,50  | 3        | 7,69   | 1        | 23,26  | 10       |  |
| Total  | 100,00 | 10       | 100,00 | 12       | 100,00 | 8        | 100,00 | 13       | 100,00 | 43       |  |

According to the sample, the three best strategies to assess an organization's inclusion environment are focus groups and inclusive workplace committees ( $n = 25$ ; 58,14%), confirmed in SE ( $n = 5$ ; 62,50%), employee surveys and feedback ( $n = 23$ ; 53,49%), confirmed in TR ( $n = 11$ ; 84,62%), and external audits and assessments by diversity and inclusion experts, confirmed in IT ( $n = 7$ ; 70,00%) and PT ( $n = 8$ ; 66,67%). Inclusion metrics and KPI tracking were also found to be an important assessment strategy by SE participants ( $n = 5$ ; 62,50%).

Finally, it was identified that the two best strategies to assess the organizational inclusion of people with IDD are related to conducting inclusive focus groups and workshops with these employees ( $n = 28$ ; 65.12%), identified as best in TR ( $n = 76.92\%$ ), IT ( $n = 6$ ; 60.00%) and SE ( $n = 4$ ; 4.60%). It is also important to have performance reviews and career tracking ( $n = 20$ ; 46.51%). Whereas, for PT respondents, the best strategy is to have focus groups and feedback from employees with intellectual disabilities ( $n = 9$ ; 75%). SE participants also identified working with disability organizations for assessment as one of the best strategies.

#### 4. Discussion

This international study, conducted to investigate professional perspectives in the area of inclusion for individuals with IDD, has produced valuable results in four distinct domains: pedagogical needs, vocational training skills, workplace accommodation, and monitoring models in the labour context for people with IDD.

The study focuses on the crucial significance of social skills and interpersonal communication in vocational training for individuals with IDD, with a specific emphasis on the Turkish context. Sweden and Italy, although following the overall pattern, also presented distinct viewpoints; Sweden accented on the importance of problem-solving abilities, while Italy highlighted the significance of adaptive and self-care skills. These differences demonstrate the wide range of cultural and educational environments in which the professionals work and are aligned with the findings of Jansen-van Vuuren & Aldersey (2020), regarding the experiences of stigma for people with IDD and their families across diverse cultures.

An identified trend is the paramount importance of social skills and interpersonal communication in vocational training for people with IDD was also noted, with a specific focus on Türkiye. On the other hand, Sweden respondents also highlighted the significance of problem-solving skills, and Italy underscored the importance of adaptive and self-care skills. These results reflect findings which focus on training vocational social skills which are crucial for enhancing the prospects of obtaining employment, positive health outcomes, and social and economic well-being (Helbig et al., 2023).

Our findings also shed light on the pedagogical approaches preferred in vocational training. Adaptive and personalised learning plans were widely preferred, especially in Portugal, Italy, and Sweden. This indicates an increasing acknowledgement of the necessity for customised educational approaches that address the specific requirements of learners with IDD (Casale-Giannola et al., 2023). Italy demonstrated a notable inclination towards hands-on training and experiential learning, suggesting a practical focus on their teaching methods.

Concerning workplace accommodation, there was a notable agreement regarding the difficulties arising from employers' lack of knowledge and the necessity for more focused training for employees and HR personnel, particularly in Türkiye, Italy, and Portugal, indicating a widespread need to improve the comprehension and abilities of employers and HR professionals to establish more inclusive workplaces. The included participants highlighted the role of assistive technologies in the vocational training and employment of people with IDD, noting their potential to make learning and working environments more inclusive and accessible. The study's findings call for a concerted effort to embrace these technologies across countries, with a focus on training and awareness, to ensure their effective implementation and to maximize their impact on the inclusion of people with IDD in the workforce.

In terms of monitoring models for the inclusion of people with IDD in the labour market, the study revealed a preference for inclusive focus groups and workshops, as well as performance reviews and career tracking. Nevertheless, in Portugal, the emphasis was on gathering direct feedback from employees with IDD, which can provide invaluable insights into the effectiveness of inclusion strategies.

##### 4.1. Limitations and future directions

Although this study is extensive in its coverage, it does have some limitations. Primarily, the findings heavily rely on the perspectives of experts in the domain, potentially overlooking the firsthand experiences and requirements of people with IDD.

Moreover, the study encompasses multiple countries, but the diverse socio-cultural and economic contexts may impact the applicability of the results, namely considering the variations in policy frameworks and levels of technology adoption among them.

The study also lacked a comprehensive investigation into the utilisation of particular categories of assistive technologies, thereby restricting the comprehension of how these technologies can be optimally incorporated into vocational training and workplace adaptation.

Besides enhancing the cultural framing of the research, future studies should aim to include the direct input and experiences of individuals with IDD, since this would provide a more holistic

understanding of the effectiveness and relevance of the vocational training and employment strategies being employed.

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## **DIVERSITY MANAGEMENT TO REDUCE STEREOTYPES AND DISCRIMINATION IN SOCIETY**

**Maija Zakrizevska-Belogrudova**

*Faculty of Business and Economics, RISEBA University of Applied Sciences, professor (Latvia)*

### **Abstract**

Globalization, increasing mobility and migration, and the entry of new generations into the labour market have made the modern work environment very diverse, different people have to live together and cooperate in it. The working environment in Latvia is also significantly affected by demographic changes (the “ageing” of society), which in the near future may have a negative impact on companies' chances of finding and attracting labor. It should be mentioned that in Latvia members of the lesbian, gay, bisexual and transgender (hereinafter - LGBTQ+) communities are avoided or not talked about at all. This topic is still considered a taboo not only in Latvia but also in many parts of the world (especially in the eastern part of Europe). However, modern society cannot ignore the fact that representatives of these groups exist.

The aim of the study is to investigate the attitude and stereotypes of the working society towards homosexual people in the working environment, thus finding out whether this group of society can feel respected in the working environment.

To achieve the goal of the work and to answer the research questions, the author of the work surveyed the able-bodied part of society on attitudes (which included three scales: emotional, cognitive and behavioural) and stereotypes (one scale) towards homosexual people in the work environment. 252 respondents who were part of the able-bodied population took part in the survey. Analyzing the data, it was concluded that the stereotypes residing in an individual can strengthen both their emotions and behavior. Research data also shows that emotions have the greatest influence on people's stereotypes. The majority (76%) of respondents do not find homosexual people unpleasant, which can be considered a very positive aspect of the work environment.

**Keywords:** *Diversity, attitudes, stereotypes, homosexuality.*

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### **1. Introduction**

Lesbian, gay, and bisexual individuals represent a significant yet relatively understudied minority group in the workforce (Ragins, 2004). It is important to understand and address the stereotypes that exist about homosexual individuals in the workplace. These stereotypes can impact how gay men and lesbians are perceived when it comes to their suitability for specific occupations (Clarke & Arnold, 2018).

In Latvia, only in recent years have issues of diversity become more and more relevant. In the period from 2017 to 2022, the Society Integration Fund implemented the project "Diversity is Strength" with the support of the European Social Fund. The aim of the project is to promote the employment and socio-economic inclusion of persons exposed to the risks of social exclusion and discrimination, while promoting public awareness and general understanding of the prevention of discrimination and an inclusive society. Within the framework of the project, an assessment of the promotion of diversity in companies was carried out annually, presenting an award in five categories: employee diversity, diversity and inclusion management, inclusive work environment, diversity and inclusion in labor relations and promotion of diversity and inclusion (Dažādībā ir spēks, 2022). It should be mentioned that there is an LGBT movement in Latvia with the aim of improving the legal status of LGBTQ+ people in Latvia, but its efforts have not resulted in success so far. The bill "Life partners" can be mentioned as the last one, the most widely discussed in Latvian society. The purpose of the bill is to recognize the legal protection of unmarried couples, including protection for same-sex relationships (Dzīvesbiedri, 2019). In 2019, this draft law was rejected in the Saeima, only on December 10, 2021, did the Supreme Court pass a verdict in the case in which it was determined that same-sex partnerships should be registered as marital status, and also determined that same-sex partnerships can be recognized as family.

Stereotypes refer to widely held and oversimplified beliefs or generalizations about a particular group of people or things. Stereotypes are collective achievements that are formed and shaped by societal norms, cultural influences, and individual experiences. These beliefs or generalizations are often based on limited information or preconceived notions, rather than individual characteristics or personal experiences (Klein, et al., 2015). One way to reduce the impact of stereotypes is by teaching growth mindsets (Melson-Silimon, et al., 2023). A growth mindset is the belief that abilities and traits can be developed and improved through effort, rather than being fixed or innate (Hecht, et al., 2023). Stereotypes about homosexuality have been prevalent in society for a long time. These stereotypes often depict individuals within the LGBTQ+ community in a narrow and one-dimensional way, ignoring the diversity and complexity of their experiences. Common stereotypes include assumptions about gender expression, relationship dynamics, and behavioral traits. These stereotypes can have damaging effects on the mental health and well-being of the LGBTQ+ community, contributing to stigma and discrimination. It's important to challenge and debunk these stereotypes by promoting understanding, empathy, and inclusivity. By educating ourselves and others about the diverse and multifaceted nature of human sexuality, we can work towards creating a more accepting and supportive society for everyone. The effects of an LGBTQ+ identity and support systems on mental health are complex and influenced by various factors (Madireddy, Madireddy, 2020). These factors can include societal acceptance, access to supportive resources and communities, and the individual's own process of self-acceptance (Glazzard, et al., 2020).

The data of the 2019 Eurobarometer report of the European Commission show that among the respondents surveyed in the European Union, the following is seen as a very common form of discrimination: Belonging to the Roma nationality - 61%; Ethnicity and skin color - 59%; Sexual orientation - 53%; Religion and philosophical beliefs - 47%; Disability - 44%; Age - 40%; Discrimination due to gender - 35%. (European Commission, 2003). LGBTQ+ employees face unique challenges in the workplace due to stereotypes and biases, but by promoting inclusive practices and fostering a supportive environment, organizations can empower these employees to thrive and succeed. -LGBTQ+ employees bring valuable perspectives and experiences to the table, and it is essential to create an inclusive work environment that recognizes and celebrates their diversity (Tinoco-Giraldo & Voorhies, 2020).

Attitudes play a crucial role in social psychology, as they shape our thoughts, feelings, and behaviors towards people, objects, and situations. They are formed through a combination of personal experiences, socialization processes, and cultural influences. Attitudes are evaluative assessments or judgments that we hold about something or someone, and they can range from positive to negative. Attitudes influence our perceptions and interpretations of the world around us, as well as guide our actions and decisions (McGuire, 1986). Attitudes are composed of three main components: emotions, cognitions, and behavior. Emotions refer to the affective aspect of attitudes, involving our feelings and reactions towards the attitude object. Cognitions represent the beliefs, thoughts, and knowledge we hold about the attitude object (Zalesny & Ford, 1990). Finally, behavior encompasses our actions and responses about the attitude object. These components work together to shape and influence our attitudes, ultimately impacting our interactions and relationships with others. Understanding the interplay of emotions, cognitions, and behavior within attitudes provides insight into how attitudes are formed, maintained, and changed over time. In addition to being influenced by personal experiences, socialization processes, and cultural influences, attitudes are also shaped by individual values and beliefs. Some attitudes are more important than others because they are more useful to us and thus have a greater impact on our daily lives. As such, attitudes are changeable (Bonsteel, 2012). In conclusion, attitudes are a vital aspect of social psychology, influencing our thoughts, feelings, and behaviors towards the world around us. By understanding the components of attitudes - emotions, cognitions, and behavior - and how they interact, we gain insight into how attitudes are formed, maintained, and altered over time. Additionally, recognizing the influence of personal experiences, socialization processes, cultural factors, values, and beliefs on attitudes helps us comprehend their complexity and changeability. Ultimately, attitudes play a significant role in shaping our interactions and relationships with others, highlighting their importance in the field of social psychology.

## 2. Objectives

**The aim of the study** is to investigate the attitude and stereotypes of the working society towards homosexual people in the working environment, thus finding out whether this group of society can feel respected in the working environment. 252 respondents who were part of the working population took part in the survey.

**The research questions are:** 1. What is the attitude of the able-bodied society towards homosexual people in the working environment? 2. What are the stereotypes of the able-bodied part of society about homosexual people in the working environment? 3. Is there a statistically significant relationship between stereotypes about homosexual people and attitudes towards homosexual people in



the work environment? 4. Does the attitude of the able-bodied society affect stereotypes towards homosexual people? The study was conducted from May 1 to May 30, 2023.

### 3. Methods

The primary data collection methods were a survey designed by the author to find out attitudes and stereotypes, which had four scales: Emotion scale, Cognitive scale, Behaviors, Stereotypes. The survey was created on the <https://new.webropolsurveys.com/> platform. In the introductory part of the survey, respondents filled in demographic indicators about themselves: gender, age, education level, employment status and region of residence. The second part was compiled with the aim of finding out the respondents' attitudes and stereotypes: cognitive, emotional, behavioral and stereotypes towards homosexual people in the work environment. The survey uses a Likert scale.

The results of the study on the demographic indicators of the respondents allow us to conclude that 17% of men and 83% of women participated in the survey. Evaluating age, most young people were aged 18-25 (12%), able-bodied aged 26-32 were 33%, while aged 33-45 were 39% and aged 46-55 were 10% and in the age group 55 older people were 6%. When asked about their employment status, 16% of the study participants indicated that they were managers, the majority, or 77%, noted that they were in a subordinate position, while 7% were on parental leave. According to the education of the respondents of the study, one out of 252 respondents or 0.4% had basic education; secondary education is 23.8%, the majority of respondents 170 or 67.5% had higher education; and 8.3% indicated that they're currently studying.

Cronbach's alpha coefficient calculation is all  $\alpha >$  is 0.806, which indicates that the set of questions created is acceptable and the survey is reliable.

According to the results of the Kolmogorov-Smirnov (K-S) Z test, it was concluded that the data do not correspond to the normal distribution, and the non-parametric data analysis method Spearman's correlation was used.

### 4. Results

#### 4.1. Results of a survey on the attitudes and stereotypes of the working-class community about homosexual people

In the survey, the respondents were asked the question, "I respect every person, regardless of their sexual orientation." Most of the 252 respondents 189 (75%) answered that they respect any person regardless of their orientation, and 21%, or 52 respondents, answered with the answer "I agree more." From these answers, it can be concluded that the absolute majority, i.e., 96% of the surveyed respondents, respect the other person, regardless of sexual orientation. Respondents were asked the question, "I don't care about homosexual people, but I don't want this topic to be popularized in wider society and the same-sex couple relationship model to be normalized." According to the collected results of the survey, the opinion of the respondents was divided, with 49%, or 124 respondents, agreeing or partially agreeing with the statement that they are indifferent to homosexual people, but still they do not want this topic to be popularized in the wider society and the same-sex couple relationship model to be normalized. Almost the same, or 127 respondents answered negatively. The survey data shows that the absolute majority of respondents would not change their attitude towards a colleague if they found out that he or she was homosexual. 94% of respondents answered affirmatively, or agreed more than disagreed to the question of where respondents were asked "My attitude towards a colleague would not change if I found out that he/she is homosexual." Only 15 respondents answered that their attitude towards a colleague would change if they found out that he or she was homosexual. Also, the survey data shows that the surveyed respondents would not have any problems working in the same organization with homosexual people. Only 3% or 7 respondents would have problems working in the same organization with homosexual people, while 231 respondents answered that they would have no problem working in the same organization with homosexual people. The survey shows that only 30 respondents have spoken disparagingly about homosexual people. Respondents were asked the question "I would like to support public events dedicated to same-sex families," to which 21% agreed and 28% of respondents marked the answer "more agree." On the other hand, 25% marked the answer "disagree" and 26% marked the answer "disagree more." Most of the respondents think that homosexuality is over-promoted nowadays. The data from the answers show that most of the respondents, or 64% of all respondents (36% answered that they agree with the statement, and 28% of the respondents noted that they agree more than disagree). On the other hand, 37% agree and agree more with the statement that homosexuality is a free choice of every person, which is quite a lot, but the remaining 63% do not believe that homosexuality is a free choice of every person. The research data revealed that a large part of the respondents have stereotypes about homosexual people being recognizable by their visual appearance.

According to the survey data, it can be concluded that there are enough respondents who think that homosexuality is a fake “fashion trend” today; 34% of all respondents more agree with the statement or agree that homosexuality is a “fashion trend” today.

**4.2. Survey results on the relationship between the attitudes of the able-bodied community and stereotypes about homosexual people**

Evaluating Spearman’s correlation data between variables, it can be concluded that there is a moderately significant relationship between behavior and emotions, where the correlation coefficient is  $r = 0.464$  and  $sig = 0.000$ . This leads to the conclusion that emotions are related to behavior. The positive value of the correlation coefficient allows us to conclude that as the behavior factor increases, emotions also increase, and vice versa. A moderately close and significant relationship also exists between the behavioral and cognitive scales, where the correlation coefficients are  $r = 0.450$  and  $sig = 0.000$ ; therefore, it can be concluded that an individual’s thinking can change his behavior. Also, a moderately close correlation can be observed between the emotion scale and the cognitive scale ( $r = 0.430$ ;  $sig = 0.000$ ). Accordingly, it can be concluded that thinking is related to the emotions of the individual. According to the results, the results of a statistically significant correlation may indicate several mutually significant relationships: • as thinking increases, stereotypes can also increase, i.e., the more people think, the more they stereotype ( $r = 0.338$ ); • based on accepted stereotypes, emotions may increase ( $r = 0.304$ ); based on the existing stereotypes, the behavior of individuals can also change ( $r = 0.322$ ). So it could be assumed that the more a person thinks, the more he stereotypes, which in turn is related to both emotions and future behavior.

**4.3. Results of a survey on the influence of emotions and thinking on stereotyping of homosexual people**

With the help of linear regression, the influence of the independent variables (emotion Scale, Cognitive Scale) on the dependent variable Stereotypes was studied.

Table 1. Linear regression model summary.

| Model | R    | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|------|----------|-------------------|----------------------------|
| 1     | 0.45 | 0.20     | 0.19              | 0.46141                    |

a. Predictors: (Constant) Cognitive Scale, Emotion Scale

In table 1, it can be seen that the correlation coefficient is  $R=0.45$ , indicating a moderately close relationship,  $sig = 0.00$ , i.e.  $sig < 0.05$ , which means that the model is statistically significant and valid for interpretation. The coefficient of determination  $R^2 = 0.20$ , which indicates that all the indicated variables have a 20% influence and can explain the relationships of stereotypes in the linear regression model. And that means the remaining 80% depends on variables not included in the model.

Table 2. ANOVA<sup>a</sup> Summary.

| Model |            | Sum of Squares | df  | Mean Square | F      | Sig. |
|-------|------------|----------------|-----|-------------|--------|------|
| 1     | Regression | 12.469         | 2   | 6.235       | 29.014 | .00  |
|       | Residual   | 53.506         | 249 | .215        |        |      |
|       | Total      | 65.975         | 251 |             |        |      |

a. Dependent Variable: Stereotypes

b. Predictors: (Constant), Cognitive Scale, Emotion Scale

Table 3. Linear regression coefficient<sup>a</sup>.

| Model |                 | Unstandardized Coefficients |            | Standardized Coefficients | t     | Sig. |
|-------|-----------------|-----------------------------|------------|---------------------------|-------|------|
|       |                 | B                           | Std. Error | Beta                      |       |      |
| 1     | (Constant)      | 1.353                       | .149       |                           | 9.099 | .000 |
|       | Cognitive Scale | .236                        | .073       | .207                      | 3.250 | .001 |
|       | Emotion Scale   | .222                        | .047       | .302                      | 4.749 | .000 |

a. Dependent Variable: Stereotypes.

Table 3 shows that stereotypes (the dependent variable) and the p-values of the cognitive scale and the emotion scale of the independent variables are less than 0.00, so with a probability of 99% it can be said that these coefficients are different from 0. Cognitive and emotion scale affect the stereotype. Emotions have a greater influence on stereotypes (Beta=0.30). The beta shows how big the impact is.

Similar to correlation - if Beta is positive, then as the influence of emotions and cognitive scales increases, the influence of stereotypes will increase.

## 5. Conclusions

The research data revealed that a large number of respondents believe that homosexuals are recognizable by their visual appearance. The majority (76%) of respondents do not find homosexual people unpleasant, which can be considered a very positive aspect of the work environment. The survey data shows that the surveyed respondents would not have any problems working in the same organization with homosexual people. The most statistically significant correlations are formed between the independent variables: the cognitive scale and stereotypes, which means that stereotypes occur at the cognitive level. The linear regression model proved that the independent variables emotion and cognitive have the greatest influence on the variable stereotype. Stereotyping is influenced by the cognitive factor, which means that people come up with stereotypes and they arise directly by participating in a thought process that can create emotions. So stereotypes can be eradicated by changing the way of thinking. You can change the mindset by educating the public in workplaces on diversity issues, which employers should take care of.

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## LONGITUDINAL CHANGES IN VOCATIONAL INTERESTS IN MIDDLE ADOLESCENCE

**Iva Šverko, Toni Babarović, Mirta Blažev, Iva Černja Rajter, & Dora Popović**  
*Ivo Pilar Institute of Social Sciences (Croatia)*

### Abstract

Numerous studies have examined vocational interests, finding strong cross-cultural equivalence for the Spherical model. This model explains variability in interests toward different work fields, like People versus Things, and Ideas versus Data, as well as interests in occupations with varying educational levels or Prestige. Croatia has a rich history of vocational interest research in early and middle adolescence, with cross-sectional studies suggesting interest structures emerging around age 14. This study adds to the literature by longitudinally investigating vocational interest changes during adolescence. The sample included middle adolescents followed for three years (ages 16, 17, and 18; N=360), using the Croatian version of the Personal Globe Inventory-Short to measure vocational interests. The data confirm the hypothesized hexagonal RIASEC structure across all three time points. Girls scored higher on People-Things and Prestige dimensions, with no gender differences in Data-Ideas. A moderate drop in Prestige dimension was observed, while the other dimensions remained stable. Interest profile elevation remained consistent, with slight decreases in differentiation. Moderation effects were discussed, aligning with theoretical expectations and prior studies, offering implications for career counseling practices.

**Keywords:** *Vocational interests, RIASEC, adolescence, vocational choices, career counseling.*

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### 1. Introduction

Career development during adolescence involves different key tasks related to constructing one's career path, with self-concept crystallization being one of them (Savickas et al., 2018). The development of a clear vocational self-concept hinges on development of vocational interests. Hence, this study seeks to explore development of vocational interests among middle adolescents, aiming to uncover significant patterns of change across the three dimensions of vocational interests (People-Things, Ideas-Data, and Prestige) as well as the two characteristics of vocational interest profiles (Interest Differentiation and Profile Elevation).

The three vocational interest dimensions, namely People-Things, Ideas-Data, and Prestige, correspond to the underlying structure of the Spherical model of interests (Tracey, 2002), which has been strongly supported across various cultures. The People-Things dimension reflects an individual's inclination towards interpersonal interactions over working with objects, tools, or machinery, whereas the Ideas-Data dimension pertains to a preference for generating novel procedures and solutions rather than adhering to established rules when dealing with information. Both of these dimensions were previously identified within the Hexagonal model of interests (Holland, 1997; Prediger, 1982). The Prestige dimension represents an individual's inclination towards pursuing extended educational training, assuming greater responsibilities in work, and seeking out prestigious occupations. Addition of Prestige presents an expansion of the model as the concept of prestige was traditionally situated within the realm of values, making its incorporation into the measurement of vocational interests a notable advancement.

The two characteristics of vocational interest profile encapsulate the clear directedness (Interest Differentiation) and overall height (Profile Elevation) of an individual's interest profile. Interest Differentiation signifies the degree to which an individual's interests are clearly focused on specific occupational activities. Holland (1985) proposed that individuals with more differentiated interest profiles possess a clearer understanding of their likes and dislikes, leading them to more informed career decisions and favorable career outcomes such as job satisfaction and performance, as evidenced in prior research (e.g., Hirschi & Läge, 2007). Conversely, Profile Elevation refers to the overall level of interests across all domains, indicating either a high preference for various occupational activities (high profile) or a lack of interest in multiple domains (low profile). Studies have provided methodological explanations for its

nature, but have also substantiated its significance in terms of its association with traits such as general curiosity, openness, enthusiasm, optimism, or interest flexibility, which are, in turn, linked to better adaptation to work tasks and environments, as indicated in research findings (e.g., Tracey, Allen & Robbins, 2012).

During middle adolescence, a distinct spherical structure of vocational interests has been consistently observed across various cultures, as evidenced by research (e.g. Darcy, 2005; Hedrih, 2008; Long, Adams, & Tracey, 2005; Tracey, 2002; Tracey, Watanabe, Schneider, 1997, Wilkins et al., 2013), including studies conducted in Croatia (Šverko, 2008; Šverko et al., 2014). However, there has been relatively less emphasis on examining the developmental changes in interest endorsement and the specifics of interest profiles during this period. Studies which tapped into longitudinal changes in interests mainly evidenced different pattern of change in early and late adolescence. While early adolescence is characterized by general drop in interest scores, the contrary is true for the late adolescence (Hoff et al, 2018). When considering particular interest scales, it was observed that interests for working with people tended to increase during adolescence, while interests for working with things showed reverse pattern of change.

Given that adolescence is a crucial stage for the crystallization of one's career self-concept, we wanted to explore changes in vocational interests during high school as this is the time when individuals strongly reflect upon their personal goals, strengths, and opportunities. Therefore, the main goal of this study is to longitudinally explore stability and change in vocational interests in middle adolescence.

## 2. Objectives

This paper focuses on the change in vocational interests during middle adolescence by empirically exploring temporal changes in vocational interest dimensions and characteristics of vocational interest profiles.

## 3. Methods

### 3.1. Study design

A longitudinal research design was utilized, starting with a cohort of high school students from the 2<sup>nd</sup> grade (around 16 years old), who were then tracked for three consecutive years. This study is part of a broader research project funded by the Croatian Science Foundation titled "Free Career Choice" (Project No. IP-2019-04-7537), which focuses on examining the career development of young and middle adolescents.

### 3.2. Instruments

The Croatian version of the Personal Globe Inventory Short (PGI-Short; Tracey, 2010) was applied to assess vocational interests. The PGI provides scores on 10 interest scales (Social Facilitating, Managing, Business Detail, Data Processing, Mechanical, Nature/Outdoors, Artistic, Helping, High Prestige, and Low Prestige), six RIASEC scores, and dimensions including People-Things, Ideas-Data, and Prestige. Originally, the instrument comprises 40 vocational activities rated for liking and competence on a 7-point Likert scale. However, in this study, only the liking scales were employed. Prior research has consistently supported the structural validity of the PGI across various cultural contexts (e.g., Tracey, 2010; Zhang, Kube, Wang & Tracey, 2013), including in the Croatian context (Šverko & Babarović, 2016). The reliability of the interest scales in this study, measured by Cronbach alpha coefficients at T1, ranged from .59 to .86, with a median of .77, indicating satisfactory reliability of the short interest scales ( $k=4$ ). Additionally, the circular ordering of the six PGI RIASEC scales was strongly supported ( $CI_{2nd\ grade} = .94$ ,  $CI_{3rd\ grade} = .93$ ,  $CI_{4th\ grade} = .90$ ).

### 3.3. Sample

The sample comprised 360 adolescents, including 128 boys and 232 girls, who were tracked over a three-year period at ages 16, 17, and 18. Assessments were conducted three times during the spring seasons of 2021, 2022, and 2023, while the participants were in their second, third, and fourth years of secondary school, respectively. The assessments were administered in the participants' schools using computerized tools.

### 4. Results

To explore longitudinal shifts in vocational interest dimensions and characteristics of interest profiles, we employed five Repeated Measures ANOVA Models, with gender acting as the between-group factor. Our findings, detailed in Table 1 and depicted in Figures 1 and 2, shed light on the evolving nature of vocational interests during middle adolescence.

Findings indicate that girls displayed a markedly higher interest in working with people compared to boys, as indicated by a very large and expected gender effect on the People-Things dimension ( $\eta^2 = .368$ ). No temporal changes were observed in the People-Things dimension, but a small interaction effect ( $\eta^2 = .023$ ) suggested that boys and girls exhibited different pattern of change in interest towards people vs. things during adolescence. As depicted in Figure 1, girls tended to decrease their interest in people while boys tended to decrease their interest in things, thereby both reducing gender-typical interest endorsements over time. Dimension Ideas-Data remained stable across adolescent years, with no gender nor interaction effect. We observed a small decline in the Prestige dimension ( $\eta^2 = .045$ ). Also, girls generally exhibited a stronger inclination towards more prestigious occupations, as evidenced by a strong gender effect ( $\eta^2 = .185$ ).

Furthermore, a slight decrease in Interest Differentiation was observed over time ( $\eta^2 = .021$ ), with similar trends observed for both boys and girls. However, girls exhibited greater interest differentiation overall ( $\eta^2 = .052$ ) compared to high-school boys. Lastly, no main effects of time and gender on Profile Elevation were observed, but a small interaction effect ( $\eta^2 = .030$ ) revealed distinct gender patterns of changes during adolescence: while both genders started at similar profile elevations, boys raised their interests towards all occupational domains, whereas girls decreased their interests in general (Figure 2).

Table 1. Longitudinal differences in vocational interests during middle adolescence: temporal and gender effects and their interaction (N = 360).

|                 | Temporal effect |          |      |          | Gender effect |          |      |          | Interaction |          |      |          |
|-----------------|-----------------|----------|------|----------|---------------|----------|------|----------|-------------|----------|------|----------|
|                 | F               | df1, df2 | p    | $\eta^2$ | F             | df1, df2 | p    | $\eta^2$ | F           | df1, df2 | p    | $\eta^2$ |
| People-Things   | 1.00            | 2, 716   | .367 | .003     | 208.07        | 1, 358   | .000 | .368     | 8.25        | 2, 716   | .000 | .023     |
| Ideas-Data      | .461            | 2, 716   | .631 | .001     | 1.38          | 1, 358   | .241 | .004     | .839        | 2, 716   | .433 | .002     |
| Prestige        | 17.02           | 2, 716   | .000 | .045     | 81.50         | 1, 358   | .000 | .185     | .71         | 2, 716   | .494 | .002     |
| Differentiation | 7.863           | 2, 716   | .000 | .021     | 19.59         | 1, 358   | .000 | .052     | 1.55        | 2, 716   | .213 | .004     |
| Elevation       | 1.43            | 2, 716   | .241 | .004     | 4.53          | 1, 358   | .034 | .012     | 10.98       | 2, 716   | .000 | .030     |

Figure 1. The pattern of changes in vocational interest dimensions during middle adolescence (N = 360, boys-solid line, girls-dotted line).

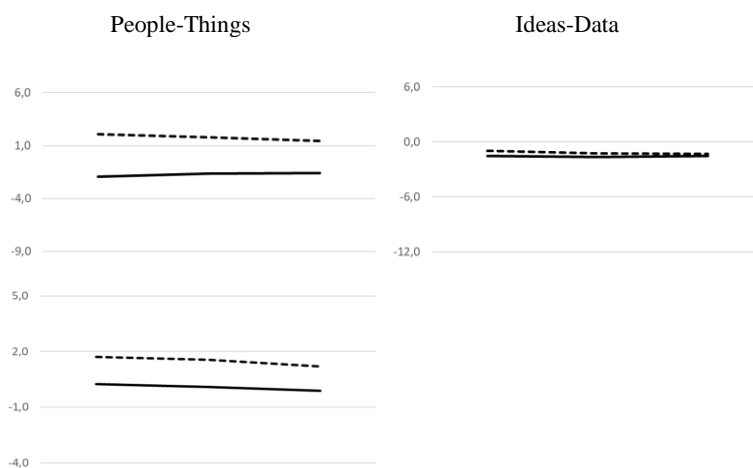
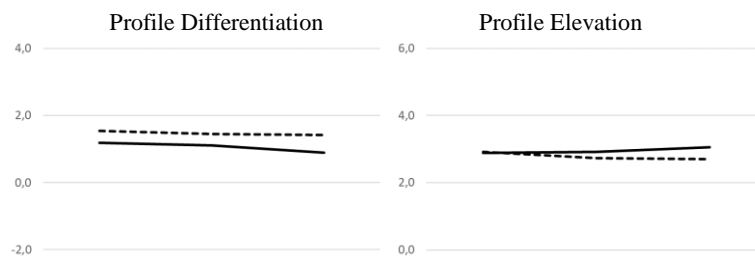


Figure 2. The pattern of changes in vocational interest profiles during middle adolescence (N = 360, boys-solid line, girls-dotted line).



## 5. Discussion & conclusion

The findings suggest that vocational interests tend to remain relatively stable throughout middle adolescence, with minimal changes occurring between the ages of 16 and 18. Although there was a slight decline noted in Prestige over time, overall vocational interests showed consistency during this period. Prior research on longitudinal shifts in prestige or occupational aspirations from early adolescence to young adulthood has yielded somewhat inconclusive findings, with some studies hinting at possible curvilinear trends (Lee & Rojewski, 2012; Lee, 2009; Miyamoto & Wicht, 2020; Tracey et al., 2005). Moreover, studies have consistently shown a stronger inclination among girls toward activities with higher prestige (e.g., Korlat et al., 2023; Tao et al., 2022), a trend also observed in our study.

Expected gender differences emerged prominently in the People-Things dimension, with girls exhibiting a greater preference for people-oriented activities, aligning with established literature (e.g., MacDonald et al., 2023; Su et al., 2009; Tao et al., 2022). However, a somewhat divergent trend was noted regarding the People-Things dimension, with both boys and girls displaying a tendency to reduce their gender-typical interests over time, resulting in smaller gender disparities as adolescence progresses. This trend also aligns with established literature (e.g., Gfrörer et al., 2021; Hoff et al., 2018; Hoff et al., 2022). Hence, while interests generally remain stable throughout adolescence, the observed changes suggest that there is still potential for career interventions. These interventions could involve targeted programs aimed at broadening adolescents' exposure to diverse career options and providing opportunities for hands-on exploration in various fields. Additionally, efforts to mitigate career gender stereotyping could play a crucial role in fostering more autonomous career choices. By promoting interest differentiation and challenging traditional gender norms, adolescents may feel empowered to explore a wider range of career paths and make decisions that align more closely with their individual strengths and aspirations. Such initiatives not only contribute to the development of a more diverse and skilled workforce but also enhance the overall well-being and fulfillment of young individuals as they navigate their career trajectories.

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## LIFELONG EMPLOYABILITY: DEVELOPING POWER TO ACT IN HIGHER EDUCATION STUDENTS

**Maria Cadilhe<sup>1,2</sup>, Ana I. Rodrigues<sup>1</sup>, Liliana Cunha<sup>1,2</sup>, & Marta Santos<sup>1,2</sup>**

<sup>1</sup>*Faculty of Psychology and Education Sciences, University of Porto (Portugal)*

<sup>2</sup>*Center for Psychology, Faculty of Psychology and Education Sciences, University of Porto (Portugal)*

### Abstract

Due to technological and demographic challenges and the increasing relevance of new work arrangements, job transitions are becoming more frequent (Bridgstock, 2009), impacting individuals' trajectories and their perceived turning points (Hareven & Masaoka, 1988). It is, therefore, crucial to create conditions in Higher Education (HE) to support all students in promoting autonomy and the power to act concerning their employability throughout their careers. Our aim is to understand how the participation in a structured programme on employability-related issues during HE pathways is reflected in the expansion of students' power to act (Clot, 2008), enabling them to, collectively or individually, gain a greater capability to act on what is important to them, concerning their career path. A b-learning training programme was developed with the aim of developing Bachelor's and Master's students' skills to promote their lifelong employability. By integrating this programme in their curricular plan, the promotion of students' reflection on employability is worked alongside their technical skills, while ensuring that the training programme could be part of the formative path of every student who wishes to do so, by considering the goal of reaching up to 500 students simultaneously. The implementation occurred between October 2021 and July 2023 and an impact questionnaire with a pre and post-test comparison (N=173) allowed us to understand that the training promoted their perception of competence, which facilitated the implementation of a series of actions, thus increasing their power to act. Likewise, the results showed that the students felt prepared to deal with contextual changes, empowering them to rethink the different situations and contexts in which they could act. An impact on collective influence was also found, as they felt more confident to support others, which seems to highlight the promotion of a sense of career community (Lee & Patel, 2019). This study highlights the contribution this programme has made to students' ability to reflect as well as their potential actions in relation to employability and career management to navigate in these uncertain contexts.

**Keywords:** *Lifelong employability, power to act, training, career community.*

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### 1. Introduction

In a context in which we are experiencing rapid and abrupt changes deriving, among other things, from the challenges posed by technological and demographic changes (Volkoff, 2011; Savickas et al., 2021), we are witnessing the spread of new forms of work organization and an increase in professional transitions (Bridgstock, 2009). These professional transitions have an impact on individuals' paths and their perceived bifurcation moments / turning points (Hareven & Masaoka, 1988; Hélarlot, 2009).

While some turning points can bring opportunities, some can "send life trajectories off track" (Hutchison, 2019, p. 355), exposing individuals to unemployment and social exclusion, with an impact on individual health and well-being. Thus, it is essential to support people through these transitions by broadening their choices and providing security to cope with change (International Labour Organization, 2019).

Higher Education (HE) students are typically associated with an intensified experience of labour market integration, and therefore increasing attention has been paid to the role of Higher Education Institutions in promoting students' employability (Bridgstock, 2009; Clarke, 2018). For this reason, it is crucial to create conditions in HE to support all students in developing employability and career management skills, by promoting a higher level of self-exploration and other proactive career behaviours (Okay-Somerville and Scholarios 2015).

Nowadays, the career development paradigm centres on the need to expand knowledge to make career related choices (Savickas, 2021). A development which highlights the importance of flexibility in

career decision-making and the conceptualization of careers as multidirectional projects, in alternative to the paradigm of a linear career throughout life (Baruch, 2004). It is assumed that these capacities will enable the individual to get out of difficult situations, take on change, regain control and deal with turning points (Hareven & Masaoka, 1988; Hélaridot, 2009) throughout their professional career. In this sense, there is a dimension of expansion of the individuals' power to act (Clot, 2008), which allows them to deal with and overcome some of the vulnerabilities to which they are subject, given the situation they find themselves in, although there is no release of responsibility from other agents (Lacomblez & Teiger, 2007).

The power to act represents a process by which people, together or separately, gain greater possibilities to act on what is important to them (Le Bossé, 2011). This construct was chosen as the object of this study because it represents the action that enables emancipation and, at the same time, avoids the risk of making empowerment a purely individual attribute, when in fact the exercise of power cannot be considered independent of the resources available in the context (Le Bossé et al., 2004).

Simultaneously, the demand to meet the growing needs of students and changes in the field have been challenging Higher Education, largely based on an individual guidance model, to develop new models (Young, 2016). In this regard, one framework that has gained popularity is based on career communities (Contomanolis et al., 2015) defined by Lee and Patel (2019) as groups of individuals who share similar career interests or aspirations, where one can receive direct or indirect customised benefits through the exchange of knowledge, expertise, and resources.

It is therefore fundamental to create conditions in Higher Education that support all students in promoting the power to act concerning their employability, as career transitions are becoming more frequent, impacting individual trajectories. On that account, we aim to understand how the inclusion of training modules on employability-related topics in Higher Education pathways is reflected in the expansion of the students' power to act (Clot, 2008), allowing them, collectively or individually, to gain a greater capability to act on what is important to them, in relation to their career path.

## 2. Method

A training programme was created with the objective of promoting the development of Bachelor's and Master's students' skills to foster their lifelong employability. The integration of this programme in the students' curricular plan aimed to allow the students' employability skills to be worked on alongside their technical skills.

This training programme was based on a blended-learning format, and it was guided by a learning roadmap composed of three stages. The first stage focused on the students' reflection on their past experiences, their skills, their future goals and the actions they need to put into practice to achieve them. This was accomplished through an initial workshop with the purpose of exploring current world trends that impact career paths. The second stage of the programme, called "employability toolkit", consisted of five modules based on content focusing on different employability-related topics, specifically: how to analyse the labour market; how to prepare a CV; how to write a cover letter; how to manage a digital footprint and network; and how to prepare for an interview. The third and final stage of the learning roadmap was based on the participation in various initiatives, such as listening to a podcast specially developed for this programme, which consisted of short conversations with Alumni about their professional paths. Students could also participate in visits to real work contexts, as well as any activities focused on professional paths and employability skills.

To measure the impact of participation in this training programme, a quantitative study was conducted. This study involved pre and post-test data collections based on the application of a questionnaire specifically developed for this purpose. This decision was made due to the difficulty in identifying an adequate scale that measured the dimensions under analysis, which confirms the differentiating scope of this study.

The data collection process involved the application of the aforementioned questionnaire before the students started the training programme and after its completion. The response to this questionnaire required an informed consent from each participant, approved by the Ethics Committee of the Higher Education Institution. Data collection took place between October 2021 and July 2023. After the exclusion of incomplete responses, 173 complete responses were considered for analysis.

The questionnaire included student characterization items, to collect data on gender, age group, year of study and field of study. Of the 173 participants, 47% were female and 52% were male. In terms of age, 52% were under 20 years old, 46% were between 21 and 25 years old, and less than 2% were between 26 and 35 years old. 82% were Bachelor students and 17% were Master students. Regarding the field of study, 20% of the participants studied Industrial Engineering and Management; 20% Mechanical Engineering; 13% Informatics and Computing Engineering; 12% Electrical and Computer Engineering;

10% Civil Engineering; 9% Bioengineering; and the remaining 16% of the participants studied other fields of engineering (less than 5% each).

The questionnaire consisted of five groups of items. Considering the scope of this study, we will focus on nine specific items relating to students' perception of their ability to identify past experiences and future goals, their perception of power to act regarding their employability and their ability and availability to support others in developing employability skills. Seven items were assessed with the use of a five-point Likert scale, where one meant "totally disagree" and five meant "totally agree": "I feel capable of envisioning a potential professional path I would like to explore"; "I feel capable of outlining an action plan to reach my goals"; "I feel capable of supporting others in building potential professional paths"; "I consider it important for my future to focus on the theme of lifelong employability"; "I feel prepared to handle changes that involve redesigning my future professional plans"; "I feel prepared to create alternatives in the face of the impossibility of achieving what I have designed"; "I am available to use some of my free time to support others in building their employability tools (e.g., CV, cover letter, digital profile)". Two items were assessed with the use of a five-point Likert scale, where one meant "not confident" and five meant "extremely confident": "Redesign your academic and professional goals based on new information related to you or your context"; "Support others in building their own employability tools (e.g., CV, cover letter, digital profile)".

The data were processed using IBM SPSS Statistics 27, where descriptive, frequency and group distribution analyses were performed. A Wilcoxon signed-rank test was used to analyse whether there were significant differences on each item between the pre-and post-test, instead of a paired t-test, as the Kolmogorov-Smirnov test used to assess the normality of the variables indicated that the majority of the items did not follow a normal distribution ( $D(173) = 0.19$  to  $0.40$ ,  $p < .001$ ).

### 3. Results

The results in Table 1 reveal significant differences in most of the items concerning students' sense of ability regarding future academic and professional issues, with a strong, statistically significant difference observed in envisioning potential professional paths and outlining action plans to reach achieve one's goals. A smaller but still significant and moderate effect was found in supporting others in building potential professional paths, before the intervention. Regarding their confidence, a strong, statistically significant difference was similarly observed in the items related to the possibility of having to adapt their academic and professional goals, either because of new inputs about themselves or their contexts, as well as the possibility of supporting others with employability tools.

Lastly, statistically significant differences were identified in the importance of focusing on lifelong employability and, consistent with the previous conclusions, in the availability to support others with their employability tools and the readiness to adapt professional plans and actions when faced with unforeseen changes or constraints in achieving some of their plans.

Table 1. Results from the applied impact questionnaire: pre-test and post-test.

|   | Pre-test (N=173) |           | Post-test (N=173) |           | Wilcoxon test       |
|---|------------------|-----------|-------------------|-----------|---------------------|
|   | Mean             | Std. Dev. | Mean              | Std. Dev. |                     |
| <b>Take a moment to think about your academic and professional future, and rate your agreement with each of the following statements...</b> |                  |           |                   |           |                     |
| I feel capable of envisioning a potential professional path I would like to explore.  | 3.18             | .92       | 4.02              | .89       | Z = -8.00, p < .001 |
| I feel capable of outlining an action plan to reach my goals.   | 3.06             | .83       | 3.86              | .81       | Z = -7.96, p < .001 |
| I feel capable of supporting others in building potential professional paths.   | 3.11             | 1.02      | 3.68              | .95       | Z = -5.82, p < .001 |
| <b>Assess your confidence level to...</b>   |                  |           |                   |           |                     |
| Redesign your academic and professional goals based on new information related to you or your context.                                      | 3.14             | .78       | 3.72              | .85       | Z = -6.81, p < .001 |
| Support others in building their own employability tools (e.g., CV, cover letter, digital profile).   | 2.66             | .99       | 3.61              | .94       | Z = -8.08, p < .001 |
| <b>Rate your agreement with each of the following statements...</b>   |                  |           |                   |           |                     |
| I consider it important for my future to focus on the theme of lifelong employability.  | 4.09             | .69       | 4.35              | .67       | Z = -4.08, p < .001 |
| I feel prepared to handle changes that involve redesigning my future professional plans.  | 3.35             | .78       | 3.87              | .72       | Z = -6.37, p < .001 |

|   |      |     |      |     |                        |
|---|------|-----|------|-----|------------------------|
| I feel prepared to create alternatives in the face of the impossibility of achieving what I have designed.                                    | 3.52 | .80 | 3.93 | .72 | Z = -5.34,<br>p < .001 |
| I am available to use some of my free time to support others in building their employability tools (e.g., CV, cover letter, digital profile). | 3.54 | .89 | 3.87 | .83 | Z = -4.79,<br>p < .001 |

#### 4. Discussion

Our research shed light on the relevance of the role of Higher Education in the development of employability-related topics through the expansion of students' power to act (Clot, 2008), allowing them to, collectively or individually, gain greater capacity to act on what is important to them, concerning their career path.

After the training programme, students felt more capable of not only envisioning a potential professional path they would like to explore but also of outlining an action plan to achieve their goals, highlighting the importance of the training programme on the students' current perceptions of competence and power to act concerning their professional paths. The analysed results are consonant with recent employability models (Pool et al., 2007), as the programme promotes self-efficacy beliefs in its students, by making use of learned career-related competencies. It is worth noting that the design of action plans within the scope of the programme is based on proactive career exploration, characterised by a goal-oriented mindset, which according to Savickas' career construction theory (2021) is an important practice to continuously construct and reconstruct the students' career paths.

Another relevant outcome of the research was that after the programme, students felt more prepared to deal with contextual changes by redesigning their academic and professional goals based on new information related to them or their context. They also felt more prepared to deal with changes that involved redesigning their future professional plans, and to create alternatives when faced with the impossibility of achieving what they had designed, and considered it important for their future to work on the issue of lifelong employability. The results showed that training empowers them to rethink the different situations and contexts in which they can act, when facing unforeseen constraints, allowing them to deal with turning points (Hareven & Masaoka, 1988; Hélaridot, 2009) throughout their professional careers, enabling them to manage and overcome some of the vulnerabilities to which they are exposed.

The third and final contribution derived from the results is the impact of the programme on students' sense of capability, confidence and willingness to support others to construct their professional paths, for example, by feeling able to support others in building potential professional paths, supporting others in building their own employability tools, and being available to use some of their free time to support others in building their employability tools. This suggests that the programme not only prepares students to build their professional paths but also to aid others in doing the same, leading to a multiplier effect as they actively share what they have learned during the programme. These findings are consistent with existing literature that frames the learning process within a social context, moving beyond exclusively individual learning (Lave & Wenger, 1991). Additionally, we can identify the emergence of a career community (Lee & Patel, 2019) as one of the outcomes of the programme, as students recognise the value of sharing knowledge of interest with their peers, surpassing individual reflections and learnings.

Nonetheless, the career community fostered by this programme is worthy of further study, particularly in terms of bidirectional support between peers. Conducting a longitudinal study to follow students throughout their careers would also be relevant.

#### 5. Conclusion

In conclusion, Higher Education students can adapt to current and future contextual challenges, if they are provided with useful tools and structured learning aimed at developing their reflection capacity and their power to act on their career management. In this programme, students fostered strategies for their lifelong employability and increased their confidence in their value and ability to support others, thus galvanising a career community. There is no question that HE Institutions should actively work on their students' preparation and capacity to design and re-design their paths, as career development begins before students enter the job market - it is built throughout the individual's life (Savickas, 2021) and embedded in social interactions replete full of diverse opportunities (Savickas, 2021; Coimbra et al., 1994).

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## QUALITATIVE STUDY OF BODY IMAGE AND CULTURE AMONG IRANIAN-AMERICANS

**Sepehr Khosravi<sup>1</sup>, & Amara Miller<sup>2</sup>**

<sup>1</sup>*Department of Educational Psychology, California State University (USA)*

<sup>2</sup>*Department of Sociology, California State University (USA)*

### Abstract

Body image is the perception of individuals of their own body and can be influenced by many factors such as media, culture, and social pressures. Body image in Iranian culture is understudied in scientific literature even though there is an increase of body image dissatisfaction in Middle Eastern communities. Body image dissatisfaction is crucial because it can usher in psychological or physical health problems for individuals. This research studies the influences that impact Iranian-Americans' body image. We ask the question in this study, "What factors influence how larger bodied Iranian-Americans feel about their bodies?" The primary data collection strategies include semi-structured individual interviews with fat Iranian-Americans dealing with fatphobia, negative body image, and exclusion in their society, culture, and the media they consume. Author Sepehr Khosravi has also included an autoethnographic component that incorporates his own experiences as a fat Iranian-American man. Our findings indicate that social expectations around body size common in Iranian culture and expressed by family members and friends can have negative impacts on the mental and physical health of Iranian Americans. At the same time, given their unique position as Iranian-Americans in the diaspora, Western norms and media contexts can provide individuals alternative perspectives, even while still characterized by potential encounters with racism and sizeism.

**Keywords:** *Body image, Iranian-Americans, Iranian culture, fatphobia.*

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### 1. Introduction / literature review

Body image is the perception of individuals of their own body and can be influenced by many factors such as media, culture, and social pressures. Body image in Iranian culture is under-studied in scientific literature even though there is an increase of body image dissatisfaction in Middle Eastern communities. For example, new findings on Iranian women have demonstrated that using Instagram and appearance comparison with images of celebrities, relatives, and fitspiration images had a significant correlation with the internalization of beauty ideals, drive for thinness, and body dissatisfaction (Rafati et al., 2021). Body image dissatisfaction is crucial because it can usher in psychological or physical health problems for individuals (Shoraka et al., 2019).

Living in a fat body can have detrimental effects on the person's health because of the lack of support, inclusivity, and belongingness in their designated societies. The basic needs of fat individuals are not met in our society (Owen, 2012). Large body individuals are constantly reminded of living in a thin-centric world, faced with experiences like not fitting in bus seats or subway seats to not being able to use blood pressure cuffs and MRIs. Weight stigma may result in feelings of social disconnection, and can cause individuals to feel rejection and a lack of acceptance and belonging from others in interpersonal interactions (Blodorn et al., 2016). Young people with higher weights experience weight stigma from close friends and family members, individuals that are expected to provide social safety and support (Neumark-Sztainer et al., 2002; Puhl & Brownell, 2006). Another important concern of weight stigma is that children have a higher risk of experiencing bullying because of their weight (Puhl et al, 2011; van Geel et. al., 2014). Using body mass index in schools can result in greater body dissatisfaction (Ikeda et al., 2006). Health professionals need to step away from the weight-centered health paradigm and move beyond weight, which has done an insufficient job treating health issues and has shown to be difficult on individuals (Baum, 2016).

While there is little support that diets lead to health benefits or weight loss, doctors still prescribe it as a basic medical practice (Mann et al., 2007). There needs to be an emphasis on tackling the socio-environmental factors that result in health equity for everyone regardless of their size. An alternative

route can be the Health At Every Size (HAES) approach which focuses on wellbeing and health instead of labeling people according to their BMI (O'Hara & Taylor, 2018). Throughout the years, many studies have supported the HAES approach by showing improvement in psychological, behavioral, and physiological factors (Bacon & Aphramor, 2011; Clifford et al., 2015; Mensinger et al., 2016). Other researchers have looked into how the HAES approach curricula taught at school levels ameliorate body image, self esteem, and eating attitudes in adolescents (Kater et al., 2002; Niide et al., 2013). Looking at university students, anti-fat attitudes, body esteem, intuitive eating, and dieting behaviors improved (Humphrey et al., 2015). Additionally, HAES curricula bettered attitudes, beliefs, knowledge, and skills in educators (Shelley et al., 2010). It is evident that HAES approaches have a positive impact on the body image of young women (O'Hara et. al, 2021).

Certain populations may be more likely to experience body image dissatisfaction as well as sizeism. Throughout history, Black, Indigenous, and people of color populations have been more likely to experience inequalities like sizeism, racism, sexism, and colonialism. These systems of oppression also resulted in cultural changes, shaping social norms regarding what type of bodies were considered beautiful or "normal," with elite groups using physical features—including body size—as a form of distinction. For example, when Spanish colonizers came into contact with indigenous people in the Americas, they sought to distinguish themselves physically, claiming their bodies looked different because of the food they consumed (Harrison, 2019). At the turn of the 19th century, white people similarly distinguished themselves from people of color by claiming it was God's work to become slender while features associated with being Black were considered immoral (Strings, 2019).

Most research studying the impacts of race on body image focuses on Black populations, however, it is important to explore how other racial and ethnic groups might be impacted differently. This research project studies the influences that impact Iranian-Americans' body image. Little research has been done on the experiences of fat Iranian-Americans and how the influences of Iranian culture and Western media affects their body image. We ask the question in this study, "What factors influence how larger bodied Iranian-Americans feel about their bodies?"

## **2. Methods**

The purpose of this qualitative, ethnographic study is to examine fat Iranian-Americans experiences and how their culture and family affects their body image. The primary data collection strategies include semi-structured interviews about the experiences of fat Iranian-Americans and autoethnographic methods. The interviews asked participants about dealing with fatphobia, negative body image, and exclusion in their social networks, broader society, and both Iranian and Western cultures including media. Participants were recruited through convenience and snowball sampling through the researchers' personal networks and social media, especially pages and online communities for Iranian Americans. Participants were interviewed for around 1 hour through Zoom. Currently nine participants have been interviewed so far, including five women and four men. The interview data was supplemented with autoethnographic methods. The analysis of the qualitative data was done using coding in the program Dedoose to capture shared themes.

## **3. Results**

Many Iranian-Americans indicated that they don't get messages from their families, media, and communities that they are enough regardless of their size. Numerous people shared that pursuing thinness and health has become a moral obligation for them, and that the measures they take to achieve it have gone beyond expectations. Below, we describe several of the key themes that arose during data analysis.

### **3.1. Family**

Comments on participants' bodies coming from family members generated the most difficulty for them. The difficulty was ingrained in how they had to justify their bodies whether that may be their size, eating, and/or exercise. For some, they couldn't respond and the pain of unworthiness stuck with them while they were forced to accept the Iranian cultural norm of "commenting on each other's bodies." Iranian culture doesn't allow disrespect to others, especially elders, which makes it difficult to stand up for oneself and push back against body shaming. This is because comments about the body are a normal component of the culture, tied to the constant pressure of not disrespecting your family members. Contrary to Western culture's individualistic power in standing up for oneself even against members of the family like parents, Middle-Eastern's collectivist cultural mentality doesn't condone this, making these situations particularly painful and emotionally complex for participants.

One 35-year-old female participant, Darya, who was born in Iran and now is pursuing her PhD in Orlando explains a bad memory from one of her cousins back in Tehran. She hadn't seen her cousin for three years until a New Year's party, after an accident that had her gaining weight. Darya explains, "instead of saying hi and how are you doing, she tells me, 'Darya you're exploding!'" Darya mentions that she didn't defend herself because she didn't want her mom to be upset. Darya did respond to her cousin by justifying her body, "I said, 'yeah, I'm gaining weight but I will be okay soon.'" After the New Year's party, Darya was very upset and started arguing with her mom, "that because of you, I didn't answer her and next time, I'm going to throw her out of my home and I'm not going to think about you anymore." Darya mentions that her mom had the same fatphobic mentality and was happy to see her cousin make that comment because she was thinking the same thing. Darya says, "I got very angry and upset, I remember. I even cried because of my anger. You know when I get angry, I start crying."

One of the male participants, Ali, a restaurateur who was born and raised in California after his parents immigrated to the United States, talks about his experiences regarding comments coming from his family because of his body. Ali remembers that growing up, his dad's mom made comments regarding his body size. He finds it funny how deeply rooted comments towards someone's body are in Iranian culture. He talks about how his grandma would always say to him as a young kid, "'this boy is fat,' 'you're giving too much food to this boy!,' 'don't give food to him.'" After these incidents, Ali's mother would take him to the side to say "I'm sorry that you have to deal with that." At that young age, Ali justified his eating habit saying, "well, I get it like I do eat a lot, mom like it's okay, I don't care, like it's grandma, it's okay, she's old, it's okay." Later, Ali goes on to talk about how his family back in Iran think that he is the largest. He tells a story about how his cousins gained weight and the whole family talked about it: "It wouldn't stop, my perspective was, leave them alone. Why do you guys care so much? You guys are going to give them an aneurysm." One of Ali's cousins in Iran was on a diet consisting of only pomegranate juice and nuts for three years. Ali says, "look at what you did to him, this dude doesn't even know what ghorme sabzi (vegetable Iranian stew) tastes like, you're killing the kid." As soon as his cousin started a regular diet again, Ali says that "he blew up 10 times the size because he didn't have the nutrients or his body wasn't used to that." Ali mentions that what happened to his cousin is not healthy.

### 3.2. Friends

Participants' comparison to their friends' bodies has become a component of everyday life whether consciously or unconsciously. The constant pressure of looking perfect physically drives participants to see who has the best body in their friends' group which follows the self-critical process of what does my body miss that they have. Participants' questioning their own beauty and worthiness because of their size affects their body image negatively.

A 23-year-old female participant, Yasmin, who was born and raised in Arizona speaks of the time that she compares her body to her best friend. Her friend is a dancer and has an amazing body that Yasmin admires. Whenever Yasmin takes a photo with her friend at events, she says "I definitely feel very self-conscious around her because she's tall, good legs, good stomach, like just an overall amazing body." Yasmin not only compares her body to this friend but also all her other friends that are athletic, skinny, and have amazing bodies. Later on, Yasmin goes on to talk about how her friend is dealing with an eating disorder and has lost excessive weight due to it. She explains, "When you have a friend who has an eating disorder and has body dysmorphia and feels that she's very big, even though she is not. It makes me feel even bigger than I already am." Gita, one of the female participants also referenced before, tells us about a time in 2021 when she and one of her best friends went to Dubai for Gita to get her VISA to come to the United States. Gita says that her best friend never comments on her body and that she's kind. On the trip, Gita and her friend went to a buffet everyday, eating a lot together. Gita says that she was eating a lot because it was one of her binge eating cycles. She kept comparing her eating behavior to her friends asking, "why doesn't she gain any weight?, and why is she so beautiful, and I am not? She mentions that she definitely compares herself to her friends, especially since they are all skinny. Later on, Gita mentions that she photoshops her body in pictures on social media. "I always make myself a little bit more skinny because I don't want to stand with my skinny friends and look larger than them."

### 3.3. American / Iranian cultural differences in sizeism

The cultural differences of Iranian and American outlook on body image are very different but similar in the foundation. Americans tend to cover their true thoughts about each other's bodies compared to Iranians directly commenting on each other's bodies "helping each other lose weight." In each culture, thinness is more valued and sizeism is still prevalent, however it can often be more overt and explicit in Iranian cultural contexts. Given their unique position as Iranian Americans in the diaspora, Western norms and media contexts can provide individuals alternative perspectives, even while they still experience potential encounters with racism and sizeism in the US.



Samaneh, one of the female participants, talks about an experience she had when she went to Iran. She says, “I didn’t have a problem with the hijab even though I know it was forced by the government, but it’s just sick how people still comment on your body even though you are covered with a scarf and cardigan, I think the mindset is just sick.” Samaneh then compares America to Iran, “when you’re here in the States, you can be wearing a tank top and shorts but no one will look at you but over there, even with the full hijab, they still can see through your clothing.” Later in the interview, Samaneh explains the shock of cultural differences between how large bodies are viewed by Americans compared to Iranians. She describes, “On the Iranian side, you’re not accepted because of your large body and even if you diet and do work to lose weight, they still comment about your size.” She goes on to explain, “when you come to my American friends or people who grew up here, they’re like, oh my God, you’re beautiful, you’re so nice. I’m like, am I nice? Am I a good person or like do I not fit the category y’all measure to? Do you see me as a human being?” It can be difficult for Samaneh to cross cultures which leaves her confused and shocked that one side sees her as fat and unworthy, while the other side doesn’t see her as fat. The Iranian culture is engrained stronger among Samaneh as she feels unconfident because of her body. She feels that this body dissatisfaction plays a role in her social life with American girls back in high school, “all the girls were telling me, ‘oh my God, you’re so beautiful,’ and I immediately responded, ‘oh, but I’m fat.’ The girls didn’t mention anything about my size but because I was so used to the Iranian culture, I assumed that these American girls would be the same saying things like, ‘oh, you’re kind, but you’re fat, you better lose some weight.’ I would just fill out the blanks of what I thought the girls would want to say about my body.”

Ali, one of the male participants, explains how contradictory Iranian culture can be when it comes to sizeism. As he explains, “I think it is hilarious that we’re taught in the Iranian culture how to be nothing but respectful and have nothing but good vibes, good energy, and always be those things. Being hospitable, all of the above of being a good true person but it’s contradicting to me when the first view of someone in the Iranian culture is their looks, their thickness, their skinny-ness, as if people making these judgements don’t have their own issues.” Ali makes a comparison from Iran to America, “In the States, we don’t do that shit really like we do, but I haven’t seen it often, maybe once or twice in my life.” Ali feels that American culture is more empathetic to larger individuals, “Americans don’t say, ‘whoa, this fool is fat’ unless they’re trying to be hurtful.” In contrast, in Iranian culture, he explains, “‘whoa you’re fat, you need to fix it,’ as if they’re trying to help you.”

### **3.4. Impacts on individuals’ mental health & well-being**

The participants felt the disconnect from their society and the pressure that they are not “enough” unless they changed themselves physically. The constant pressure to conform to “the right body” makes life more difficult. Participants found themselves leaving things they want to do and pursue now to a future date when they do become skinny. Being invited to places that required them to show their bodies created the most discomfort. The measures they take to achieve the “ideal body” goes beyond negative body image but the reality of spending excessive amounts of money to reach their body goals.

Comments regarding the participants’ bodies sometimes led to physical and emotional problems. Talking down to themselves about their weight was a contributing factor to body dissatisfaction. Mehdi, one of the male participants mentions how he has psychological issues around his body size. He says, “I have some psychological problems, I always tell myself that I’m fat and tall until I accept myself for being fat. But, I don’t accept myself for not doing something about it when it is in my power to not be fat. I wasn’t for two to three years doing anything about my weight because I was not going to the gym, taking antidepressants, and dealing with other issues.” Yasmin, a female participant, explains the difficulty she experiences with her body image. She’s been uncomfortable about her body throughout life, like swimming with her friends who have “amazing bodies and they’re also beautiful so it’s definitely made me very self conscious about my body.”

The desire to change their body can sometimes lead individuals to seek out surgical procedures. Samaneh, another female participant, talks about her experiences after the gastric bypass surgery she had done. “Now that I’m losing weight (because of my surgery), my worry is that my skin will fall down. It’s not good. It’s not okay because I have to do another surgery to fix that afterwards.” One of the male participants, Mehdi, talks about how he will travel to Iran to do cosmetic surgery. He explains, “I literally might go do liposuction for my love handles in Iran. I’ve lost 35 pounds, I’ve lost 80 pounds before, I’ve lost it all before. The only place that never ever changes in my hourglass figure is my love handles.” Gita talks about the isolation she felt when most of her family members were skinny, dieting, and doing cosmetic surgeries. She says, “I always feel different because I refuse to do any beauty procedures like nose jobs, something that I always refused to do that almost all girls in my family did. I have also refused to do any hair removal.”

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## COPING STRATEGIES AS MEDIATORS OF THE RELATIONSHIP BETWEEN HIGH SENSORY PROCESSING SENSITIVITY AND COMPASSION FATIGUE

**Jimmy Bordarie<sup>1</sup>, & Caroline Mourtialon<sup>2</sup>**

<sup>1</sup>QUALIPSY (UR1901), University of Tours (France)

<sup>2</sup>APHP Hôpital Sainte-Périne-Chardon Lagache-Rossini – CMPP, Boulogne-Billancourt (France)

### Abstract

Highly sensitive people have stronger reactions to environmental stimuli (Aron & Aron, 1997) which can be experienced as a source of stress. They are more vulnerable to burnout (Bordarie & Mourtialon, 2023) and compassion fatigue (Pérez-Chacón et al., 2021), as are healthcare workers, a category of professionals particularly at risk. However, in response to anxiety-provoking situations, professionals can implement coping strategies to (attempt to) reduce the distress they cause. Coping can be defined as “evolving cognitive and behavioral efforts to manage specific external and internal demands that are perceived to tax or exceed the person's resources” (Lazarus & Folkman, 1984, p. 141). Problem-focused coping promotes greater satisfaction and can reduce burnout (Meyerson et al., 2020). Conversely, emotion-focused coping is correlated with higher levels of burnout (Gangloff & Malleh, 2017). The aim here is to study the relationship between sensory processing sensitivity, compassion fatigue and coping strategies among speech-language therapists, who are rarely the subject of scientific studies (Brito-Marcelino, 2020). The study involved interviewing 602 female speech-language therapists. They answered a questionnaire composed of French versions of three scales: the Highly Sensitive Person Scale (Bordarie et al., 2022), the Professional Quality of Life Scale (Stamm, 2009) and the Ways of Coping Checklist Revised (Cousson-Gélie et al., 1996). Linear regressions and a mediation analysis were performed with JASP (version 0.17.1). High sensory processing sensitivity increased compassion fatigue ( $p < .001$ ). Emotion-focused strategy increased it as well ( $p < .001$ ). On the contrary, problem-focused coping strategy reduced compassion fatigue ( $p \leq .001$ ). The mediation analysis revealed the influence of sensory processing sensitivity on compassion fatigue disappeared when using problem-focused or social support-focused strategies as mediators but remained significant when using emotion-focused strategy as mediator ( $p < .001$ ). This study is in line with the literature stating that high sensory processing sensitivity is a risk factor of compassion fatigue, as well as emotion-focused coping. More specifically, the relation between sensory processing sensitivity and compassion fatigue can be explained by coping strategies. Highly sensitive speech-language therapists using problem-focused strategy are less likely to express compassion fatigue. There are some possible applications, like to train highly sensitive therapists to develop this kind of strategy since it protects from burnout or compassion fatigue.

**Keywords:** *Sensory processing sensitivity, compassion fatigue, coping strategies, vulnerability, speech-language therapists.*

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### 1. Introduction

High sensory processing sensitivity (HSPS) (Aron & Aron, 1997) concerns around 30% of the population (Lionetti et al., 2018). Highly sensitive individuals react more intensely than others to internal and external stimuli (Gere et al., 2009). It generally implies negative effects on mental health (e.g., Yano & Oishi, 2018). Sensory processing sensitivity (SPS) is a multidimensional construct, composed of three components (i.e., ease of excitation [EOE], low sensory threshold [LST], aesthetic sensitivity [AES] [Smolewska et al., 2006]) or four (to the previous ones is added controlled avoidance of nuisances, [Bordarie et al., 2022]). Each component then plays a different role, sometimes protective, sometimes vulnerabilising (e.g., Bordarie et al., 2021). At work, HSPS usually appears to be a vulnerability factor, favoring burnout (e.g., Pérez-Chacón et al., 2021), with consequences upon other variables such as satisfaction and compassion fatigue among carers (Meyerson et al., 2020).

Compassion satisfaction (CS) and compassion fatigue (CF) are real issues for healthcare professionals. CS refers to the pleasure experienced when helping others who are exposed to traumatic events and may be in distress (Stamm, 2009). It is essential to the well-being of carers and the quality of their care (García-Iglesias et al., 2020). Conversely, CF refers to a state of reduced capacity for compassion, resulting from exhaustion caused by contact with the suffering of others (Alharbi, Jackson & Usher, 2019). It corresponds to the psychological cost to the carer of providing therapeutic care, known as the “cost of caring” (Figley, 2002). It represents a negative aspect of the quality of professional life and is made up of two dimensions: burnout on the one hand, and secondary trauma on the other, which refers to the negative feelings induced by fear and work-related trauma.

In anxiety-provoking situations, professionals may experience a discrepancy between the stressful event and their perceptions of their own ability to cope with it (Gintrac, 2011). Stress can therefore be defined as a physiological and emotional reaction to a situation that exceeds the individual's personal resources (Maslach et al., 1997). In response, the individual may implement coping strategies to try to control the problematic situation and/or reduce the distress it causes. There are three categories depending on whether they are problem-focused, emotion-focused, or social support-focused. Their effectiveness depends, for example, on the duration of the stressful period and the controllability of the situation (Lazarus & Folkman, 1984). For instance, nurses experience greater job satisfaction when they mainly use problem-solving strategies (Welbourne et al., 2007). Social support is just as effective (Delicourt et al., 2013). Conversely, emotion-focused strategies are positively correlated with levels of burnout (Shin et al., 2014).

## 2. Objectives

We focus here on the relation between HSPS, coping strategies and compassion fatigue among speech-language therapists (SLTs). This population is exposed to burnout (Bordarie & Mourtialon, 2023), but particularly neglected in the literature (Brito-Marcelino, 2020). This study has two objectives:

- To investigate the influence of HSPS on coping strategies and CF
- To study the mediating role of coping strategies in the relationship between HSPS and CF.

## 3. Methods

### 3.1. Sample

Our sample consisted of 602 French-speaking SLTs, all females. They were divided into four age categories: 20-29 years old (N=137; 22,76%), 30-39 years old (N=205; 34,05%), 40-49 years old (N=155; 25,75%), 50 years old and over (N=105; 17,44%).

### 3.2. Measures

The questionnaire consisted of 74 items, excluding socio-demographic questions.

Sensory processing sensitivity was assessed using the HSPS-FR (Bordarie et al., 2022, adapted from Aron & Aron, 1997), a self-report questionnaire measuring four components). Answers modalities were given on a 7-point Likert scale ranging from “1=strongly disagree” to “7=strongly agree”. The higher the score, the greater the sensitivity.

Coping strategies were measured using the French version of the Ways of Coping Checklist Revised (Cousson-Gélie et al., 1996). The scale focuses on three strategies: problem (PB), emotion (EM) and social support (SS). During the test, participants were asked to think about a recent event that had generated stress. On a 4-point Likert scale, the modalities were: no, rather no, rather yes, yes.

Compassion fatigue (CF) was assessed using the two subscales (burnout [CF-BO] and secondary traumatic stress [CF-STTS]) of ProQOL 5th version (Stamm, 2009). Answers modalities were given on a 5-point Likert scale ranging from “1=never” to “5=very often”. According to the ProQOL manual, on these subscales, a score strictly below 23 probably reflects positive feelings about one's ability to be effective at work, and a score strictly above 41 could reflect a potential problem at work.

### 3.3. Procedure

The questionnaire was created on a Google Form and distributed via social networks, on several SLTs Facebook pages and on a SLTs welfare page. It was also relayed through private SLTs networks and by word of mouth. Participants were invited to respond online and were informed that their responses were anonymous and confidential. Prior to completing the questionnaire, participants were informed of the objectives of the study and were explicitly asked for their consent to continue the study. To access the questionnaire, participants had to click on “accept and continue” after having read the consent form and

consent to participate. Responses to the Google Form were opened between 20 December 2021 and 28 February 2022. The estimated completion time was approximately 10-15 minutes.

### 3.4. Analyses

Statistical analyses of the questionnaire were then carried out using JASP software (version 0.17.1., JASP Team, 2023). First, descriptive analyses were performed for CF and HSPS. Second, we used Pearson’s correlations to analyze the existence of a link between the scales. Third, linear regressions and a mediation analysis were performed to measure the effects of the variables on CF.

## 4. Results

### 4.1. Descriptive results and correlations

CF-BO scores came from 11 to 45 and mean score was 27.77 (SD=6.42) and CF-STS came from 10 to 46 and mean score was 26.18 (SD=6.71). Regarding the SPS scores, the minimum score was 63 and the maximum score was 186. Mean score was 134.329 (SD=26.95). Repartition of SPS is given according to Lionetti et al. (2018) (Table 1). Compassion fatigue scores (BO and STS) and HSPS scores were correlated with all other variables and subscales ( $p < .001$ ), excepted on one hand AES and CF-BO and on the other hand SS and CF-STS which were not correlated.

Table 1. Repartition into three groups (low, average and high scores) according on the scores on compassion fatigue scale and sensory processing sensitivity scale.

|                | Compassion fatigue [CF-BO] | Compassion fatigue [CF-STS] | Sensory processing sensitivity |
|----------------|----------------------------|-----------------------------|--------------------------------|
| Low scores     | 22.59%                     | 33.06%                      | 22.92%                         |
| Average scores | 77.08%                     | 65.45%                      | 26.58%                         |
| High scores    | 0.33%                      | 1.49%                       | 50.50%                         |

### 4.2. Mediation analysis

The mediation analysis (Table 2) confirmed two positive direct effects of HSPS on CF-BO and CF-STS ( $p < .001$ ), i.e., the higher the sensitivity, the greater the compassion fatigue.

Table 2. Results of mediation analysis of coping strategies between HSPS and both CF-BO and CF-STS.

|                           | Estimate               | Std. Error             | z value       | p               | 95% confidence interval |                        |
|---------------------------|------------------------|------------------------|---------------|-----------------|-------------------------|------------------------|
|                           |                        |                        |               |                 | Lower                   | Upper                  |
| Direct effects            |                        |                        |               |                 |                         |                        |
| <b>HSPS → CF-BO</b>       | <b>.051</b>            | <b>.009</b>            | <b>5.751</b>  | <b>&lt;.001</b> | <b>.033</b>             | <b>.068</b>            |
| <b>HSPS → CF-STS</b>      | <b>.122</b>            | <b>.009</b>            | <b>14.256</b> | <b>&lt;.001</b> | <b>.105</b>             | <b>.138</b>            |
| Indirect effects          |                        |                        |               |                 |                         |                        |
| HSPS → PB → CF-BO         | .001                   | .003                   | 0.434         | .665            | -.004                   | .007                   |
| <b>HSPS → EM → CF-BO</b>  | <b>.028</b>            | <b>.004</b>            | <b>6.395</b>  | <b>&lt;.001</b> | <b>.020</b>             | <b>.037</b>            |
| HSPS → SS → CF-BO         | -.002                  | .001                   | -1.569        | .117            | -.004                   | 4.736×10 <sup>-4</sup> |
| HSPS → PB → CF-STS        | 4.836×10 <sup>-4</sup> | .001                   | 0.430         | .667            | -.002                   | .003                   |
| <b>HSPS → EM → CF-STS</b> | <b>.023</b>            | <b>.004</b>            | <b>5.689</b>  | <b>&lt;.001</b> | <b>.015</b>             | <b>.031</b>            |
| HSPS → SS → CF-STS        | 6.285×10 <sup>-4</sup> | 7.354×10 <sup>-4</sup> | 0.855         | .393            | -8.128×10 <sup>-4</sup> | .002                   |
| Total effects             |                        |                        |               |                 |                         |                        |
| <b>HSPS → CF-BO</b>       | <b>.078</b>            | <b>.009</b>            | <b>8.527</b>  | <b>&lt;.001</b> | <b>.060</b>             | <b>.096</b>            |
| <b>HSPS → CF-STS</b>      | <b>.146</b>            | <b>.008</b>            | <b>17.745</b> | <b>&lt;.001</b> | <b>.130</b>             | <b>.162</b>            |
| Total indirect effects    |                        |                        |               |                 |                         |                        |
| <b>HSPS → CF-BO</b>       | <b>.028</b>            | <b>.006</b>            | <b>4.908</b>  | <b>&lt;.001</b> | <b>.017</b>             | <b>.039</b>            |
| <b>HSPS → CF-STS</b>      | <b>.024</b>            | <b>.004</b>            | <b>5.684</b>  | <b>&lt;.001</b> | <b>.016</b>             | <b>.033</b>            |

In both cases, these effects remained significant after the introduction of the mediator “emotion-focused strategy” ( $p < .001$ ). However, they disappeared after the introduction of the

“problem-focused strategy” and the “social support-focused strategy” as mediators. In other words, these strategies (PB and SS) reduced the effect of HSPS on CF.

## 5. Discussion and limitations

This study looked at HSPS and compassion fatigue among speech-language therapists (SLTs). First, we investigated the prevalence of HSPS and compassion fatigue (CF) among SLTs. More than 50% of them reported HSPS which is higher than in the general population (Lionetti et al., 2018). And more than 77% of them reported a moderate to high CF-BO score and they were almost 67% for CF-STS. These scores confirm the results obtained with other populations. For instance, more than 80% of physicians and 66% of cancer nurses reported a moderate to high CF score (Zhang et al., 2022).

Secondly, the results highlighted the positive influence of sensory processing sensitivity on CF scores. Thus, the higher the level of sensitivity, the more likely SLTs were to develop CF (either on BO and STS subscales), confirming the vulnerabilising effect of HSPS, as for anxiety and depression (Liss et al., 2008) and burnout (Pérez-Chacón et al., 2021).

Thirdly, the negative effects of HSPS are enhanced when SLTs implement an emotion-focused strategy, resulting in higher levels of CF. This strategy acts as a vulnerability factor, like for nurse burnout (Shin et al., 2014). Conversely, these negative effects disappear when highly sensitive SLTs use a problem-focused strategy or a social support-focused strategy. In other words, highly sensitive SLTs may protect themselves by using these coping strategies that act as protectors against CF, confirming previous results (Delicourt et al., 2013; Halbesleben, 2006; Welbourne et al., 2007).

Nevertheless, it should be noted that our sample consisted entirely of women, which may have contributed to the particularly high scores we obtained. Indeed, burnout and compassion fatigue are favored by the fact of being a woman, as well as by depression, insomnia and anxiety (Lluch et al., 2022). Furthermore, the recruitment method may have generated a bias. It is possible that the SLTs present on the social network groups we used share certain characteristics (like being HSPS) and are more concerned by certain difficulties (like BO and CF) encountered in their profession.

## 6. Conclusions and perspectives

Despite its innate and a priori stable nature (Dunn, 2001), the negative effects of a high sensitivity can be corrected using specific strategies that can be acquired. This study focused on French-speaking female SLTs and as such our results cannot be generalize and further investigation must be conducted. Yet, we can understand that a high level of SPS can be a resource for people, provided that the type of sensitivity in question can be identified and appropriate strategies put in place. This study confirmed that coping strategies focused upon problem and social support are more appropriate.

At this stage, it might be interesting to go further by studying the involvement of HSPS components, since they play different role, either protective or vulnerable. It would then be interesting to investigate the role of aesthetic sensitivity, for example, or that of controlled harm avoidance in the face of burnout and compassion fatigue. This could help highly sensitive SLTs and carers in general to better protect themselves of the “cost of caring”.

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# PASTOR OR MANAGER? YOUNG PRIESTS PLACED INTO A ROLE THEY DID NOT SIGN UP FOR

**Gottfried Catania, & Andre Mifsud**

*Department of Psychology, University of Malta (Malta)*

## Abstract

The number of young persons attracted to the priesthood in the Roman Catholic church in Europe has been steadily declining over the past few decades. Persons attracted to this role usually view it as a vocation, with the main occupational aspects of the role they are interested in being addressing the pastoral needs of their congregation, both from a spiritual and a personal/social perspective, and their involvement in the rites that are important to them and their faith. The number of persons interested in becoming priests or pastors has been steadily decreasing in most religions. As a result, in Malta, persons studying for the priesthood are thrust into the role of vice parish priest as soon as they are ordained and can expect to be “promoted” to parish priest soon after. The role of a parish priest is however much more managerial rather than pastoral, with incumbents expected to perform a number of managerial roles such as paying the bills and managing accounts, coordinating and leading various types and levels of meetings, and ensuring the smooth running of the parish as a whole. In most other organizations managers are surrounded by a dedicated team of people who have usually been specifically selected according to certain criteria, are a good fit with the organizational culture, and are all committed to the same goals. Parish workers, however, usually mostly include volunteers with limited availability of time and expertise, and at times having agendas which are at odds with the main agenda of the parish. Priests are not given any managerial training in their formative years, with training mainly focused on theology. Young priests have expressed concern at having to take up such an important role which they do not feel prepared for, and which is somewhat at odds with what they originally expected to be doing as priests. This qualitative study will interview young priests from an organizational psychology perspective, focusing on their perception of how what they are actually doing matches what they expected to be doing, with its possible consequent effects on motivation, job satisfaction, and attrition. Six to eight young priests will be interviewed, and data will be analyzed using reflexive thematic analysis.

**Keywords:** *Parish priests, managers, job satisfaction, motivation, conflicting roles.*

## 1. Introduction

*“I wish I had more time to work with youths, and if I could, I would delegate the administration and spend more time with people.”*

In a public statement given to *The People of Malta* in April 2022, 34-year-old Tarxien archpriest Fr. Chris Ellul sheds light on a side of priesthood often disregarded. Harris (2014) lists qualities posed by Pope Francis, such as hospitality, sobriety, patience, kindness, and goodness of heart as constituents of a “good” priest, in line with the five qualities posed by the Vocation Office of the Diocese of St Augustine (2021) - love for Eucharist, strong prayer life, need for scripture, generosity and kindness, and being a good listener. All these qualities depict the priest as a relationship-oriented spiritual advisor, both a physical representative of God and an available counsellor for his parishioners. While these are undeniable aspects of priesthood, the 34-year-old archpriest’s statement highlights a third element: the priest as manager of the parish, involved in fulfilling managerial and administrative time-consuming tasks. This study will explore their lived experience of young Roman Catholic priests who are assigned to managerial positions early in their career.

### 1.1. The role of the priest

From a spiritual perspective, Roman Catholic priesthood is defined by a secure attachment to God and other religious figures (Rajagopalreddy & Varghese, 2020). From a practical perspective, priesthood is comprised of conducting Sunday Mass, hearing confessions, drafting the parish budget,



supervising parish staff, and conducting special services for funerals, baptisms, and marriages (Zickar et al., 2008). Although traditionally regarded as a spiritual teacher and advisor, the role of the priest today has expanded to incorporate the administration and management of the parish, resulting in a multitude of different roles and tasks.

Way back in 1969, Stewart had already acknowledged this “crisis of role ambiguity and strain”, dividing the tasks carried out by the priest into five different offices: the *priest* who is focused on sacramental duties; the *pastor* who provides counselling to his parishioners; the *preacher-teacher* who educates and forms attitudes; the *prophet* who advocates and acts as spokesperson for the oppressed; and the *administrator* who is responsible for organizational and administrative tasks. Similarly, in analyzing the local position of the parish priest in Malta, Koster (2015) delineates multiple roles of the “kappillan”. He acts as a counsellor, a spokesperson and a public registrar, as well as a delegator who must “supervise the local clergy and assign various duties to them” (p. 189), at the risk of initiating envy and disputes especially in such small communities. This administrative side to priesthood contrasts with the traditional depiction of the instructional priests, perceived mostly as teachers (Horan & Raposo, 2015).

The role of the priest is also a “sacramental representation” through his unique relation to Christ (“The Pope Speaks”, 2002). Here, the six elements posed as central to the priesthood include priestly identity, unity of life, journey towards holiness, fidelity to Ecclesiastical Discipline, Ecclesial Communion, and a sense of the Universal. There is no reference in this document to managerial or administrative duties. Even when discussing priest shortages, the document states that delegation “cannot in any way substitute the task of [...] the parish priest” (p. 152), perceiving duties as solely sacramental, without acknowledging the managerial and administrative tasks that could, in fact, be easily passed on to others. Lount and Hargie (1997), on the other hand, regard the priest as a counsellor and list the range of incidents reported to priests, ranging from marital disharmony to bereavement, alcoholism, substance abuse, physical and verbal abuse, and mental health issues, amongst others. In line with this, they also posit important interpersonal skills for the counsellor-priest to possess, such as effective listening, confrontation, showing empathy and sensitivity, and respecting confidentiality.

Reilly (1975) also investigates how Catholic priests perceived themselves at the time. While she found consensus on perceptions of the priest as pastor, teacher, and head of rituals, young priests were found to give more importance to prophetic activities and less to administrative duties, for which priests did not feel they were adequately trained. Unfortunately this situation persists in the training of priests in the Seminary in Malat, where training focuses on theology and the pastoral role of the priest. This implies that the seminary’s lack of instruction potentially contributes to the young clergy’s disillusionment, eventually discovering the administrative workload through experience. Additionally, in analyzing priests’ self-perceptions vis-à-vis how they are perceived by parishioners, Stewart (1969) finds that while the clergy like to see themselves as pastors and counsellors, “parishioners want the priest to function and perform better and oftener in his administrative role” (p. 84). Administrative roles are found to be the most demanded by the church yet are rated as least attractive by priests. Time is mostly invested in the roles of prophet and pastor. Stewart’s findings suggest role strain, potentially resulting from overwork due to role multiplicity and lack of training, orientation, and specialization in relevant competencies required, mostly when it comes to management.

## 1.2. The role of the manager

Several theorists have tried to define management. Most famously, Mintzberg (1973) demarcates ten managerial roles grouping them into three categories. Later, DuBrin (2012) increased the number of managerial roles to seventeen and the number of categories to four (see table 1 below).

Table 1. DuBrin’s (2012) managerial categories and roles.

| Categories              | Roles                |
|-------------------------|----------------------|
| Planning                | Strategic planner    |
|                         | Operational planner  |
| Organizing and staffing | Organizer            |
|                         | Liaison              |
|                         | Staffing coordinator |
|                         | Resource allocator   |
| Leading                 | Task delegator       |
|                         | Figurehead           |
|                         | Spokesperson         |
|                         | Negotiator           |
|                         | Motivator and coach  |

|             |                          |
|-------------|--------------------------|
|             | Team builder             |
|             | Team player              |
|             | Technical problem-solver |
|             | Entrepreneur             |
| Controlling | Monitor                  |
|             | Disturbance handler      |

The table above clearly hints at the complexity of the managerial role, implying that training is essential for managers to be able to perform their role effectively. Most of the above competencies are skills which can be taught, falling under the categories of personal, interpersonal and group skills (Whetten & Cameron, 1983)

### 1.3. The priest as manager

While recognising the pastor’s role as manager White (2018) does not believe conventional managerial theory can be applied to the priesthood. His list of managerial tasks applicable to priests includes planning, marketing, financial management, and human resources management among others. Rainer (2013) draws attention to basic level managerial tasks for priests, such as paying the bills, calling meetings, and setting parish policy. In another paper Rainer (2009) poses five anecdotal observations of the different functions of the management role of the pastor, namely being a *liaison*, or spokesperson for the church; a *mediator*, intervening in times of crisis; a *juggler*: a leader of many teams, alternating between different meetings; an *observer*, or monitor of the church. And a *disseminator*, relaying information and connecting the church as a body.

Walters (1996) sees the pastor as a personnel manager, noting that “Seminary training at the Master of Divinity level in personnel management is seldom sufficient to prepare a pastor to know how to develop functional role descriptions, to conduct interviews [...], provide supervision and evaluations [...], deal with problem employees, and to discharge an employee if it becomes necessary”. He contrasts effective organizational practises with the recruitment of the apostles as outlined in the bible, conducted without a prior job analysis, advertising openings, preparing a comprehensive job description, conducting interviews, checking references, and actually scrutinising applicants. What Walters attempts to demonstrate by this is a distinction between the spiritual and the managerial, and this becomes exceptionally important in a context where priesthood preparation is focused on the former and excludes the latter. For instance, in analysing the Seminary of Malta’s formation of Maltese priests, Bonnici (2000) proposes a programme of formation based on evangelisation, without ever referring to administrative and managerial tasks. He also underlines an attraction theory, founded on the belief that “the bishop should respect this attraction and ordain priests who were attracted to the priesthood” (p. 38), prioritising attraction over specialization and assessed competencies. This contrasts with Walters (1996) position, which focuses more on church personnel policies and essential issues they need to address, such as probationary periods, normal working hours, rest and meal periods, overtime, paydays, performance appraisals, sick leave, vacation, and other benefits. All this planning falls on the shoulders of the parish priest, more often than not with little or no managerial training. Walters gives several experiences as examples: “When I felt a call to the ministry and began to respond to it I did not give much thought that one day I might be the defendant in a costly wrongful discharge suit or that I would have to spend much of my time dealing with employing and supervising lay staff [...] yet as much time or more may have to be given by the more typical pastor who is the only ordained person in the church but who supervises many lay staff—secretaries, custodians, music personnel, school staff, wedding personnel, professional program staff, treasurers, etc.” (p. 4).

The studies cited above show a considerable overlap between the role of priest and that of manager. It seems, however, that for some theorists these roles are more distinct than they are alike. In analysing the facets of leadership, Hatch et al. (2006) distinguish priesthood and management as two separate categories, and list different descriptions and core competencies for each (see table 2 below)

Table 2. Differences between the managerial and pastoral roles of priests (Hatch et al., 2006).

|                               | Manager                 | Priest                |
|-------------------------------|-------------------------|-----------------------|
| Common description            | Disciplined, rational   | Empathic, ethical     |
| Core competencies             | Organizing, controlling | Inspiring, comforting |
| Helps others develop their... | Technique               | Faith                 |
| Psychic domain                | Intellect               | Soul                  |
| Type of vision                | Strategic               | Transcendent          |
| Source of power and influence | Expertise               | Purity                |
| Heroic ideal                  | Decision-maker          | Saviour               |

Holland (1966) groups vocational interests in six RIASEC types and organizes them in a hexagonal model, with correlation being greater between alternate than opposite types and the greatest between adjacent ones (Hutchinson, 2014). In correlating RIASEC dimensions to psychometric evidence from psychology students, those inclined towards clinical psychology (similar to the therapeutic function of the priest) correlate to the social dimension of Holland's model, while those inclined towards organizational psychology (similar to the organizational function of the manager) correlate to the enterprising dimension (Ferreira et al., 2015). This result indicates that younger priests who, because of the lack of persons entering the priesthood, are given the role of vice parish priests as soon as they are ordained, may find themselves increasingly disillusioned with their role, ending up having to occupy a managerial role which they are not trained for and which does not align with their original pastoral vocation. This might lead to decreased motivation and job satisfaction, possibly resulting in some priests leaving their role and compounding the problem of lack of priests.

## 2. Proposed methodology and conclusion

In order to understand the lived experience of young priests who are more often than not thrust into managerial roles which they would prefer not to be doing, semi-structured interviews will be carried out with six to eight participants. Interviews will be analyzed using reflexive thematic analysis (Braun & Clarke, 2019). It is envisaged that results will shed light on the struggles young priests face when trying to juggle the pastoral and managerial roles, and point to needs which need to be addressed in the training of priests. It is hoped that the above would result in priests who are more likely to remain motivated and continue deriving satisfaction from their job.

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## ADOLESCENT'S ATTITUDE TO FOSTER OR ADOPTED CHILDREN

**Elena Chebotareva**

*Moscow State University of Psychology & Education; HSE University (Russia)*

### Abstract

The way how sibling relationships are formed in foster and adapting families (next – “foster”) seems to be an important issue for study. Among other things, sibling relationships play an important role in the formation of personality and persist throughout life longer than other close relationships. We studied through theoretical and qualitative methods the aspects of the relationship of biological adolescent children to their foster siblings, as well as to the adoption situation in general and to the phenomenon of orphanhood. First, 61 adolescents from 12 to 18 years old ( $M=15$ ) gave their free associations to the concept of “adopted child” and definitions of the concept. We analyzed the obtained associations with the method of prototypical analysis by P. Vergès; the definitions were analyzed by the method of phenomenological content analysis. Next, 11 semi-structured interviews were conducted about the adolescent’s experience of living in a family with a foster child. Additionally, the modified Sachs-Levi “Incomplete Sentences” technique was used with following phenomenological content analysis. We also used a modified version of the self-assessment method by Dembo-Rubinstein and the “Family Sociogram” method by Eidemiller. We have found that adolescents’ social ideas about the concept of “foster child” vary depending on their experience of living in a foster family. The representations of the biological children from foster families were more objective, detailed, and associated with real facts and feelings. These ideas are somewhat more emotionally charged; they combine both positive and negative emotions. Teenagers from foster families better understand both the characteristics of foster children, the circumstances of their lives, and their parents’ motives for fostering or adopting a child into the family, as well as the responsibilities of foster families. The attitudes of biological children - adolescents towards foster siblings are generally friendly, but ambivalent. Biological children - adolescents from foster families associate their negative experiences with foster children with unrealistic expectations due to lack of information, as well as with limited personal space and the inability to discuss their experiences regarding changes in the family openly. Adolescents in a foster families experienced some changes in their family structure, for example, they perceive their parents as having become closer to their foster child and pushing their biological child to the periphery of their family system. The results of the study allow us to develop special therapeutic techniques to help foster families.

**Keywords:** *Adolescent, foster family, adopting family, social representations, foster child.*

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### 1. Introduction

For child’s successful adaptation in the family, it is important to ensure the functional and structural reorganization of the substitute family, the development of the child’s interaction with all family members (Oslon, 2006; Shulga & Antipina, 2018). A significant predominance of researchers’ attention to child-parent relationships, compared to sibling relationships, is noted among studies of various family factors in the children adoption.

Sibling relationships are one of the most important connections that people maintain throughout their lives (Allan, 1979). Siblings can provide adolescents with significant support, training for responsibility and caring skills developing, can be figures of long-term attachment (Dunn, 2007). But in a foster family, the presence of a natural child can create additional difficulties in the foster child adaptation. Some studies show that rates of repeated child abandonment are higher in families that already have natural or adopted children (Wedge & Mantel, 1991). In turn, natural children are caught in a dilemma between the significance of the very fact of adoption and caring for a foster child, and a strong sense of injustice towards themselves (Thompson & McPherson, 2011; Rushton et al., 2001).

## 2. Objectives

This study was aimed to identify the specifics the attitude of natural-born adolescents from foster families towards foster children in comparison with adolescents who do not have experience of living together with an adopted child. It is important to clarify that in Russian society, the differences between foster families and adoption are clearly visible at the administrative level, but at the level of everyday ideas, many people poorly distinguish between these concepts. Therefore, we considered it appropriate to explore ideas about these two types of families together.

We hypothesized that the attitude about foster children of the adolescents from families without experience of adoption are more anxious, reflecting social fears and expectations; and the attitude of the adolescents from families with experience of adoption are more realistic and emotionally neutral.

The following research questions were also formulated: 1) What emotions do adolescents feel from foster families experience to foster children?; 2) How do they feel in facing the reality of orphanhood?; 3) How do they feel in adoption situations?

## 3. Methods

The research consists of two main stages. To collect initial empirical data, we used the following **methods**: free associations to the concept of “adopted child” and definitions of the concept. We analyzed the obtained associations with the method of prototypical analysis by P. Vergès; the definitions were analyzed by the method of phenomenological content analysis.

At the first stage, 61 adolescents from 12 to 18 years old ( $M=15$ ) participated in the survey. The first group included 24 adolescents from 12 to 18 years old, natural children from substitute families (foster and adoption). The second group consisted of 37 adolescents from 12 to 18 years old from families who had no experience of adoption. Both groups were balanced for gender.

Next, 11 semi-structured interviews were conducted about the adolescent’s experience of living in a family with a foster child. Additionally, the modified Sachs-Levi “Incomplete Sentences” technique was used with following phenomenological content analysis. We also used a modified version of the self-assessment method by Dembo-Rubinstein and the “Family Sociogram” method by Eidemiller.

## 4. Results and discussion

### 4.1. The content and structure of adolescents’ attitude to the concept of “foster/ adopted child”

The concept of *beloved/love* occurred to be common to both groups of adolescents in the core zone of attitudes. The concept of *compassion* became specific for the core attitudes of adolescents from families without experience of foster care. Most likely, this points to contemporary discourse, a broad social movement in support of adoption, and a large amount of related information in the media. Among the core concepts of adolescents from foster families there are on the one hand, *difficulties*, and on the other, a *positive acquisition, for example, friendship*. This feature may indicate that adolescents from foster families rely on stereotypes characteristic of their community (foster parents’ schools, special groups for natural children from foster families, family environment). It is important that difficulties are not kept quiet, which suggests that they are generally perceived as surmountable and not so critical as to outweigh the benefits.

In the first peripheral area of associations (high-frequency opinion of minority), the common concept was *parents/ mom/ dad/* In a group of adolescents from foster families, specific associations were: *small, toys, joy, sick, illness*. In the group of adolescents from families without foster children, the following concepts prevailed: *orphan, guardianship, child, new friend, not relative*. That is, in the group of adolescents from foster families there is a focus on the real situation of living together with a foster child, while in adolescents from families without fostering experience, the associations are mainly related to the specificity of foster children, their distinctive features, and facts from their lives.

In the second peripheral area (low-frequency opinion of majority), which is usually associated with the personal opinion of respondents, the concept of *brother / sister* was the common elements. For adolescents from families without fostering experience, the concepts of *orphanage, child without parents, parents have died* indicate internal experiences associated with the situation of orphanhood itself, the fear of losing parents and loneliness, then for natural children from foster families more often concepts are: *desire to help, annoying, infuriates*. These are associations that express a real personal attitude towards a foster child. It is ambivalent and, on the one hand, it is a sincere involvement in their families’ aims, and on the other hand, recognition of their own negative feelings to a foster child.

In the third peripheral region (low-frequency opinion of minority), there were the emotions experienced by respondents in both groups. In the group of adolescents from foster families, the association expressed were rather *neutral or positive*. The adolescents from families without fostering experience expresses ambivalent emotions, on the one hand indicating the *possibility of a favorable development of events*, on the other - *sadness and fear of loneliness*.

The absence of emotionally charged associations in areas of adolescents' personal opinions suggests a deliberate emotional detachment from this topic. This assumption is also confirmed by the fact that all emotionally charged reactions turned out to be on the very periphery of the attitudes structure, i.e. are mentioned rarely and in the very last turn. And among them the emotions of sadness and loneliness predominate. Apparently, these are the emotions evoked by the topic of orphanhood among teenagers who are not familiar with fostering situation personally. The associations reflecting the personal opinion of adolescents from foster families are more specific, describe real life situations, they generally contain more different emotions, including ambivalent ones. This allows us to assert that natural adolescents in foster families are strongly involved in the fostering situations, they comprehend it, integrate it into the system of their own values and motives, and experience it emotionally. This shows the importance of the active involvement of natural children in the system of social and psychological support for foster families.

The content analysis of the definitions of the concept "foster / adopted child" given by the respondents next differences were revealed. In the group of adolescents from foster families, more semantic categories were identified (39) than in the group without fostering experience (29). As a result of group discussion and expert assessments all identified categories were grouped into 8 meta-categories: general idea of a foster/ adopted child, a child deprived of parents; the emergence of a new family; expectations and responsibility of the foster family, the reasons why the child was left without parental care, the reasons why the foster families take the child, feelings to the foster child, hopes. The lists of meta-categories in these 2 groups were the same, the frequency of their occurrence is also approximately the same, the differences lie only in their semantic content.

In their representations the foster child himself, respondents from both groups mention the "foreignness" of the adopted child, but in the group of adolescents from families without fostering experience, this theme was mentioned much more often. In both groups adolescents most often mentioned that a foster child *left without parental care* and was *accepted into a new family*, but in the group of adolescents from foster families, the theme of a new family was mentioned more often, and in the group of adolescents without fostering experience, the theme of absence of parents was heard usually. In the group of natural-born adolescents from foster families, *responsibility of the family* and rather *objective expectations from the foster child* were mentioned more often, and in the group of adolescents without fostering experience, the theme of *obligation* was more often manifested. When it comes to the *reasons why a child was left without care*, there were greater awareness among adolescents from foster families. They express a *greater number of reasons for the loss of parents*, while most statements by respondents from families without fostering experience were limited to the abstract "circumstances." Among the *reasons why foster families take in a child*, the statements of adolescents from families without fostering experience mentioned the theme of *the general mutual need of the child and the family for each other* more often. In contrast, teenagers from foster families were more oriented towards the motives of their parents and give *more specific and varied reasons (they want to help, they cannot have their own children, they were waiting...)*. When talking about their *emotional attitude towards a foster child*, both groups talk about *support*, but in the group of adolescents from foster families, the ideas of *sympathy and care* were more often heard. *Positive hopes* were more often mentioned by adolescents without fostering experience, but these hopes were more abstract (*a good future, a new home*); adolescents from foster families talk more specifically about the *next stages of the foster child's life*.

Thus, we see that the content of the representations of adolescents from families without fostering experience mostly reflect a certain public opinion on this issue, as well as the expression of some anxiety regarding a possible collision with the situation of orphanhood. The content of the representations of natural children from foster families, mostly are filled with elements of personal experience. They are less emotional colored, but have more texture, details, fewer social stereotypes, more content related to what the family is experiencing. Apparently, adolescents from foster families are more informed by their parents about what to expect when a foster child appears in the family, and about what function the family performs in relation to this child. Adolescents from families without fostering experience seem to be guided by social discourse regarding foster children, by information that is broadcast through the media and social networks.

## 4.2 Emotional attitude of natural children to foster | adopted siblings, the situation of adoption and the phenomenon of orphanhood

At the second stage of the study, semi-structured interviews were conducted with 11 adolescents (5 girls and 6 boys) from 12 to 18 years old ( $M=15$ ), who are natural children in foster care families. The saturation of the sample was ensured by the variability of the cities of residence, the number of adopted children in the family, the length of time living with the adopted child varied from 3 to 11 years

( $M = 3.9$ ). Analysis of the interviews using the grounded theory method allowed us to draw the following conclusions.

**The emotions** that natural children feel to the foster children are quite intense and varied. Trusting to their parents, being initially “in the know,” they calmly perceive the information that a foster child will appear in the family, sometimes with interest and positive expectations. But when faced personally with what adoptive brothers and sisters can be like, the range of experiences expands and includes both irritation, alienation, and sympathy, the desire to participate, to establish contact. And at this moment, it becomes important to be able to discuss it openly with parents or specialists/

Limited information about what they will face contributes to the formation of unrealistic expectations and feelings of helplessness in situations where reality does not meet expectations. Negative emotions are often associated with a adolescent’s lack of personal space, with an increase in emotional distance from the parents, and with the inability to express to them feelings associated with the arrival of a new family member.

**The attitude of natural children towards idea of adoption** is generally pragmatic. Despite the fact that they perceive the adoption of a child into a family as an undoubtedly good deed, they understand that foster parents may have personal motives (inability to have children, filling an inner emptiness). From their own experience, they know that raising a foster child requires a lot of time, effort, stability and financial costs, and is fraught with serious changes in the family. Almost all of them accept the possibility of adoption as a good way to have children, but they doubt if “they will be parents in principle?”, because they understand how much effort, responsibility and dedication it requires.

**The experience of facing the reality of orphanhood**, despite the associated sense of fear, turns out to be a resource for natural children. Thanks to it, they learn to be attentive and tolerant of differences between people. It encourages greater empathy, understanding and acceptance of the characteristics of others. Exposure to the traumatic experiences of other children influences how they evaluate their own lives, expands boundaries, and develops skills of patience and self-control, which respondents themselves consider important for themselves.

The data from projective techniques also confirm the results of the previous stages of the study and, in general, are consistent with each other. Unfortunately, the text size limitation does not allow us to present them in detail. In addition to what was discussed above, these data show differences in the perceptions of adolescents from foster families about the status of their mother and father. In general, in their perception, parents are closer to their foster sibling than to them. Adolescents in this situation see themselves as relegated to the periphery of the family structure. But, apparently, they consider it natural for a mother to be immersed in caring for a new family member. As we know from other methods, adolescents understand their mother’s motives and assume her values. Apparently, this is why the image of the mother, despite the emotional distance from her, remains positive, colored with bright, sthenic emotions. Perhaps, like in situation where a new natural child appears in the family, the eldest/earlier child pays attention to the father, expecting help and support from him in a situation where the mother cannot give him as much attention as before. But, for some reason, fathers in foster families do not perform this function and do not provide their natural child with sufficient support, which apparently explains the range of negative emotions toward father. These data pose the task of a more detailed study of the distribution of roles (including those related to the regulation of the emotional climate) in foster families, studying the specifics of changes in the family structure associated with the appearance of a foster child.

## 5. Conclusions

1. Social attitudes of adolescents to the concept of “adopted child” vary depending on their experience of living in a foster family. The attitudes of natural children from adoptive families are more objective, detailed, and associated with real facts and feelings. These attitudes are more emotionally charged; they combine both positive and negative emotions. The attitudes of adolescents from families without adoption experience are drier, more detached, containing well-known facts, negative feelings associated with the phenomenon of orphanhood (loneliness, rejection, the possibility of being left without loved ones) are increasingly pushed to the periphery of the attitudes structure.



2. Adolescents from foster families better understand both the characteristics of adopted children, the circumstances of their lives, and the motives of their parents to take a foster child into the family, as well as the tasks and responsibilities of the foster family. Their attitudes to an adopted child reflect their acceptance of both adopted children with their characteristics and adoption situations in general.

3. The attitude of natural children – adolescents to foster ones is generally friendly, but ambivalent, along with recognition of significance of caring for orphans, they experience complex, ambivalent feelings towards foster siblings and the general situation. Their experience contains both gains and losses, conflicts, feelings of loneliness, and distance from parents. The range of experiences varies from irritation, alienation to sympathy, care, and the desire to establish contact.

4. Natural children - adolescents from foster families associate their negative feelings to foster children with unrealistic expectations due to lack of information, as well as with limited personal space and the inability to discuss their experiences regarding changes taking place in the family openly.

5. Adolescents who are natural children perceive the experience of close acquaintance with the phenomenon of orphanhood as a resource, despite the actualizing fears of loss of loved ones and loneliness. Thanks to this, they have the opportunity to expand their understanding of the world, develop important skills of responsibility, tolerance of differences, patience and acceptance.

6. The adolescent's attitude to the possibility of a child adoption in the future is contradictory. On the one hand, this becomes a normal form of parenthood for them, on the other hand, understanding how much resources this requires from parents makes them think about giving up parenthood in the future in principle.

7. Adolescents in a foster family experience changes in the family structure; they see their parents as having become closer to the foster child and pushing the natural child to the periphery of the family system. But the emotional attitude to parents differs: while experiencing positive emotions towards the mother, the adolescent in this situation more often experiences negative emotions towards the father.

Based on the results obtained, in practical work with foster families, it seems important to pay attention to the family structure: to provide all children with a fairly comfortable personal space, pay special attention to ensuring a stable connection with parents for the natural child; find ways for the father to compensate the lack of attention to the natural child from the mother during particularly stressful periods of a new family member adaptation.

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## THE PATTERN OF CHANGE IN AUTONOMOUS CAREER MOTIVATION IN MID-ADOLESCENCE

**Toni Babarović, Iva Šverko, & Eta Krpanec**  
*Ivo Pilar Institute of Social Sciences (Croatia)*

### Abstract

This study focuses on the changes in autonomous career motivation during middle adolescence. Autonomous Career Motivation is a recently developed construct defined as motivation for personal vocational development and career construction, expressed along a relative autonomy continuum (RAC) encompassing six types of career motivation (internal, identified, positive introjected, negative introjected, external, and amotivation). A cohort accelerated longitudinal design was employed, commencing with two cohorts of high school students from the 1st (15 years old) and the 2nd (16 years old) grade, and tracking them for three consecutive years. The sample consisted of 688 adolescents (329 in the younger cohort and 359 in the older cohort; 36% were boys), assessed three times (in springs of 2021, 2022, and 2023) in their schools using computerized assessments. The Autonomous Career Motivation Scale, which measures the six motivational dimensions used to calculate the relative autonomy continuum, was applied. Our data confirmed the existence of a simplex structure of six motivational dimensions and their hypothesized positions on the RAC at all three time points. We examined changes in career motivation over time using ANOVA mixed models, including age and gender as between-group factors. We found a small but significant time effect on the autonomy continuum, indicating a moderate decrease in autonomous motivation over time ( $\eta^2=.016$ ). Specifically, this effect could be attributed to an increase in introjected-negative and external types of motivation, while other types of motivation remained stable. Gender differences were observed, with girls displaying somewhat higher levels of autonomous motivation, primarily manifested in higher identified and introjected-positive motivational types. No main effect of age group or interactional effect of age group was found, confirming the existence of the same pattern of motivational change and stability in both cohorts. The general decline in autonomous motivation for career construction and the increase in specific external motivational types could be attributed to the impending transition that adolescents face after high school, which they confront at the age of eighteen. Practical applications of these findings underscore the importance of personalized career counselling, wherein tailored guidance based on individual motivational patterns can empower adolescents to make informed and fulfilling career choices.

**Keywords:** *Career motivation, longitudinal, adolescence, career guidance, vocational choices.*

### 1. Introduction

Autonomous Career Motivation is a recently developed construct defined as motivation for personal vocational development and career construction. It is best understood as an inherent, internal drive compelling individuals to actively participate in the process of career construction. People who exhibit autonomous motivation in choosing a career do so out of a genuine desire to engage, rather than feeling compelled by external factors such as social pressure or expectations (Šverko and Babarovic, 2023). This concept of autonomous career motivation serves as a valuable addition to existing career theories, which often lack an explicit focus on the motivational processes inherent in career development. By highlighting the intrinsic desire to shape one's own career path, autonomous career motivation contributes a nuanced perspective that underscores the importance of personal volition and self-driven engagement in career development. Sheldon and colleagues (2017) offered a broad definition of autonomous career motivation, within the Self-determination Theory (Deci & Ryan, 1985; Ryan & Deci, 2017), seeing it as a Relative Autonomy Continuum (RAC). The continuum defines human motivation in levels of internality and was confirmed by testing the pattern of correlations between motivational types (Ryan & Connell, 1989; Sheldon et al., 2017). Sheldon and colleagues (2017) proposed six dimensions of motivation ordered on RAC: intrinsic, identified, positive introjected, negative introjected, external and

amotivation. Considering all six categories of motivation, spanning from intrinsic motivation to the four forms of externally regulated motivations and finally amotivation, a discernible continuum of autonomous motivation emerges.

During middle adolescence, typically marked by the age range of 14 to 18, we anticipate a nuanced shift in autonomous career motivation, particularly as older adolescents grapple with the imminent decision of selecting a university or choosing an employment. This phase is characterized by an intensified awareness of future career paths and the importance of educational choices. While intrinsic motivation may remain a driving force, external factors such as societal expectations, parental influence, and peer pressure might gain prominence. The approaching decision of university or job selection introduces a blend of excitement and pressure, potentially impacting the autonomous nature of motivation. Consequently, during middle adolescence, we may observe a dynamic interplay between intrinsic desires for career construction and the increasing influence of external factors, underscoring the need for targeted support and guidance to foster a balanced and autonomously motivated approach to the career choice process.

## **2. Objectives**

This paper focuses on the change in autonomous career motivation during middle adolescence by empirically exploring its contribution in career construction in adolescence and by discussing its potential practical implications.

## **3. Methods**

### **3.1. Study design**

A cohort accelerated longitudinal design was employed, commencing with two cohorts of high school students from the 1st (15 years old) and the 2nd (16 years old) grade, and tracking them for three consecutive years.

### **3.2. Instruments**

The Autonomous Career Motivation Scale (ACMS, Sverko and Babarovic, 2023) assesses six distinct motivations influencing individuals' involvement in career construction: intrinsic, identified, positive introjected, negative introjected, external, and amotivation. It comprises 24 items, with each dimension represented by four statements. Respondents are required to indicate their level of agreement on a 5-point Likert-type scale for each statement. Results can be obtained for each motivational dimension and on the relative autonomy continuum (RAC) calculated from the dimensional results. Our previous research (Babarovic & Sverko, 2023) and this study data, in all three time points, confirmed the existence of a simplex structure of six motivational dimensions and their hypothesized positions on the RAC.

### **3.3. Sample**

The sample consisted of 688 adolescents. There were 329 students (15 years old in the first wave) in the younger cohort and 359 students (16 years old in the first wave) in the older cohort (36% were boys in complete sample). Respondents were assessed three times (in springs of 2021, 2022, and 2023) in their schools using computerized assessments.

## **4. Results**

Our data unequivocally substantiated the presence of a simplex structure comprising six distinct motivational dimensions, aligning with their hypothesized positions on the Relative Autonomy Continuum (RAC) across all three time points. To discern changes in career motivation over time, we employed ANOVA mixed models, incorporating age and gender as between-group factors. Notably, a modest, yet statistically significant, time effect on the autonomy continuum emerged, signifying a moderate decline in autonomous motivation over time ( $\eta^2=.016$ ). This decline was specifically attributed to an uptick in introjected-negative ( $\eta^2=.069$ ) and external ( $\eta^2=.074$ ) types of motivation, while other motivational categories demonstrated stability. Gender disparities were evident, with females exhibiting marginally higher levels of autonomous motivation, particularly evident in elevated identified and introjected-positive motivational types. The main effects of age group on career motivation were not observed, meaning that motivational patterns are similar in both age cohorts. Interaction effects of gender

or age on motivational change over time were both insignificant, affirming the persistence of the same motivational change and stability patterns across both cohorts, and for boys and girls.

Table 1. Longitudinal differences in autonomous career motivation during middle adolescence ( $N = 688$ ).

| Scales                  | M    | SD   | F     | df1/df2 | P    | $\eta^2$ | Contrasts |
|-------------------------|------|------|-------|---------|------|----------|-----------|
| Internal T1             | 3.32 | .89  | 0.54  | 2/1368  | .580 | .001     |           |
| Internal T2             | 3.27 | .91  |       |         |      |          | n.s.      |
| Internal T3             | 3.26 | .95  |       |         |      |          |           |
| Identified T1           | 4.25 | .64  | 1.80  | 2/1368  | .166 | .003     |           |
| Identified T2           | 4.28 | .66  |       |         |      |          | n.s.      |
| Identified T3           | 4.23 | .74  |       |         |      |          |           |
| Introjected positive T1 | 3.57 | .89  | 2.54  | 2/1368  | .080 | .004     |           |
| Introjected positive T2 | 3.62 | .87  |       |         |      |          | n.s.      |
| Introjected positive T3 | 3.65 | .85  |       |         |      |          |           |
| Introjected negative T1 | 2.29 | .90  | 50.56 | 2/1368  | .000 | .069     | T1 vs.    |
| Introjected negative T2 | 2.45 | 1.02 |       |         |      |          | T2 vs.    |
| Introjected negative T3 | 2.71 | 1.02 |       |         |      |          | T3        |
| External T1             | 1.96 | .78  | 54.56 | 2/1368  | .000 | .074     | T1 vs.    |
| External T2             | 2.16 | .93  |       |         |      |          | T2 vs.    |
| External T3             | 2.33 | .92  |       |         |      |          | T3        |
| Amotivation T1          | 2.10 | .86  | 0.24  | 2/1368  | .783 | .000     |           |
| Amotivation T2          | 2.05 | .88  |       |         |      |          | n.s.      |
| Amotivation T3          | 2.06 | .92  |       |         |      |          |           |
| RAC T1                  | 9.52 | 6.13 | 11.28 | 2/1368  | .000 | .016     | T1 vs.    |
| RAC T2                  | 9.04 | 6.66 |       |         |      |          | T2 vs.    |
| RAC T3                  | 8.36 | 7.02 |       |         |      |          | T3        |

## 5. Discussion & conclusion

The observed decline in autonomous motivation for career construction, coupled with the rise in specific external motivational types, may be linked to the imminent transition that adolescents undergo post high school, typically around the age of eighteen. This transitional phase presents unique challenges that can impact motivational dynamics. It seems that external factors such as societal expectations, parental influence, teachers and peer pressure might gain prominence in motivational structure.

Practical applications of these findings emphasize the significance of personalized career counselling. By offering tailored guidance aligned with individual motivational patterns, adolescents can be empowered to navigate this critical juncture more effectively, ultimately making informed, but still internally motivated and fulfilling career choices. Recognizing and addressing the evolving nature of motivation during this transitional period can enhance the effectiveness of career interventions, fostering better alignment between personal aspirations and career trajectories.

### Acknowledgements

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# LANGUAGE OF HATE AND DISCRIMINATION IN POLITICS: DOES IT MATTER WHO WE ARE TO CARE

**Medea Despotashvili**

*Faculty of Psychology and Educational Sciences, Tbilisi State University (Georgia)*

## Abstract

This study investigates voters' evaluation of politicians' speeches containing hate language, compared with the ones stressing equality or maintaining neutral attitude. The research was conducted in two stages ten years apart. Using correlation analysis and intergroup comparisons, the study examines the relationship between age, education level, and speech ratings. Our findings reveal no significant gender differences in speech evaluation. The results shed light on the complex interplay between demographic factors and speech evaluation. Comparison between two sets of data collected ten years apart also reveals different pattern of attitudes towards hate language between age groups.

**Keywords:** *Hate language, equality, perception, political behavior.*

## 1. Introduction

Hate language, defined as the use of derogatory or inflammatory speech targeting individuals or groups based on their characteristics (Cervone et.al, 2021), has become increasingly prevalent in media and political discourse. This article presents an attempt to contribute the understanding of the phenomenon of hate language through the lenses of social psychology and political psychology, focusing on its impact on individuals, groups, and society as a whole.

Hate speech and its evaluation in political discourse have garnered increasing attention in recent years. This study aims to address the relationship between age, education level, and speech evaluation, with a specific focus on hate speech and neutral speech in political contexts. The study also attempts to compare the attitudes towards hate language in ten years interval.

### 1.1. Social psychology perspective

According to social identity theory (Tajfel & Turner, 1979), individuals derive their self-concept from their group memberships and engage in ingroup favoritism and outgroup derogation to enhance their self-esteem. Hate language often serves as a tool for reinforcing ingroup solidarity by vilifying outgroups, thereby exacerbating intergroup conflict and prejudice (Leach et al., 2007). From the perspective of social cognitive theory of prejudice, cognitive biases such as confirmation bias and illusory correlation contribute to the selective processing of information that confirms existing stereotypes and prejudices (Devine, 1989). Media representations of marginalized groups often perpetuate negative stereotypes through sensationalized reporting and selective framing, fueling the proliferation of hate speech and discriminatory attitudes (Dixon & Linz, 2000).

Furthermore, the contact hypothesis suggests that positive interactions between members of different groups can reduce prejudice and intergroup hostility (Allport, 1954). However, hate language in media and politics can create a hostile environment that inhibits intergroup contact, perpetuating stereotypes and increasing prejudice (Pettigrew & Tropp, 2006).

### 1.2. Political psychology perspective

Group polarization Theory analyses the process, where exposure to extreme viewpoints, facilitated by hate language in political discourse, can intensify existing attitudes and contribute to the polarization of society (Sunstein, 2002). The use of hate speech by political leaders and media figures can galvanize supporters, foster loyalty, and mobilize collective action, thereby influencing electoral outcomes and policy decisions (Bruneau & Kteily, 2017). From another perspective, moral disengagement enables individuals to justify and rationalize hate speech by dehumanizing and delegitimizing outgroups (Bandura, 1999). By distancing themselves from the moral implications of their

actions, individuals can engage in hate speech without experiencing guilt or remorse, perpetuating discrimination and hostility (Menzel & Fischer, 2013). In addition, individuals predisposed to authoritarian attitudes are more likely to endorse hate speech and support authoritarian leaders who espouse discriminatory rhetoric (Altemeyer, 1998). Authoritarian leaders often use hate language to scapegoat marginalized groups, mobilize support, and consolidate power, undermining democratic norms and values (Hetherington & Weiler, 2009).

The Spiral of Silence Theory (Noelle-Neumann, 1984) posits that individuals are reluctant to express opinions that deviate from perceived societal norms, fearing social isolation or reprisal. Hate language, when normalized within a political context, can create an atmosphere of intimidation, suppressing dissenting voices and perpetuating discriminatory attitudes (Moy & Gastil, 2006). Consequently, voters may conform to dominant narratives, even if they personally disapprove of hate speech, leading to polarization and the marginalization of vulnerable populations.

Research has shown that exposure to hate speech can significantly influence electoral behavior. A study by Miller and Prentice (2016) found that voters exposed to xenophobic rhetoric were more likely to endorse anti-immigrant policies and candidates, irrespective of their prior attitudes. Similarly, a longitudinal analysis by Green et al. (2018) demonstrated a positive correlation between exposure to hate speech on social media and support for authoritarian political leaders. These findings underscore the potential for hate language to shape voters' perceptions and preferences, with implications for democratic decision-making.

Several factors may moderate the relationship between hate language and voters' attitudes. For instance, research by Mutz (2006) suggests that individual differences in media literacy and cognitive processing can mitigate the impact of hate speech, particularly among educated voters. Additionally, contextual factors such as the presence of counter-narratives or institutional responses to hate speech may attenuate its effects on public opinion (Davenport & Oliver, 2019). Understanding these moderating influences is essential for developing effective interventions to combat the proliferation of hate speech in political discourse.

## **2. Method and design**

**Participants:** The research was conducted in two stages: the first stage took place in 2013 and the second – in 2023. The sample comprised 210 individuals at the first stage, and 245 individuals at the second stage recruited from diverse demographic backgrounds, including varying age cohorts ranging from 18 to 70 years.

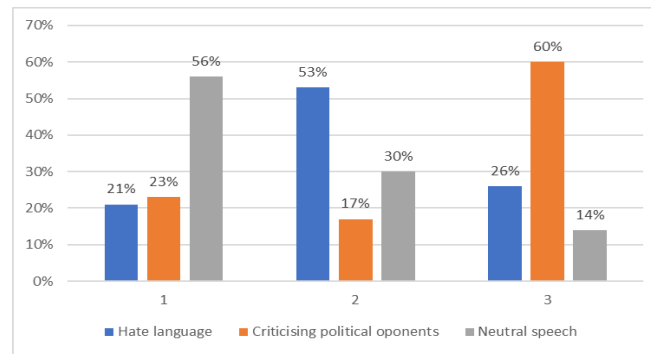
**Procedure:** Participants were given three texts as examples of political candidate's public speech. Candidate one used hate language against political opponents. Candidate two focused their speech on the achievement of the speaker and also criticized the opponents. Candidate three used neutral language only speaking about the politician's own accomplishments and goals. After reading three texts, the respondents were asked: "If there would be elections tomorrow, which of the candidates would you vote for in the first place, in the second place and in the third place."

**Data Analysis:** Quantitative data were analyzed using descriptive statistics and inferential tests to examine attitudes towards hate language across different age groups. Comparison between genders and education levels of the respondents were also analyzed.

### **2.1. The first stage of the research**

In general, the first choice for voting for the majority (53%) of the respondents was a speech where political candidate criticized their opponents; the second choice for 60% of the respondents was a speech where political candidate used neutral language, and hate speech was put in the third place in rating (56%).

Figure 1. Ratings of politicians' speeches, 2013.



We grouped age into three subgroups: 18-35, 36-50, 51 and above. Analysis of variance (ANOVA) was used to look more in detail into correlation of age with the evaluation of speeches. Grouping age into three subgroups revealed significant differences in attitudes towards hate language ( $F=6.255$ ,  $df=2$ ,  $p<.05$ ) and neutral speech ( $F=9.625$ ,  $df=2$ ,  $p<.001$ ) among different age groups. Post hoc analysis using Tukey HSD test indicated that respondents aged 18-35 found hate speech in politicians' discourse more acceptable ( $M=2.1$ ) compared to those aged 51 and above ( $M=2.64$ ), lower number means higher rating of the speech.

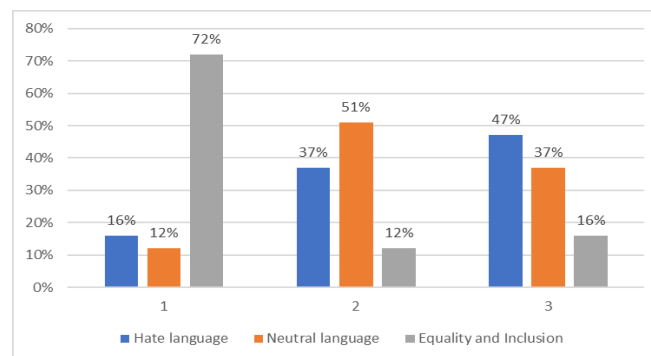
Analysis of variance demonstrated significant differences in attitudes towards hate speech based on education level. Attitudes towards politician's choice of language was significantly different amongst different education levels ( $F=4.441$ ,  $df=3$ ,  $p<.005$ ). Post hoc analysis revealed that respondents with a university degree perceived hate speech as more unacceptable compared to high school graduates. The first found hate language as more unacceptable ( $M=2.4$ ) than the second group ( $M=1.5$ ).

## 2.2. The second stage of the study

The study was repeated ten years later, in 2023, with modifications to the procedure. Participants were again presented with three texts containing examples of politicians' public speeches. Text one employed hate language towards specific target groups - gender, age, or ethnicity; text two remained neutral and focused on the political views of the candidate; and text three expressed values of equality and inclusion for different groups.

The majority of respondents (47%) chose a speech where the political candidate expressed values of equality and inclusion as their first choice. The second choice for 51% of respondents was a speech using neutral language, while hate speech was again rated the lowest, with 72% of respondents placing it in the third position.

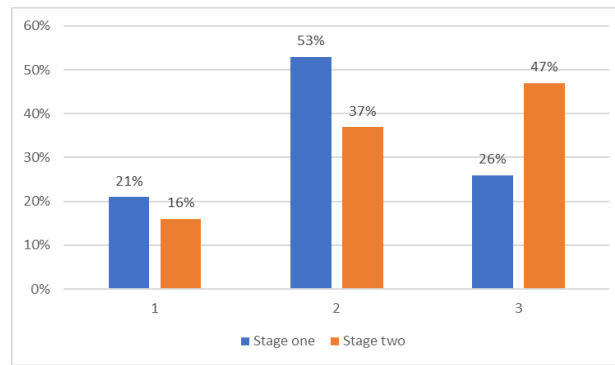
Figure 2. Ratings of politicians' speeches, 2023.



Independence Chi-Square analysis was conducted to compare ratings of hate language between the 2013 and 2023 data. The analysis revealed statistically significant differences in the rating of political speeches containing hate language (Chi Square= $32.232$ ,  $df=2$ ,  $p<0.001$ ). Ten years later, a smaller percentage of the sample evaluated hate language as more preferred or even as the second choice. Conversely, a larger percentage of the sample rated hate language as least preferred.



Figure 3. Change of preferences between 2013 and 2023.



Analysis of variance (ANOVA) was utilized to explore correlations between age and the evaluation of speeches in more detail. Grouping age into three subgroups revealed significant differences in attitudes towards hate language ( $F=9$ ,  $df=2$ ,  $p<.001$ ) and language promoting equality and inclusion ( $F=6.7$ ,  $df=2$ ,  $p<.001$ ) among different age groups. Post hoc analysis using Tukey HSD test indicated significant differences in evaluations of both types of speeches among all three age groups. Hate speech was least preferred by respondents in the 18-35 age group ( $M=2.8$ ), followed by the 36-51 age group ( $M=2.4$ ), and was more preferred by respondents aged 51 and above ( $M=2.3$ ).

Language promoting inclusion and equality was most preferred by respondents in the 18-35 age group ( $M=1.5$ ), followed by the 36-51 age group ( $M=1.8$ ), and least preferred by respondents aged 51 and above ( $M=1.9$ ). These findings differ from those of the first stage of our research, wherein younger respondents rated hate language more favorably than older individuals.

### 3. Discussion

This study delves into the nuanced dynamics of speech evaluation in political contexts, particularly focusing on hate speech and its intersection with demographic variables such as age and education level. Our findings contribute valuable insights into the complex interplay between these factors and attitudes towards political discourse.

The results reveal a notable shift in preferences over the ten-year period between 2013 and 2023. Initially, speeches criticizing opponents were favored, followed by those using neutral language, with hate speech rated the least preferred. However, in 2023, there was a remarkable change, with speeches promoting equality and inclusion garnering the highest preference among respondents. This shift underscores evolving societal norms and values, indicating a growing emphasis on inclusive and respectful discourse in political communication.

Age emerged as a significant determinant of speech evaluation, with younger respondents displaying greater tolerance towards hate speech compared to older individuals in the first stage of the study. This finding contradicts the conventional notion that younger generations are more progressive in their attitudes. Instead, it suggests a potential generational divide in perceptions of acceptable political discourse. Furthermore, older individuals showed a stronger preference for neutral language, reflecting a desire for less contentious rhetoric in political communication. This picture was reversed in the second stage of the research, where younger respondents had less tolerance towards hate speech and more preference of the language of equality, compared to the older respondents.

Education level also played a crucial role in shaping attitudes towards hate speech. Respondents with higher education levels were more likely to perceive hate speech as unacceptable, emphasizing the role of education in fostering critical thinking and tolerance. Additionally, higher education correlated with a preference for neutral language, indicating a desire for rational and constructive political discourse.

### 4. Conclusion

Hate language in media and politics has profound implications for social cohesion, intergroup relations, and political behavior. Future research should continue to explore the complex interplay between individual attitudes, group dynamics, and institutional factors in shaping the prevalence and impact of hate language. Moreover, efforts to mitigate the spread of hate speech should focus on promoting empathy, critical thinking, and inclusive discourse to foster a more tolerant and equitable society.

In conclusion, this study highlights the intricate interplay between demographic factors and speech evaluation in political contexts. The findings underscore the importance of considering age and education level in understanding attitudes towards hate speech and political discourse. The observed shift towards inclusive speech in 2023 reflects evolving societal values, emphasizing the need for politicians to adapt their communication strategies to resonate with changing public sentiments. Moving forward, continued research in this area is essential to inform efforts aimed at promoting respectful and inclusive political discourse in democratic societies.

Future research should further explore the mechanisms underlying these relationships and investigate additional factors that may influence speech evaluation. Understanding these dynamics is crucial for promoting inclusive and respectful communication in political contexts.

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## HIGHLY SENSITIVITY, JOB SATISFACTION AND WORK ENGAGEMENT AMONG SPEECH-LANGUAGE THERAPISTS

**Jimmy Bordarie<sup>1</sup>, & Olivia Gentilhomme<sup>2</sup>**  
<sup>1</sup>*QUALIPSY (UR1901), University of Tours (France)*  
<sup>2</sup>*Cabinet Synergie, Oullins (France)*

### Abstract

High sensory processing sensitivity (Aron & Aron, 1997) is a stable temperamental trait (Dunn, 2001) made up of three components (ease of excitation, low sensory threshold, and aesthetic sensitivity) (Smolewska et al., 2006) or four (to the three first is added controlled harm avoidance) (Bordarie et al., 2022). It is a factor of vulnerability regarding perceived stress (Andresen et al., 2018), burnout and compassion fatigue (Pérez-Chacón et al., 2021). This is true for health workers in general, and specifically for speech-language therapists as well (Bordarie & Mourtialon, 2023). However, health professionals are also known to be passionate, involved and they often express higher job satisfaction scores explaining higher level of compassion satisfaction (Kelly, Runge, & Spencer, 2015). The aim is to study the influence of sensory processing sensitivity and its components on the expression of job satisfaction and work engagement among speech-language therapists; a health workers category who needs more research (Brito-Marcelino et al., 2020). In this study, 396 speech-language therapists answered anonymously a questionnaire. We measured the four components of the French version of the highly sensitive person scale (Bordarie et al., 2022), the three components of Utrecht Work Engagement Scale (Zecca et al., 2015) and job satisfaction with a single item (Shimazu et al., 2015; Tavani et al., 2014). Statistical analyses were performed with JASP (version 0.17.1). Sensory processing sensitivity was not correlated with work engagement, but it was negatively correlated with job satisfaction ( $r=-.159$ ;  $p=.002$ ). The latter was positively correlated with work engagement ( $r=.652$ ;  $p<.001$ ). Overall, high sensitivity significantly decreased job satisfaction ( $\beta=-.159$ ;  $p=.002$ ). However, while the latter was negatively influenced by ease of excitation ( $\beta=-.136$ ;  $p=.007$ ) and low sensory threshold ( $\beta=-.150$ ;  $p=.002$ ), it was also positively influenced by aesthetic sensitivity ( $\beta=.177$ ;  $p<.001$ ) and controlled harm avoidance ( $\beta=.801$ ;  $p<.001$ ). The study confirms the dual conception of high sensory processing sensitivity and its paradoxical consequences (Bordarie et al., 2021). Highly sensitive speech-language therapists are less satisfied at work when their sensitivity is linked to the difficulty to manage the consequences of stimuli. This is in line with the literature stating that ease of excitation and low sensory threshold increase anxiety and depression for instance (Ahadi & Basharpour, 2010). Nonetheless, professionals who express a sensitivity linked to aesthetics and to the control of negative stimuli express higher job satisfaction scores. This confirms the protective role of these components (Bordarie et al., 2021).

**Keywords:** *Sensory processing sensitivity, job satisfaction, work engagement, vulnerability, speech-language therapists.*

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### 1. Introduction

Highly sensitive people are known to react more intensely than others to internal and external stimuli (Gere et al., 2009). Highly sensory processing sensitivity (HSPS) (Aron & Aron, 1997) is a characteristic that concerns around 30% of the population (Lionetti et al., 2018). Sensory processing sensitivity (SPS) is a multidimensional construct, composed of three components (i.e., ease of excitation [EOE], low sensory threshold [LST], aesthetic sensitivity [AES] [Smolewska et al., 2006]) or four (to the previous ones is added controlled avoidance of nuisances, [Bordarie et al., 2022]). Each component then plays a different role, sometimes protective, sometimes vulnerabilising (e.g., Ahadi & Basharpour, 2010; Bordarie et al., 2021). Some studies highlight the positive effects of a HSPS: highly sensitive people are said to develop better interpersonal skills (e.g., Acevedo et al., 2018). However, it is generally presented in the literature as having particularly negative effects on health, notably at work. For instance, HSPS

appears to increase burnout (e.g., Pérez-Chacón et al., 2021), particularly among speech-language therapists (SLTs) (Bordarie & Mourtialon, 2023). And it also has consequences on self-efficacy, and it is correlated with need for recovery and work displeasure (Evers, Rasche & Schabracq, 2008).

On the contrary of work displeasure, job satisfaction in organizational research can be described as “a pleasant or positive emotional state resulting from the evaluation of one's work or work experiences” (Locke, 1976, p. 1304). SLTs usually report high levels of job satisfaction, and several predictors of SLTs' job satisfaction have been identified, such as workload, control, support, work environment and pay, and work-life balance (Ewen, 2021). Previous studies have also shown that job satisfaction depends, notably, on job engagement (e.g., Yandi & Bimaruci Hazrati Havidz, 2022). Work engagement can be defined as the extent to which employees identify with their work, actively participate in their work and perceive their work performance as more important for their own good. Employees who are more involved in their work experience greater job satisfaction (Fung et al., 2014).

The present study aims at determining the relationship between sensory processing sensitivity, work engagement and job satisfaction among speech-language therapists. According to the literature, we hypothesize that:

- A high SPS should be correlated to higher levels of job satisfaction (according to Evers et al., 2008),
- A high degree of work engagement should lead to higher levels of job satisfaction,
- Work engagement should play a mediating role in the relationship between SPS and job satisfaction.

## 2. Methods

### 2.1. Measures

The questionnaire consisted of 43 items.

Sensory processing sensitivity was assessed using the HSPS-FR (Bordarie et al., 2022, adapted from Aron & Aron, 1997) which is a self-report questionnaire measuring four components (ease of excitation [EOE], low sensory threshold [LST], aesthetic sensitivity [AES] and controlled harm avoidance [CHA]). The higher the score, the higher the sensitivity. Job satisfaction was assessed with a single item, measuring whether or not the participant was satisfied with her job (Shimazu et al., 2015). The item was scored on a four-point Likert scale ranging from “1=dissatisfied” to “4=satisfied”. Work engagement was assessed with the short version of the Utrecht Work Engagement Scale (UWES). The UWES includes three subscales composed of 3 items each, related to the three dimensions of work engagement: vigor, dedication and absorption. Answers modalities scored on a seven-point Likert scale ranging from “0=never” to “6=always”. Socio-demographic questions were asked such as gender, age category, country of graduation (France; Belgium), the number of years of study to obtain the certificate of competence in speech and language therapy, the number of years of practice, and the practice setting.

### 2.2. Sample

Our sample consisted of 396 female speech and language therapists. They were divided into four age categories: 20-29 years old (n=88, 22.22%), 30-39 years old (n=135, 34.10%), 40-49 years old (n=100, 25.25%), 50 years old and over (n=73, 18.43%). These speech and language therapists trained in France (n=333, 84.10%) and Belgium (n=63, 15.91%). Their initial speech and language therapy training lasted 3 years (n=66, 16.67%), 4 years (n=233, 58.84%) and 5 years (n=97, 24.49%). They have been practicing less than or equal to 5 years (n=101, 25.51%), between 6 and 10 years (n=86, 21.72%), between 11 and 15 years (n=65, 16.41%), between 16 and 20 years (n=41, 10.35%) and greater than or equal to 21 years (n=103, 26.01%). They worked in private practice (n=310, 78.28%), in medical and social institutions (n=16, 4.04%), in hospitals (n=32, 8.08%) and in mixed practices (n=38, 9.60%). Their number of patients per week was less than or equal to 50 (n=236, 59.60%), between 51 and 60 (n=114, 28.79%), 61 and more (n=46, 11.62%).

### 2.3. Procedure

The questionnaire was created on a Google Form and distributed via social networks, on several SLT Facebook pages and on a SLT welfare page from 2023, January 11<sup>th</sup> to February 17<sup>th</sup>. It was also relayed through private SLT networks and by word of mouth. Participants were invited to respond online and were informed that their responses were anonymous and confidential. Prior to completing the questionnaire, participants were informed of the objectives of the study and were explicitly asked for their consent to continue the study. To access the questionnaire, participants had to click on “accept and continue” after having read the consent form and consent to participate.

## 2.4. Analyses

Statistical analyses of the questionnaire were then carried out using JASP software (version 0.17.1., JASP Team, 2023). First, descriptive analyses were performed for SPS, job satisfaction and work engagement. Second, we performed Pearson's correlations to analyze the existence of a link between the scales and subscales. Third, a mediation analysis was performed to measure the effects of the variables on job satisfaction.

## 3. Results

### 3.1. Descriptive results and correlations

Results shows that job satisfaction mean score was 2.975 (SD=0.61) and work engagement was 38.285 (SD=8.70). SPS scores, the minimum score was 45 and the maximum score was 185. Mean score was 130.293 (SD=23.41). Job satisfaction was positively correlated with UWES (overall) and its three dimensions. It was negatively correlated with HSPS (overall) and EOE (Table 1).

Table 1. Pearson's correlations.

| Variables | HSPS    | EOE      | LST     | AES     | CHA     | UWES    | VIG     | DED     | ABS     |
|-----------|---------|----------|---------|---------|---------|---------|---------|---------|---------|
| HSPS      | —       |          |         |         |         |         |         |         |         |
| EOE       | .912*** | —        |         |         |         |         |         |         |         |
| LST       | .894*** | .725***  | —       |         |         |         |         |         |         |
| AES       | .630*** | .400***  | .465*** | —       |         |         |         |         |         |
| CHA       | .623*** | .532***  | .404*** | .382*** | —       |         |         |         |         |
| UWES      | -.062   | -.168*** | -.082   | .163*** | .125*   | —       |         |         |         |
| VIG       | -.135** | -.235*** | -.136** | .126*   | .029    | .892*** | —       |         |         |
| DED       | -.083   | -.179*** | -.091   | .122*   | .091    | .914*** | .764*** | —       |         |
| ABS       | .054    | -.033    | .009    | .185*** | .213*** | .858*** | .606*** | .679*** | —       |
| SATIS     | -.159** | -.264*** | -.097   | .078    | -.096   | .651*** | .664*** | .626*** | .442*** |

\*\*\*  $p \leq .001$ ; \*\*  $p < .01$ ; \*  $p < .05$

HSPS=high sensory processing sensitivity (overall score); EOE=ease of excitation; LST=low sensory threshold; AES=aesthetic sensitivity; CHA=controlled harm avoidance; UWES=work engagement (overall score); VIG=vigor; DED=dedication; ABS=absorption; SATIS=job satisfaction

### 3.2. Linear regressions and mediation analysis

Job satisfaction was predicted by HSPS ( $r^2=.025$ ;  $t=-3.190$ ;  $p=.002$ ). More specifically, job satisfaction was predicted by EOE ( $\beta=-5.882$ ;  $p<.001$ ) and AES ( $t=3.412$ ;  $p<.001$ ). It also was predicted by work engagement ( $r^2=.423$ ;  $t=-17.006$ ;  $p<.001$ ). More precisely, vigor ( $t=7.878$ ;  $p<.001$ ) and dedication ( $t=4.929$ ;  $p<.001$ ) were found to be predictors ( $r^2=.476$ ) when absorption was not. Work engagement was not predicted by the overall score of HSPS but it was predicted by EOE ( $t=-5.187$ ;  $p<.001$ ), AES ( $\beta=4.135$ ;  $p<.001$ ) and CHA ( $\beta=4.315$ ;  $p<.001$ ) ( $r^2=.133$ ).

The mediation analysis (Table 2) confirms a negative direct effect of both EOE and CHA on job satisfaction. The effect remained significant for the EOE/job satisfaction relationship after the introduction of "vigor" and "dedication" as mediators. However, the effect became positive for the CHA/job satisfaction relationship with these two mediators, whereas the effect of LST disappeared. In addition, indirect effects also appeared between AES and job satisfaction after their introduction.

## 4. Discussion

This study looked at the job satisfaction among speech-language therapists (SLTs). More specifically, the aim was to investigate the role of sensory processing sensitivity (SPS) on this satisfaction through the mediation of work engagement. On the one hand, SLTs reported a fairly high job satisfaction score, confirming the literature for this population (e.g., Ewen, 2021). However, we refute our first hypothesis because HSPS played a negative role in job satisfaction, which is in contradiction with previous results (Evers et al., 2008). Nonetheless, this role depended on the scores obtained on the EOE and AES components. While high scores on the EOE component helped to reduce job satisfaction, high scores on the AES helped to increase it. The same conclusions can be drawn for work engagement, for which CHA also played a positive role. On the other hand, work engagement was found to be a predictor of job satisfaction, confirming the literature (see Yandi et al., 2022). Some components of work engagement (vigor and dedication) were also found to mediate the relationship between job satisfaction

and some components of HSPS (EOE, AES and CHA). The results confirmed the vulnerability role of EOE and the protective role of AES (Bordarie et al., 2021). SLTs with high EOE scores reported lower vigor and dedication scores, which has led to lower job satisfaction scores. While AES was not originally a predictor of job satisfaction, SLTs with high AES scores reported higher vigor, dedication and absorption scores, which led them to report higher job satisfaction scores. The role of CHA confirms the relevance of considering it since it had, surprisingly, a negative influence on job satisfaction. Though this study does not answer the question of whether it is a component or a consequence of SPS, such as a behavioral strategy (Bordarie, 2022).

Table 2. Results of mediation analysis of work engagement between SPS and job satisfaction (all relations have been tested - only significant results are presented).

|                        |   |       |   | Estimate | Std. Error | z value | p      | 95% confidence interval |       |       |
|------------------------|---|-------|---|----------|------------|---------|--------|-------------------------|-------|-------|
|                        |   |       |   |          |            |         |        | Lower                   | Upper |       |
| Direct effects         |   |       |   |          |            |         |        |                         |       |       |
| EOE                    | → | SATIS |   | -.100    | .036       | -2.808  | .005   | -.170                   | -.030 |       |
| LST                    | → | SATIS |   | .068     | .027       | 2.513   | .012   | .015                    | .121  |       |
| CHA                    | → | SATIS |   | -.069    | .026       | -2.663  | .008   | -.119                   | -.018 |       |
| Indirect effects       |   |       |   |          |            |         |        |                         |       |       |
| EOE                    | → | VIG   | → | SATIS    | -.102      | .024    | -4.354 | <.001                   | -.149 | -.056 |
| EOE                    | → | DED   | → | SATIS    | -.069      | .020    | -3.517 | <.001                   | -.107 | -.031 |
| AES                    | → | VIG   | → | SATIS    | .062       | .017    | 3.692  | <.001                   | .029  | .095  |
| AES                    | → | DED   | → | SATIS    | .036       | .013    | 2.790  | .005                    | .011  | .061  |
| CHA                    | → | VIG   | → | SATIS    | .039       | .015    | 2.639  | .008                    | .010  | .068  |
| CHA                    | → | DED   | → | SATIS    | .038       | .013    | 2.998  | .003                    | .013  | .063  |
| Total effects          |   |       |   |          |            |         |        |                         |       |       |
| EOE                    | → | SATIS |   | -.271    | .046       | -5.920  | <.001  | -.361                   | -.182 |       |
| AES                    | → | SATIS |   | .121     | .035       | 3.433   | <.001  | .052                    | .189  |       |
| Total indirect effects |   |       |   |          |            |         |        |                         |       |       |
| EOE                    | → | SATIS |   | -.171    | .032       | -5.361  | <.001  | -.234                   | -.109 |       |
| AES                    | → | SATIS |   | .097     | .024       | 4.058   | <.001  | .050                    | .145  |       |
| CHA                    | → | SATIS |   | .077     | .023       | 3.330   | <.001  | .032                    | .122  |       |

## 5. Conclusions, limitations and perspectives

Despite its overall negative impact on job satisfaction and its lack of influence on work engagement, this study highlights the complex influence of HSPS. The components played either a direct vulnerabilising function (EOE and CHA) or a protective function mediated by the vigor and dedication of work engagement (AES and CHA). However, this study focused on French-speaking female SLTs and, as such, our results cannot be generalized and further investigation must be conducted. We can therefore understand that a high level of SPS can be a resource for people with good management tools. To do this, it is necessary to identify the type of sensitivity in question. For instance, the literature confirms that a problem-focused coping strategy is more appropriate and generally leads to higher levels of job satisfaction (Welbourne et al., 2007). By targeting part of the training at highly sensitive SLTs, through stress management, for example, or by identifying stimuli to be avoided to better control their consequences, the training of SLTs could prepare them for the reality of their professional lives.

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## PROFILES OF PROFESSIONAL IDENTIFICATION IN THE FRENCH PUBLIC SERVICE SECTOR

**Victor Noble, & Evelyne Fouquereau**  
*Université de Tours/QualiPsy, UR1901 (France)*

### Abstract

The scientific literature regularly highlights the growing interest in research on identity issues in organizational studies (e.g., Brown, 2015) and more specifically for identification, presented as a key construct for understanding identity mechanisms (Ashforth, 2016). However, in 2015, Rho and colleagues emphasized the lack of studies on identification in the public sector and nonprofit organizations. Yet, identification constitutes a particularly relevant concept for this professional sector. Firstly, because this sector has a specific set of goals and values (Emery & Martin, 2008). Secondly, because the public sector has been exposed to important reforms in recent decades which may have generated identity shifts (Meyer et al., 2014). Finally, because identification, given its associations with health attributes (Lee et al., 2015) constitutes a fundamental resource for the civil servants who are particularly exposed to stress at work (Douillet, 2017). While many studies have referred to the organization as the target of identification, several scholars remind us that individuals carry multiple identities and that they can thus identify with multiple foci simultaneously (e.g., organization, work team, occupation (e.g., organization, work team, occupation; Miscenko & Day, 2016). Furthermore, considering these different targets allowed to highlight interaction effects between various identifications (e.g., Horton & Griffin, 2017). Therefore, some researchers have used person-centered analysis to establish identification profiles among workers (e.g., Lipponen, 2005). However, these works often focus more on the dimensions of identification rather than the foci (e.g., Yang et al., 2019). Moreover, until now, these studies on identification profiles have remained highly uncommon in nonprofit organizations. The aim of this research was to investigate the distinctive profiles of French public agents based on their levels of identification with many core foci of the public service, namely their respective organizations, work teams, and professions. Data for this cross-sectional study, involved 574 participants and were collected from various French public authorities (i.e., territorial civil service, state civil service and hospital civil service). Latent profile analyses were conducted to examine different agent profiles, revealing three distinct profiles characterized by varying levels and patterns of identification with the three foci as well as an overall identification. This study contributes to a deeper knowledge of French public sector employees and more globally of the mechanisms of identification in the specific public service sector.

**Keywords:** *Professional identification, French public service, latent profiles analysis.*

### 1. Introduction

For some researchers (e.g., Benallah & Domin, 2017; Rivière et al., 2019), the multiple and successive reforms in the French public sector are considered one of the main causes of discomfort and loss of meaning among employees due to the increase in new professional requirements and constraints. Precisely, this particular context, faced by public organizations since the 1980s in most Western countries (Polit et al., 2007) has corresponded to the dissemination of a new managerial doctrine: the New Public Management (NPM, (Abord de Chatillon & Desmarais, 2012). In essence, this involved aligning public sector management practices with those of the private sector, particularly through the implementation of a market-oriented framework and values inspired by the private sector (Emery & Martin, 2008). A few years later, the multifaceted nature of changes and the complexity of reforms led some authors, such as Klenk & Reiter (2019), to use the term post-NPM to characterize the period of hybridization of public organizations observed since the 2000s. According to them, it is characterized by transformations that become more contingent, and the spreading of public management objectives focusing more on efficiency, quality, and accountability.



In this context of confrontation between a traditional Weberian model of public management and that of NPM, and subsequently post-NPM, public sector employees have been faced with continuous and heterogeneous reforms. These changes in the work environment and content raise questions about relationships with the public service, the meaning of work, potential conflicts of values, and more broadly, the structuring of professional identity in this sector.

## 2. Background

In the professional context, identification is predominantly addressed and defined through the lens of organizational identification (Greco et al., 2021; Miscenko & Day, 2016). Most authors who have proposed definitions of the identification in a professional context have, in fact, used the organization as a social reference for individuals (e.g., Dutton et al., 1994; Edwards, 2005). and research on other foci of identification (e.g., team, profession) has commonly relied on adaptations of the conceptualization of organizational identification (Tremblay, 2017). Identification is a fundamental construct for understanding organizational phenomena, as it relates to an individual's visceral sense of unity toward a considered entity and their propensity to integrate the characteristics of this entity into the construction of their own identity (Albert et al., 2000; Ashforth, 2016). These identification processes are likely to vary based on the foci that may combine (Greco et al., 2021). Moreover, the Public Sector presents a distinctive work context concerning the system of representations and values associated with it (Emery & Martin, 2008).

Nevertheless, most of the models tested for this construct have been conducted in samples from the private sector (Rho et al., 2015). Indeed, the particularity of the Public Sector context has rarely been considered in scientific works focusing on identification (Meyer, 2021) and studies on this population have not particularly taken into account the specificities of this context or the multiple foci that may influence individual identity. Several studies, however, have emphasized the importance of simultaneously considering multiple identification foci in an organizational context (e.g., Miscenko & Day, 2016). In complex organizations, such as those rooted in the French public sector (e.g., Departmental Council), there are multiple foci to which employees can attach their identity to. They may identify with the organization as a whole and/or more specifically with certain components of it (Reade, 2001). In fact, the most obvious interest in studying these different foci lies in the analysis of their interactions. Indeed, despite the distinct characteristics of the identification's target, these identification can either combine or conflict with each other (Ashforth et al., 2008). To delve further into these considerations, some research has attempted to examine employees' profiles based on their different levels of identification. Unfortunately, despite recurrent encouragement to use this type of study (e.g., Ashforth et al., 2008, Greco 2021), they remain rare and insufficient to date, given that: (1) they are often based on identification component (e.g., affective, cognitive) rather than foci (e.g., Yang et al., 2019), (2) the number of foci studied simultaneously is very limited, or (3) the statistical methods used to determine profiles exhibited methodological and statistical biases (e.g., Lipponen et al., 2005). It is worth noting that different studies have already highlighted the relevance of establishing profiles, particularly in the context of the Public Service (e.g., Kouadio & Emery, 2017), based on organizational commitment, a conceptually close variable to identification but more comprehensive in assessing the strength of the bond between the individual and the organization than on the specificity of its impact on self-definition (Klein et al., 2012).

Nevertheless, the contribution of these studies lies in highlighting the uniqueness of the Public Service field, whether due to the specificity of possible foci, the predominance of public service values in the employees' identity, or the impact of multiple changes in public management over the past decades on their connection to their work (e.g., Kouadio & Emery, 2017).

## 3. Methods

### 3.1. Participants

The study sample comprised 574 French public agents, with 392 females (68.41%) and 181 males (31.59%), originating from organizations maintaining a minimum workforce of 100 individuals. The average age of the participants was 44.92 years (SD = 10.12; range: 21 to 65 years), their average job tenure was 14.36 years (SD = 10.58) and their average career tenure in the public service was 18.00 years (SD = 10.61). Among the participants, 22.16% (127 agents) worked in the territorial civil service, 39.09% (224 agents) in the state civil service, and 38.74% (222 agents) in the hospital civil service. Regarding employment contracts, 91.62% (525 agents) held permanent positions or their equivalent, while 8.38% (48 agents) were on temporary or equivalent contracts. Lastly, 79.1% (N = 404) were non-managerial employees, while 13.5% (N = 169) held managerial positions.

### 3.2. Measures

The professional identification was assessed using a new questionnaire with 27 items rated on a 5-point scale ranging from 1 (totally disagree) to 5 (totally agree). Allowing the measurement of an individual's level of identification with various foci of their professional environment as well as an overall identification score (Noble & Fouquereau., under submission). *Work team identification* (e.g., *When my work team fails, I feel like I'm failing as well*), *supervisor identification* (e.g., *I could speak about my supervisor and myself in almost the same terms*) and *organizational identification* (e.g., *I could speak about my supervisor and myself in almost the same terms*) were assessed with 9 item each.

### 3.3. Procedure

The questionnaire administration took place online through self-administration over a period of approximately six weeks. Participants were contacted through professional networks. They were informed that participation in this study was voluntary, and responses would remain anonymous.

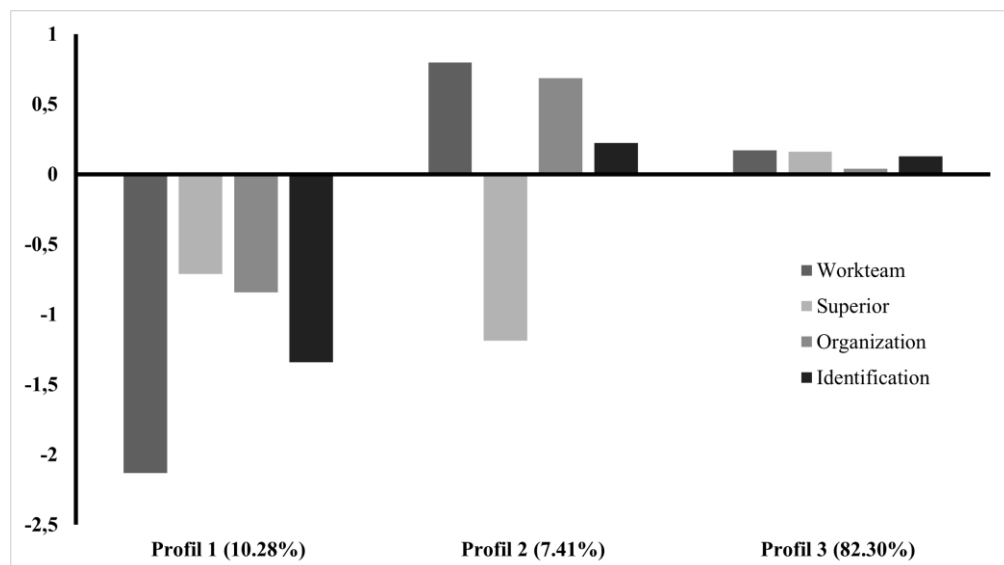
## 4. Analysis and results

The psychometric properties of the multi-item measure were assessed through preliminary factor analysis. The results endorse the superiority of the Bifactor-ESEM solution ( $\chi^2 = 977.112$ , CFI = 0.928, RMSEA = 0.071, SRMR = 0.032) based on fit indices and recommendations by Morin et al. (2020). This solution comprises a global factor and three specific factors corresponding to distinct foci.

The present study utilized the Maximum Likelihood Robust (MLR) estimator in the Mplus 8.9 statistical package (Muthén & Muthén, 2021) for all analyses. To address the sensitivity of Latent Profile Analysis (LPA) to start values, 5000 sets of random start values, each with 1000 iterations, were employed, and final optimization focused on the top 200 solutions. The decision of how many profiles to retain relies on a consideration of whether the profiles themselves are meaningful, aligned with theory, and statistically adequate (Tein et al., 2013).

The examination of solutions revealed that a three-profile solution exhibited superior statistical qualities. Each class has been designed on its unique characteristics. As depicted in Figure 1, Profile 1 (10.28%), labeled as *Low Identification* displays low to very low identification scores across various foci and the general factor compared to the standardized mean. Profile 2 (7.41%), labeled as *Ambivalent Identification* corresponds to individuals exhibiting moderately high identification with the work team and organization, moderate scores on the general factor, and very low identification with the hierarchical supervisor. Finally, Profile 3, labelled as *Normative Identification* corresponds to the largest group (82.30%) and pertains individuals with moderate scores across all foci and on the general factor.

Figure 1. Final Three-Profile Solution.



## 5. Discussion, limitations and future research directions

The present study addressed two identifiable needs in this research field. Firstly, it aimed to deepen the emerging reflections on the specificities of identification within the public service sector, particularly in the French context. Secondly, it responded to the necessity of developing person-centered approaches to study identification phenomena using a bifactorial model in a LPA, aiming to better understand profiles of agents representing specific subpopulations. In this regard, the study distinguished profiles based on the global and specific levels of identification among French public agents (i.e., work team, supervisor, and organization foci).

Nevertheless, the study has several limitations. Firstly, it relies on a scale designed to address the chaos in the scientific literature concerning the conceptualization and operationalization of identification, yet the examination of its psychometric qualities is still underway. Secondly, although the current sample exhibits great diversity in sociodemographic characteristics, some subpopulations are still inadequately represented to study the specificities of agent profiles. Finally, this initial approach remains exploratory, and these preliminary conclusions need confirmation in subsequent studies.

However, this study already raises fruitful heuristic questions that constitute additional avenues for research. Firstly, the question arises regarding the possible generalization of the observed profiles. The complexity of the French public service and its organization into three distinct institutions (i.e., territorial civil service, state civil service, and hospital civil service) with unique culture and context raises questions about the heterogeneity of identification structuring. Indeed, considering variables that may predict the different profiles, whether at the individual level (e.g., public service motivation, managerial status), managerial and organizational practices (e.g., supervisor support, virtuous organizational practices), or organizational characteristics (e.g., reputation, workforce), becomes crucial. Furthermore, while Profiles 1 and 3 show a form of convergence in identification with various foci and overall identification, Profile 2 stands out due to the specificity of low identification with the hierarchical superior. This peculiarity reinforces the research perspective around considering the context, particularly with the consideration of managerial practices as the potential origin of this specific profile. A longitudinal approach would allow studying the stability of profiles over time based on the evolution of managerial practices, such as the implementation of transformational leadership. Finally, determining these profiles constitutes a promising foundation in studying their explanatory power on various behavioral, attitudinal, and health-related indicators. These elements could indeed reveal specific levers of action for public service stakeholders to address identified health and performance challenges to date.

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## BETTER UNDERSTANDING THE WORKERS' PRE-IMPLEMENTATION ATTITUDES TOWARD AN ORGANIZATIONAL CHANGE

**Camille Reculet, & Evelyne Fouquereau**  
*Université de Tours/QualiPsy, UR1901 (France)*

### Abstract

Over the past five years, the covid-19 and the emergence of edge-cutting technologies have led to sudden changes in workplaces worldwide. Consequently, organizational transformations have become essential to adapt to the ever-changing environment. Since the 1950s, organizational changes have been extensively studied and authors have shown that depending on the quality of the implementation, it can be correlated positively or negatively with measures of workers' health, quality of life at work and performance (Rafferty & Jimmieson, 2016). But globally, it has been estimated that 30% of organizational changes fail to reach their goals within the timeframe and means allocated (Michel, Todnem By, & Burnes, 2013). Researchers have underlined the role of employees' attitudes towards change in changes' successes or failures (e.g., Thakur & Srivastava, 2018). They show that the changes supported and endorsed by employees are significantly more likely to have a range of positive outcomes than those met with opposition and resistance. This study aimed at creating a tool based on the *Push, Pull, Anti-push, Anti-pull* model (Mullet at al., 2000) to assess the complex psychosocial motives underlying pre-implementation attitudes toward an organizational change. The 2P2AP model has already been used in professional contexts to predict attitudes toward career transitions such as retirement (Fouquereau et al., 2018) but never to explain individuals' attitudes towards organizational changes. This multidimensional model postulates that individuals' attitudes can be explained by looking simultaneously at four underlying factors: Push and anti-push factors refer to considerations of the *present* situation that lead respectively to positive and negative attitudes toward the new event or situation while pull and anti-pull refer to considerations of the *future* situation that lead respectively to positive and negative attitudes toward it. We used a two-step method to create an *ad hoc* tool. First, an in-depth literature review was made using databases (e.g., Google Scholar, Wiley Open Library) and keywords such as "employees' attitudes" and "organizational change". We then conducted 11 face-to-face semi-structured interviews with questions based on the 2P2AP model. Altogether a set of 48 items was generated, based on the scientific literature and the interviews. This *ad hoc* questionnaire was then administered to 700 French employees of a subdirection undergoing a transformation. An exploratory factorial analysis provided support for the reliability and validity of the four-factor structure of the tool. Using this tool and this model in the future should allow for a better understanding of workers' pre-implementation attitudes toward change.

**Keywords:** *Organizational change, Push Pull Anti-push Anti-pull model, employees attitudes toward organizational change.*

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### 1. Introduction

Organizational changes have been a hot topic in organizational psychology since the mid-20<sup>st</sup> century. From the very first studies conducted by Kurt Lewin (1948) to the meta-analysis published nowadays (Al-Haddad & Kotnour, 2015), two similar observations remain: First, organizational change is an inevitable process for any organization that wishes to survive and second, these changes represent high-risk, precarious phases. Indeed, although the topic has been researched for decades, implementation in the fields is not a seamless process. Globally, it has been estimated that 30% of organizational changes fail to reach their goals within the timeframe and means allocated (Michel, Todnem By, & Burnes, 2013). It has also been shown that when poorly implemented, organizational changes can lead to a wide range of negative consequences for employees and companies such as employees' deterioration of health and quality of life at work and a decrease in companies' global performance (Rafferty & Jimmieson, 2016; Wisse & Sleebos, 2016). On the other hand, a well-implemented organizational change could lead to

better interpersonal relationships, better support among colleagues and better global performances (Long et al., 2008; Sykes, 2015).

Over the last decades, an important field of the organizational change literature has focused on the part of employees' attitudes and behaviors in such contexts. It has been shown that employees' adherence or refusal of change is a primary factor of success or failure (Chiaburu et al., 2022; Thakur & Srivastava, 2018). Workers' attitudes toward change have also been shown to be not only an antecedent to change success but also a mediator explaining the relationship between change success and several antecedents such as leadership practices or quality of communication (Peng, Li, Wang & Lin, 2020). As it has been proven that individual positive attitudes toward change lead to implementation success, authors are also aiming at identifying antecedents to these attitudes toward change. Marinova et al. for example put to light a positive correlation between enriched job characteristics (autonomy, job complexity and task significance) and change oriented behavior on the one hand and a negative correlation between unenriched job characteristics (routinization and formalization) and change-oriented behavior (2015). Different processes have also been underlined as major antecedents to positive attitudes toward change such as clear communication or co-construction of the change project (Oreg, Vakola & Armenakis, 2011; Choi, 2011). The roles played by several major antecedents has been studied extensively. However, the complexity of the subjective psychological reasons underlying these antecedents has not been considered through the lens of an integrative model.

Our study aimed at using the *Push, Pull, Anti-push, Anti-pull* model (Mullet et al., 2000) to shed light on the complexity of the reasons underlying the various attitudes toward an organizational change. This multidimensional model postulates that individuals' attitudes can be explained by looking simultaneously at four underlying factors:

- Push refers to considerations of the present situation that are viewed as repelling and therefore lead to positive attitudes toward the future situation.
- Pull refers to considerations of the future situation that are viewed as appealing and lead to positive attitudes toward the future situation.
- Anti-pull refers to considerations of the future situations that are viewed as repelling and therefore lead to negative attitudes toward the future situation.
- Anti-push refers to considerations of the present situation that are viewed as appealing and therefore lead to negative attitudes toward the future situation.

This model has been used in professional contexts to predict for example attitudes toward career transitions such as retirement (Fouquereau et al., 2018) but never to explain individuals' attitudes towards organizational changes. Thus, the aim of our research was to develop a new instrument to assess the complexity of the reasons underlying workers pre-implementation attitudes toward change, based on the 2P2AP model (Mullet et al., 2000). The first study's goal was to create a pool of items intended to constitute the frame of our *ad hoc* scale for subsequent testing. The second study involved a test of the factor structure and the construct validity of the items among a pool of 700 French employees.

## 2. Study one: Item screening and development

### 2.1. Method

This study was conducted in a subdirection of a telecommunication company, in France. This subdirection composed of 3760 people was about to undergo a major internal restructuring. Departments and teams were going to be split up and reorganized in a different, more centralized way. In order to generate items to elaborate an *ad hoc* questionnaire for this context, we combined two approaches. First, following Hinkin's guidelines regarding validation studies, we performed a systematic literature review to list the psychological reasons underlying attitudes toward organizational change, using databases such as Google Scholar, Wiley Open Library or PsycNet (1998). Keywords used were "employees' attitudes", "organizational change", "attitudes toward change" or "organizational transformation". Then, we conducted a series of face-to-face, semi-structured interviews with 11 employees of the subdirection.

Interview questions were based on the 2P2AP model: (1) "Regarding the present situation, what leads you to be favorable to the future transformation?"; (2) "Regarding the present situation, what leads you to want to maintain this current organization?"; (3) Regarding the transformation, which aspects do you find appealing?"; (4) Regarding the transformation, which aspects do you consider problematic?". The interviews lasted approximatively an hour each. Interviewees were asked to answer freely to the four questions. Follow up questions were sometimes added to prompt participants to give more detailed answers.

## 2.2. Population

11 employees (8 men, 3 women) were interviewed to collect data about the motives behind their attitudes toward the organizational change to come. Their ages ranged from 26 to 60 years old ( $M_{years} = 46,18$  years old;  $SD_{years} = 9,89$ ). They worked in 7 different entities out of 11 in total.

## 2.3. Analysis and results

To begin with, a set of individual psychological reasons underlying attitudes toward change (i.e., manager support) was identified from the literature review. Then, each interview was scanned to identify reasons underlying attitudes toward change in this particular context. Combining extracts from the interviews and inputs from the literature review, fifty-seven items were generated. Thirteen items seemed to be related to the push factor (e.g. “*In the current organization, I feel like my role isn’t clear enough*”); 12 items seemed to refer to the Pull factor (e.g. “*In the future organization, I hope to gain new job opportunities*”); 12 items seemed to refer to the Anti-push factor (e.g. “*In the current organization, I like the autonomy I have*”); and 20 items seemed to refer to the Anti-pull factor (e.g. “*In the future organization, I worry that I may not get the recognition I deserve*”). All items were echoing topics mentioned in interviews and their relevance with the topic of organizational change was confirmed by the scientific literature.

Clark & Watson’s guidelines were followed to ensure clarity and precision of the items (1995). All 57 items were then presented to a new set of ten employees, during a new set of interviews. Each participant was asked to point out which of the following items they found unclear or difficult to understand. For each item that was flagged, the interviewer asked follow-up question such as “What do you find unclear about this item?”, “Do you have suggestions to make it clearer?”. Using these feedbacks, minor changes were made to some of the items, either to improve the phrasing or to use a lingo closer to the companies’ culture (e.g., “*entities*” was replaced by “*teams*”; “*change*” and “*organizational change*” were replaced by “*transformation*”). Several items were deleted because they were redundant (e.g. “*I feel like I work efficiently because in the current organization, I belong to the same team as the people I must collaborate with*” = “*In the current situation, I feel like collaboration is facilitated by the fact that people working together belong to the same teams*”). In the end, 48 items were kept and constituted the initial version of this *ad hoc* scale.

## 3. Study two: Initial content validity

### 3.1. Method

The goal of this second study was to test the factorial composition of the scale. To do so, the scale was sent to the 3760 employees.

**3.1.1. Population.** Among the 3760 employees, 700 employees answered the questionnaire (18,62%). Among them, 526 participants were men (75,14%) and 174 were women (24,86%). The average age was 47,03 years old ( $SD = 10$ ). The average seniority in the company was 21,2 years ( $SD = 13,24$ ), the average seniority in the department was 7,76 years ( $SD = 6,33$ ) and the average seniority on their current position was 5,39 years ( $SD = 4,93$ ). Historically, the company we conducted the study in was a public service. Over the last 30 decades, it transitioned to being mostly privately owned. Among the respondents, 195 still had a civil servant status (27,86%) and 505 (72,14%) were private-sector employees. Finally, 102 respondents (14,57%) occupied a management position.

**3.1.2. Measure.** The participants answered the 48 items from the 2P2AP scale. The instructions were worded as follows: “Regarding each of the following reasons, how much would you say each of them impacts your attitudes toward the ongoing transformation?” (1 = It doesn’t impact my attitudes toward the transformation at all; 5 = It heavily impacts my attitudes toward the transformation).

### 3.2. Analysis and results

In accordance with Tabachnick and Fidell’s (2013) recommendations, we started by checking for outliers, univariate (i.e.,  $|z| < 3.29$ ,  $p < .001$ , two-tailed test). None were found. We then performed an exploratory factorial analysis on the 2P2AP 48 items. Since we cannot rule out the fact that some of the four factors may be correlated, as proven in other contexts, we used an oblimin rotation (Chevalier et al., 2013; Fouquereau et al., 2018). The initial solution identified was composed of 8 factors with eigenvalues over 1 and explained 59,8% of the variance. Following Boateng’s guidelines, we erased items that weren’t loading on any factors as well as those that were cross loading (2018). We obtained a four-factor model composed of 27 items, which explained 57.03% of the total variance. Finally, we removed four

items that had the weakest loadings. The final four-factor model explained 59,77% of the total variance for the 23 items. As advised by Tabachnik & Fidell, all item's loadings were over .32 (2013).

An examination of the interpretability of the factors showed that the first factor matched the Anti-pull dimension. It was composed of 8 items with loadings ranging from .63 to .73. (e.g., “*After the transformation, I fear that the organization won't be efficient in terms of client satisfaction*”). The second factor corresponded to the Pull dimension. It was composed of 6 items with loadings ranging from .61 to .80 (e.g., “*After the transformation, I hope collaborating with other employees will be easier as we will be united in the same team*”). The third factor matched the Anti-push dimension. It was composed of 5 items with loadings ranging from .56 to .79 (e.g., “*Currently, I appreciate the diversity of my missions on my position*”). Finally, the fourth factor corresponded to the Push dimension. It was composed of 4 items with loadings ranging from .48 to .70 (e.g., “*Currently, I don't always know what is expected of me, in my job*”).

#### 4. Discussion and conclusion

The role played by workers' attitudes toward change in the success and failure of an organizational transformation implementation is widely documented (Oreg, Vakola, & Armenakis, 2011). But while many elements were shown to play a role in the rise of attitudes toward organizational change, it still seemed important to analyze some of them in a deeper manner. Thus, we aimed to understand how, at medium term, different individual motives interact with each other to explain the rise of several attitudes toward change rather than evaluating their role one by one. To reach this goal, we developed in the present study a new instrument based on the 2P2AP model (Mullet et al., 2000). To date, this questionnaire is the first one to provide practitioners with an overall view of the motives, which can lead employees to be psychologically ready to accept or not an organizational change. More globally, our approach helped demonstrating the complexity that characterizes the psychosociological factors underlying individual pre-implementation attitudes toward organizational change.

Thus, it shows the relevance of the 2P2AP model to enrich the knowledge in this research area. Indeed, authors have to date only examined isolated factors and have not used an integrative framework to better understand employees' attitudes toward organizational changes. Future studies are underway to examine how these motives work together and to assess the percentage of variance explained by these psychosociological dimensions beyond the one explained by other factors such as organizational characteristics.

Moreover, as of now, the creation of this *ad hoc* scale should allow companies and counselors for more specific interventions, that would cater specifically to the type of factors at play. For example, a negative attitude explained by the prevalence of Anti-pull reasons, such as the fear of endorsing a new role may benefit from being addressed specifically, differently from a negative attitude explained by the attachment to one's previous team. In the first case, efforts could be made to highlight the attractive and the positive aspects of the new role, while in the second case, communicating about the shortcomings of the previous situation and the necessity to have it evolve would be more appropriate.

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## EXPLORING THE REPRESENTATIONS OF DISABLED WOMEN USING THE REPERTORY GRID TECHNIQUE

Amy Camilleri-Zahra<sup>1</sup>, Mary-Anne Lauri<sup>2</sup>, & Gottfried Catania<sup>2</sup>

<sup>1</sup>*Department of Disability Studies, University of Malta (Malta)*

<sup>2</sup>*Department of Psychology, University of Malta (Malta)*

### Abstract

This study aimed at exploring the representations of disabled women held by disabled women themselves. Most of the literature available explores the representations of disabled people held by non-disabled people. However, this study aimed to fill a gap in the literature by shedding light on how disabled women are viewed by other disabled women. This study is underpinned by social representations theory, intersectionality theory and the social model of disability. The way disabled women are treated often stems from the representations held about them by society, including other disabled women. The understanding of the representations of disabled women can have significant implications for activism by disabled women. This understanding is also important for the drafting of policies and the development of services aimed at addressing the needs of disabled women. Participants were recruited via a voluntary database of disabled people held by the Commission for the Rights of Persons with Disability. The repertory grid technique was used to collect data from 14 disabled women aged between 28 and 63 years old. The constructs yielded from the repertory grid technique were analysed using an adaptation of the core-categorisation method. The constructs were grouped under three themes, which are: The Power of First Impressions, A Part of One's Identity, and The Dichotomy of Career and Family. This study shows that the disabled women who took part in this study care about body image and fashion, do not think that the impairment represents disabled women's entire identity, and that having a career is important.

**Keywords:** *Disabled women, social representations theory, intersectionality, social model of disability, repertory grid technique.*

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### 1. Introduction

The representations that society has of disabled women have implications and consequences that can be pervasive and can greatly impact their lives in a number of tangible ways (Soorenian, 2014; Wilde, 2022). I have decided to focus specifically on social representations because the marginalisation of disabled people has often been addressed through sociological or legislative processes, but very rarely through social psychological processes. I have decided to specifically focus on disabled women because their experiences have often been overlooked by researchers and policymakers (Council of Europe, 2022; Soorenian, 2014). Disabled women are still at a disadvantage when compared to disabled men and non-disabled women and men in a number of areas including education, employment, harassment, and family life (Kim, Skinner, & Parish, 2020; Krnjacki, Emerson, Lewellyn, & Kavanagh, 2016).

This qualitative study is underpinned by three theoretical frameworks, namely, social representations theory, intersectionality theory, and the social model of disability. Moscovici (1973, 1984) defined social representations as a system of values, ideas, and practices which provide a coherent order for phenomena. This system has a two-fold function. Firstly, social representations establish an order which enables individuals to orientate themselves with the tangible and intangible aspects of the world they live in (Vaughan & Hogg, 2014). Secondly, social representations are the tools which enable members of a community to communicate with each other. The term *intersectionality* was coined by Crenshaw (1989, 1991) and is defined as being a simultaneous member in multiple social categories due to which one may experience negative discrimination or reinforced marginalization. The approach of intersectionality posits that different minority statuses must be examined simultaneously in order to be able to reach an understanding of the *whole* experience rather than viewing them as separate identities and trying to understand which identity contributes to oppression the most (DeFilippis, 2015). This study is also underpinned by the social model of disability which makes a very clear distinction between the

definitions of *impairment* and *disability* (Oliver, 1990). The social model identifies the social and political domains as the primary causes of disability for disabled people (Smith, 2008).

## 2. Method

### 2.1. The repertory grid technique interview

The repertory grid technique was considered as the right choice to collect data for this study because it enabled me to understand how the participants make sense of other disabled women (Fransella, Bell, & Bannister, 2004). Kelly (1955/2002, 1963) posited that individuals understand themselves, other people, and the events happening around them according to their own frame of reference which is derived from their upbringing and experiences. This knowledge about the world is stored in what he terms personal constructs (Kelly, 1955/2002, 1963). A repertory grid technique interview consists of a three-step process. These are: (i) element selection, (ii) construct elicitation, and (iii) linking the elements with the constructs (Fransella et al., 2004; Jankowicz, 2004). In this case the elements are the disabled women that the participants know personally or know of. The constructs are the ‘adjectives’ elicited from the participants to describe other disabled women using the triadic sort method. The constructs are then linked to the elements by means of a rating procedure such as a 5-point Likert scale. In this study, a maximum of thirteen constructs and a minimum of five constructs were yielded from the interviews.

### 2.2. The participants

Participants for the repertory grid interviews were recruited through a voluntary database of disabled people held by the Commission for the Rights of Persons with Disability (CRPD). The inclusion criteria for participating in this study required that participants be of the female sex, living in Malta and that they have a physical or sensorial impairment. In all, 14 participants participated in the repertory grid technique interviews. Table 1 describes the demographics of the fourteen participants who took part in this phase of the study.

*Table 1. Demographics of the Participants for the Repertory Grid Interviews.*

| Pseudonym | Age | Occupation              | Type of Impairment or Condition         | Congenital/ Acquired Impairment |
|-----------|-----|-------------------------|---|---------------------------------|
| Violet    | 53  | Higher Education        | Mobility impairment                     | Acquired                        |
| Mary      | 33  | Public Sector           | Mobility impairment                     | Congenital                      |
| Sue       | 30  | Public Sector           | Visual impairment                       | Congenital                      |
| Rita      | 51  | Public Sector           | Mobility impairment                     | Congenital                      |
| Ylenia    | 44  | Higher Education        | Chronic illness                         | Congenital                      |
| Vanessa   | 28  | Accountant/ Swimmer     | Mobility impairment                     | Acquired                        |
| Miriam    | 42  | Education               | Hearing impairment                      | Acquired                        |
| Lara      | 45  | Translation Service     | Mobility impairment and chronic illness | Congenital                      |
| Ivy       | 36  | Trainee Psychotherapist | Chronic illness                         | Acquired                        |
| Heather   | 40  | Boarded Out             | Mobility impairment and chronic illness | Acquired                        |
| Maya      | 33  | Full-time mum           | Hearing impairment                      | Acquired                        |
| Christine | 38  | Administration          | Mobility impairment and chronic illness | Congenital and Acquired         |
| Ruth      | 30  | Unemployed              | Mobility impairment                     | Congenital                      |
| Davina    | 63  | Retired                 | Mobility impairment and chronic illness | Acquired                        |

### 2.3. Analytic strategy for the repertory grid data

The fourteen interviews carried out with disabled women living in Malta resulted in a total of 129 constructs. For the purpose of analysis, the emergent and the opposing poles were considered separately, thus resulting in 258 constructs. An adaptation of the core-categorisation method of analysis as described by Jankowicz (2004) was used to analyse the adjectives. All 258 adjectives were written down on separate cards and placed on a large table. The 258 adjectives were reduced to 182 unique adjectives by grouping together the duplicate ones. Similar adjectives were then grouped under a category. When a new category was created, some existing categories were redefined. The process of categorisation continued until almost all the adjectives had been classified. Twenty-one adjectives were deemed unclassifiable and these were grouped under the category ‘miscellaneous’.

### 3. Findings and discussion

The 182 unique constructs elicited from the participants were grouped under three categories. These are: (i) The Power of First Impressions, (ii) A Part of One's Identity and (iii) The Dichotomy of Career and Family.

#### 3.1. The power of first impressions

Body image, physical appearance and fashion are of importance to the disabled women taking part in this study. The participants used constructs like “physically beautiful”, “looks healthy”, “well dressed”, “frumpy”, “fashionable” and “unkept” amongst others, to describe other disabled women they knew. Miriam described these disabled women as, “...they [other disabled women] make an effort, they look good, they go to a beautician. They don't conform to the usual 'disabled' image of looking sick and scruffy”. Heather argues that looking good is important and said, “...she [disabled woman] looks good, it shows that she takes the time to groom herself and takes care of herself, it shows, because she always looks good when we meet”. Similarly, Christine with reference to another disabled woman she was describing, claimed, “...she colours her hair and puts on some make-up and this is good. She does not fit with the usual stereotype of disabled because people assume that if you are disabled you are not interested in how you look”. These constructs are in stark contrast to the general idea amongst non-disabled people that disabled women are not interested in the way they look and the image their body portrays (Garland-Thomson, 2011, 2017). The reason for such positive constructs amongst the participants could be that they have a positive representation of themselves which is then reflected in their peers and vice-versa. Access to more positive representations of disability and disabled women on social media could have also influenced these positive constructs elicited from the participants. This could also be stemming from the more diverse and inclusive fashion content available on social media through a number of disabled influencers who have a high following reaching into the thousands. The strong interest in fashion shown by the participants in this study is also in line with the very recent vision of inclusion being taken on by a number of fashion retailers who have recently all included disabled models in their advertisements and fashion campaigns (Foster & Pettinicchio, 2022).

The participants also adopted very specific constructs related to body weight to describe other disabled women. The participants were not evasive in this aspect and used adjectives such as “fat” and “thin” to describe other disabled women's body weight. Ruth said, “...I would describe her as fat. She is not average but rather fat”. Whereas Ivy, in order to explain her construct further claimed, “...she looks healthy, even her body weight, it shows that although she has a mobility impairment and a chronic condition that she has to deal with, she looks healthy, her bodyweight looks healthy”. The reason for striving for an acceptable body weight amongst disabled women could be because, similarly to non-disabled women, disabled women might also equate being thin with physical attractiveness. For disabled women having an acceptable body weight could also be related to ‘passing as normal’, that is, as ‘less disabled’ and as a way of fitting in (Roosen & Mills, 2016).

#### 3.2. A Part of one's identity

Some of the participants used constructs such as “regressing disability”, “visible disability” and “acquired disability” to describe the other disabled women they knew. In order to explain her choice of construct related to the other disabled women's impairment, Ruth claimed, “I am finding myself judging the other disabled women solely on their disability whilst I know that they [the other disabled women] are more than their independence but somehow the disability still stands out”. This theme shows that the participants felt that it was important to describe other disabled women according to the type of impairment and the state of their body. The reason for this could be because the participants consider the other disabled women's impairment, and probably also their own, as part of their identity. Another reason for choosing to describe other disabled women according to their type of impairment could also be because like the rest of society the participants could have also been influenced to believe that there was only one type of body and that is ‘the able body’ – a body free of impairment. Through their choice of constructs, the participants in this study acknowledge that the disabled women they were asked to think about have a body which differs from ‘the able body’.

The participants also made the distinction between “invisible disability” and “visible disability”. Mary explained her choice of construct “visible disability” by saying, “...her [for another disabled woman] impairment cannot really be hidden, you see it, it's always there, she has to carry it wherever she goes”. Whereas Rita explained her construct “invisible disability” by saying, “...their [for other disabled women] impairment doesn't show so sometimes other people assume that it's not true that they can't hear, this can sometimes create problems.” The distinction between invisible and visible disabilities is a relatively recent concept both at legislative level as well as in research and in disability studies literature.

For a long time, the work by a number of disability activists focused only on visible impairments because invisible impairments tend to present a unique challenge due to the fact that they cannot be seen and so they are easier to discount (Mintz, 2015). In contrast to this, the disabled women taking part in this study showed that they are knowledgeable about the existence of hidden impairments and had no issues with using such specific constructs to describe other disabled women.

### 3.3. The dichotomy of a career and a family

A large number of constructs in this category were related to disabled women's educational achievements such as "academically accomplished", "academically driven", "ambitious" and "intelligent". These constructs show that education holds a pivotal role in the lives of the participants taking part in this study and in the lives of the disabled women they knew. Ylenia referred to these women as the ones who, "...inspire me, they're thinkers and they have achieved so much academically". Another big number of constructs in this category were related to disabled women's advancement in their careers such as "career driven", "hardworking", "successful" and "work driven". Miriam explained her construct by saying, "...she had done well at school and went on to have a successful career. She was able to do this because of her resilience and the support available. But she also knew how to look for support".

These constructs show that having a successful career is deemed equally important both for the participants and the other disabled women who they knew. The strong use of constructs related to education and employment is a very positive finding since education for disabled women has not always been encouraged. For a long-time disabled women were perceived as low-achievers without any strong prospects for a successful career (Nosek, 2012).

Notwithstanding the importance given to education and a career by the participants, during the interviews some participants came up with a career or education related construct in direct comparison to a family related construct, revealing a strong dichotomy between the two. Examples of these directly opposing comparisons include, "career-oriented vs motherly" (Ylenia) and "home maker vs career driven" (Mary). This dichotomy shows that for some disabled women having both a career and a family is still perceived to be unattainable. The number of constructs related to motherhood were also very few in comparison to the number of constructs related to educational achievements and career advancement. The reason for the lack of family related constructs in comparison to the number of other constructs could be because unlike non-disabled women for whom motherhood is oftentimes viewed as the most natural thing to do, disabled women have often been discouraged from having a family of their own (Heideveld-Gerritsen et al., 2021).

## 4. Recommendations and conclusion

Through this study I was able to provide insights on how disabled women view other disabled women. Through this study I was able to give a voice to disabled women. In conclusion, the results of this study point to three important findings. Disabled women care about looking good and about fashion. A second important finding is that although the impairment may be congenital, acquired, visible or invisible, it is part of one's identity and disabled women are not afraid to take their impairment in their stride and strive for greater things. The third and final finding is that disabled women in this study believe that having a career is very important but that having a family or both a career and a family for disabled women remains a challenge.

Further research with other groups of people would give a clearer picture of the representations of disabled women. Research investigating the representations of disabled women amongst professionals such as healthcare professionals and educators, amongst others is essential since such representations may have a strong impact on the everyday lives of disabled women.

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## EXPERIENCING ORGANIZATIONAL CHANGE AT UNIVERSITY: THE ROLE OF PERSONAL AND JOB RESOURCES

**Kristina Kovalcikiene, Aurelija Stelmokiene, Loreta Gustainiene,  
& Giedre Geneviciute-Janone**

*Department of Psychology, Vytautas Magnus University (Lithuania)*

### Abstract

Globalization, emigration, demographic decline, national reforms of higher education and other factors often lead to changes in universities. University employees inevitably experience anxiety due to uncertainty related to those changes. It is suggested that negative personal and work-related outcomes could be buffered by positive characteristics, both work-related and personal. Therefore, it is very important to find out the safety factors that could help to deal with large-scale organizational changes, here both job and personal resources of employees should be considered. The purpose of this paper is to identify personal and work-related factors that have significant predictive value for university employees' anxiety about organizational change. 451 Lithuanian university employees (31% males and 67% females) filled up a self-administered questionnaire. Using a variety of world-recognized measurement tools, the employees' personal and job resources were assessed. For this study the anxiety about change scale was developed by the authors (Cronbach alpha = .84). The study was conducted at a time when researched universities experienced significant organizational changes (integration of several universities) related to national reform of higher education. The results of the study revealed that job resources (such as influence at work) and personal resources (such as employee optimism and professional identity) significantly predicted university employees' anxiety about organizational change. Having more influence at his/her work and being more optimistic was related to less anxiety about organizational change. Conversely, more expressed professional identity was related to higher concerns about the changes that are taking place at the university. The results of the study also revealed that employees' work experience and position (academic or non-academic) were also associated with their anxiety about organizational change. Recommendations regarding strengths as well as improvements for universities during the period of organizational change are proposed.

**Keywords:** *Organizational change, anxiety, university, personal resources, job resources.*

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### 1. Introduction

In nowadays, universities are facing many significant changes (Mäkikangas, Mauno, Selenko, Kinnunen, & Mäkikangas, 2019; Stage & Aagaard, 2019). Universities require to exhibit organizational change for adapting the rapid changes around them (Eroğlu & Alga, 2019), because internal and external factors affect their longer-term financial sustainability (Rogers, 2019).

When dealing with large-scale changes in an organization, employees inevitably experience anxiety due to the uncertainty associated with those changes. When encountering crisis, confusion, and difficulties, both individuals and organizations can suffer from anxiety-related problems (Baruch & Lambert, 2007). Marshak (2016) emphasizes that implication of too much anxiety to organization change leads to psychological threats of anxiety condition, and plays the role in the organization development. Moreover, change within a university is further complicated by context (Usunier & Squires, 2019). Thus, it is very important to find out factors that could help to reduce anxiety regarding organizational change.

According to the Job Demands–Resources theory, it is suggested that negative outcomes could be buffered by positive characteristics, both work-related and personal (Bakker & Demerouti, 2018; Tremblay & Messervey, 2011). This study aims to identify personal and job resources that have significant predictive value for university employees' anxiety about organizational change.

*Job resources* are defined as certain (social, psychological, organizational) aspects of work that promote employee development, reduce the negative impact of high work demands, and help achieve goals within the unit or organization (Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2007; Bakker

& Demerouti, 2018). Research findings indicate that job resources are related to employee well-being and have an impact on performance (Bakker & Demerouti, 2018; Huang, Yin, & Lv, 2019). In the scientific literature, job resources are generally divided into three levels: work/task-related, interpersonal relationships, and organization-related. Therefore, in order to evaluate job resources, those levels were chosen and more detailed in the next section.

*Personal resources* refer to positive characteristics what an employee brings to the organization and develops through their work tasks and being a member of the organization. Resent findings in university context emphasizes that personal resource factors influence university employees' perceptions and reactions to organizational changes (Mäkikangas et al., 2019). Personal resources are an important element determining the result of the change process (Eroğlu & Alga, 2019). As personal resources, psychological capital components, such as self-efficacy and optimism, are the most frequently mentioned in the literature and most relevant to the various work processes and outcomes (Carver, Scheier, & Segerstrom, 2010; Yin, Huang, & Lv, 2018). Also, basic psychological needs (autonomy, competence and relatedness) satisfaction at work is necessary to achieve and maintain autonomous motivation, high-quality performance and well-being (Deci, Olafsen, & Ryan, 2017). Furthermore, context-specific personal resource is the professional identity phenomenon which is related with various positive processes and outcomes in higher education, as quality of teaching, work efficiency, job satisfaction, self-confidence, motivation, occupational commitment, psychological well-being, etc. (Canrinus, Helms-Lorenz, Beijgaard, Buitink, & Hofman, 2012; Skinner, Leavey, & Rothi, 2019; Xu, 2019).

## 2. Methods

### 2.1. Sample and data collection

451 Lithuanian university employees (31% males and 67% females) participated in a cross-sectional on-line survey. The sample consisted of 257 (57%) academic staff, 99 (22.0%) non-academic staff, and 91 (20.2%) worked in both positions. The average age of participants was 45.32 years (SD = 11.39). The average of work experience at present organization was 14.81 (SD = 9.98). Respondents participated voluntarily and the confidentiality were guaranteed. The response rate was 23.31. The study was conducted at a time when researched universities experienced significant organizational change.

### 2.2. Measures

The employees' personal and job resources were measured using a variety of world-recognized measurement tools. Job resources included: peculiarities of work (influence, professional development, meaningfulness of work, clarity of role), interpersonal relationships (social support from colleagues, community, horizontal trust), and leadership/management (social support from manager, recognition, communication, vertical trust, justice). Personal resources included: occupational self-efficacy, professional identity (teacher, researcher, practitioner), optimism and basic psychological needs (competence, autonomy, connectivity). The anxiety about change scale was developed by the authors for this study. Detailed information about the instruments used in this study is presented in Table 1.

*Table 1. Information about the survey instruments.*

| Variable                       | Instrument  | Instrument's authors                               | Items | Cronbach alpha |
|--------------------------------|---|--|-------|----------------|
| <b>JOB RESOURCES:</b>          |   |  |       |                |
| Influence at work              | Copenhagen Psychosocial Questionnaire (COPSOQ II) | National Centre for the Working Environment (2007) | 4     | .803           |
| Professional development       |   |  | 4     | .787           |
| Meaningfulness of work         |   |  | 3     | .848           |
| Clarity of role                |   |  | 3     | .827           |
| Social support from colleagues |   |  | 3     | .866           |
| Community                      |   |  | 3     | .908           |
| Horizontal trust               |   |  | 3     | .834           |
| Quality of leadership          | Short version of Managerial Practices Survey      | Yukl (2012)  | 4     | .938           |
| Social support from manager    | Copenhagen Psychosocial Questionnaire (COPSOQ II) | National Centre for the Working Environment (2007) | 3     | .938           |
| Recognition from manager       |   |  | 2     | .892           |
| Vertical trust                 |   |  | 3     | .687           |
| Communication                  |   |  | 2     | .804           |
| Organizational justice         |   |  | 4     | .878           |
| <b>PERSONAL RESOURCES:</b>     |   |  |       |                |



|   |   |   |    |   |
|---|---|---|----|---|
| Self-efficacy at work   | Occupational Self-efficacy Scale  | Rigotti et al. (2008)   | 6  | .843  |
| Basic needs (competence, autonomy, connectivity) satisfaction at work | Basic Psychological Need Satisfaction and Frustration Scale – Work Domain | Chen et al. (2015)  | 12 | competence – .847; autonomy – .798; connectivity – .887       |
| Professional identity*  | Short version of the Professional Identity Questionnaire*                 | Kovalcikiene (2014)   | 16 | .846; researcher – .987; teacher – 0.846; practitioner – .979 |
| Optimism  | Life Orientation Test Revised   | Herzberg, Glaesmer, and Hoyer (2006)                                  | 6  | .743  |
| <b>ANXIETY ABOUT CHANGE:</b>  |   |   |    |   |
| Anxiety about change in higher education                              | Anxiety about Change in Higher Education Scale                            | Genevičiūtė-Janonė, Gustainienė, Stelmokienė, and Kovalčikienė (2018) | 5  | .840  |

Note: \* completed only by academic staff (N = 257).

Anxiety about change was assessed by asking respondents to respond on a 5-point Likert scale to how strongly they are concerned about certain aspects of organizational change in higher education, which include: ongoing educational reform in the country, integration of universities, structural change at the university (e.g., reorganization of units), changing job requirements (e.g., teaching quality, academic output, workload), and student-related change (e.g., student numbers, motivation, teaching expectations).

### 3. Results

This study aims to reveal whether and to what extent university employees are concerned about change at national and organizational levels, and what job and personal resources contribute to overcoming them. First of all, the analysis was carried out to determine the prevalence of anxiety about organizational change, as well as differences by socio-demographic characteristics among university employees in Lithuania. Finally, the results of regression analysis are presented.

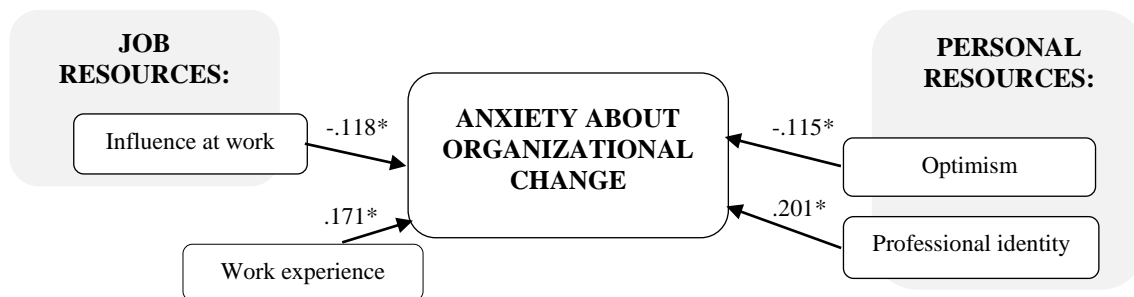
The results revealed that university employees are experiencing strong anxiety about change (overall:  $M = 3.95$ ,  $SD = .81$ ). They are most anxious about ongoing educational reform in the country ( $M = 4.12$ ,  $SD = 1.01$ ). Other aspects of anxiety include: structural change at the university (e.g., reorganization of units) ( $M = 3.94$ ,  $SD = 1.03$ ), integration of universities ( $M = 3.92$ ,  $SD = 1.07$ ), changing job requirements (e.g., teaching quality, academic output, workload) ( $M = 3.81$ ,  $SD = 1.09$ ), changes related to students (e.g., number of students, motivation, expectations for teaching) ( $M = 3.81$ ,  $SD = 1.09$ ).

In order to reveal the peculiarities of anxiety about organizational change among university employees, the differences according to the socio-demographic characteristics were analyzed. No gender differences were found. Significant differences were indicated between academic and non-academic staff. Using ANOVA analysis of variance, the research data revealed that academic staff are more concerned about changes in overall ( $F = 5.512$ ,  $p < .01$ ). When analyzing individual aspects of anxiety about change, academic staff were found to be significantly more worried about ongoing education reform in the country ( $F = 7.944$ ,  $p < .001$ ), as well as changing job demands ( $F = 8.720$ ,  $p < .001$ ) and changes related with students ( $F = 8.923$ ,  $p < .001$ ).

Correlation analysis (using Pearson coefficient) revealed that employees with higher work experience at university are more concerned about ongoing education reform ( $r = .193$ ,  $p < .001$ ) and university mergers ( $r = .176$ ,  $p < .001$ ). Also, employees with higher work experience feel more anxious about changing job demands ( $r = .107$ ,  $p < .05$ ) and changes related with students ( $r = .100$ ,  $p < .05$ ).

Linear regression analysis using Enter method was conducted to determine which factors predict anxiety about changes in university among employees. Job resources, personal resources and socio-demographics were entered the model as predictors. The regression analysis revealed that regression model was statistically significant ( $F = 3.368$ ,  $p < .001$ ), and all significant predictors together explained 15.8 percent of anxiety about organizational change variance. The analysis of the results shows that job resources and personal resources are important criteria in the case of organizational change. When employees feel more influenced in the performance of their work activities and are optimistic, their anxiety about change tends to decrease. Meanwhile, stronger identification with one's professional role as a lecturer, researcher or practitioner tends anxiety about change to increase (see Figure 1).

Figure 1. Job and personal resources related to university employees' anxiety about change.



Note: numbers on the arrows indicate statistically significant standardized  $\beta$  coefficients; \*  $p < .01$ .

#### 4. Discussion and conclusions

Although organizational change is essential to all institutions, it is a complex and high-risk activity, thus organizations need to develop and implement capabilities to facilitate organizational change (Zhang, Wang, & O'Kane, 2019). Given the recent intense changes in higher education, it is important to look at what factors might reduce employee anxiety about change. Employees' anxiety is very closely related to their health, well-being and processes within the organization (Baruch & Lambert, 2007; Huang et al., 2019; Marshak, 2016; Tremblay & Messervey, 2011), so organizations should be interested in programs of personal and job resources development. As Baruch and Lambert (2007) emphasized, recognition of organizational anxiety is only advantageous if methods of prevention or treatment are possible and available.

It can be noted that anxiety about change could be attributed to areas that deserve more attention. Particular attention should be paid to members of the academic staff who are more concerned about changes at national level, i.e., ongoing education reform in the country, changing demands at work, and changes related to students. Anxiety about the changes could be facilitated by the effective dissemination of information provided by the university administration on current situation and future vision, as well as training on generational differences and the specificity of working with a new generation of students. Also, the analysis of the relationship between work experience and anxiety about change revealed that the uncertain situation regarding the future of higher education is more expressed for higher experienced employees than for less experienced. It may be thought that more experienced university employees might be more difficult to adapt to the labor market after losing their job at university. On the other hand, they may also have insufficient information about their future at university.

A few more recommendations regarding strengths as well as improvements for universities during the period of organizational change may be proposed. For example, optimistic employees could be invited to become ambassadors (e.g. public lectures, discussions, publications in university newsletters and websites). This not only brings recognition to the employees, but also makes possible to enhance the value of personal resources for the employees themselves. Besides, in order to decrease employee anxiety about organizational change, organizations should focus on workplace empowerment. Organizations are advised to give their employees greater freedom in the choice and performance of their work activities. Previous research confirmed that influence or empowerment is related with job satisfaction (Rana & Singh, 2016), and the results of this study revealed its significance in the tendency to reduce anxiety.

Summarizing, the results of this study revealed that university employees experience a great amount of anxiety about various changes occurring both at the organization and in the wider context. Reducing employee's anxiety about ongoing changes (and not only) should begin with a systematic interest by university administration on how university employees are feeling.

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# THE MEDIATING ROLE OF CONTEXTUAL PERFORMANCE IN THE RELATIONSHIP BETWEEN SELF-LEADERSHIP AND JOB SATISFACTION

Íris Leão, & António Caetano

*Department of Psychology, APPsyCI – Applied Psychology Research Center Capabilities and Inclusion (FCT/UIDB/05299/2020) (Portugal)*

## Abstract

The pressure associated with the daily pace of changes and unpredictable problems at work directly disturbs the well-being of employees. Job satisfaction is a critical indicator of well-being and can have repercussions on individual performance. On a personal level, these effects can contribute to situations such as burnout and demotivation. As an attitude, job satisfaction results from both the external environment and the individual's intrinsic qualities, of which self-leadership has been highlighted as a relevant competence for most of today's work contexts. Self-leadership is a process of self-influence by which individuals regulate their thoughts, behaviours, and emotions. It can function as an internal source of leadership and is associated with more effective performance and lower levels of anxiety at work. Through self-leadership strategies, individuals may engage in contextual performance, defined as voluntary behaviour that supports the psychological, social, and organisational environment. As they develop these strategies, they make more positive evaluations of their work. Therefore, this study aims to investigate how employee's self-leadership skills are related to contextual performance and job satisfaction. For that, we analysed the mediating role of contextual performance in the relationship between self-leadership and job satisfaction. Utilizing a cross-sectional study design, we gathered data from 250 participants who volunteered from several organizations. To test the hypothesized mediation effect, we used bootstrapping techniques from Hayes' PROCESS macro program. Results supported the tested model. Firstly, it showed that self-leadership significantly and positively influences job satisfaction. Secondly, it revealed a partial mediating role of contextual performance in the relationship between self-leadership and job satisfaction. Summarily, the results suggest that employees with higher self-leadership skills tend to demonstrate more contextual performance behaviours and higher levels of job satisfaction. Given the inherent constraints of a cross-sectional design, these results suggest a need to adopt a longitudinal design in subsequent studies to elucidate the temporal dynamics among those relationships. This study adds a contribution to existing knowledge on self-leadership by empirically testing its relationships with contextual performance and job satisfaction. Also, the insights provide intervention clues and actions for organizations seeking to enhance the performance effectiveness of employees as well as their well-being at work. Therefore, fostering the development of self-leadership skills can benefit organizations and, at the same time, contribute to employee well-being.

**Keywords:** *Job satisfaction, self-leadership, contextual performance.*

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## 1. Introduction

Job satisfaction is a crucial factor in how employees perceive their work in an organization. Job satisfaction is a mental state that reflects emotional well-being and can potentially influence employee behavior, which can impact the organization's functioning. Job satisfaction or dissatisfaction can be linked to employee turnover, absenteeism, burnout, physical and mental health, depression, and overall life satisfaction (Spector, 1997). Locke (1969) defined job satisfaction as a positive emotional state that arises from a person's evaluation of their job. Simply liking one's job does not explain the reasons behind that liking, since the feeling of satisfaction may be due to a variety of factors, such as achievable goals or friendly colleagues (Locke, 1970). When individuals set goals for themselves and can achieve them, they experience a sense of satisfaction (Locke, 1969).

Numerous studies have demonstrated the crucial role of self-leadership in establishing and accomplishing personal and professional objectives (Neck and Houghton, 2006; Stewart et al., 2011). By having the ability to self-regulate, self-motivate, and self-direct, individuals can set ambitious goals and

sustain the attention necessary to attain them (Manz & Neck, 2004). Research has shown that there is a connection between self-leadership and job satisfaction (Roberts & Foti, 1998; Neck & Manz, 1996; Harari et al., 2021).

Self-leadership is defined as an individual's ability to influence themselves through self-directed and self-regulated behaviour to attain personal and professional goals. It involves setting goals, monitoring progress, and adjusting behaviour to achieve the desired outcomes. Self-leadership has been identified as a crucial skill for professional success (Manz & Neck, 2004). On the other hand, job satisfaction is a significant indicator of employee well-being and is related to the level of contentment and fulfilment individuals feel in relation to their work tasks and environment (Judge et al., 2001).

Previous studies have indicated that self-leadership and job satisfaction are positively correlated. This suggests that individuals with high levels of self-leadership are more likely to experience job satisfaction, which contributes to a positive work environment (Roberts & Foti, 1998; Neck & Manz, 1996; Harari et al., 2021). However, the mechanisms underlying this relationship are still poorly understood (Neck & Houghton, 2006; Harari et al., 2021). Recent research by Shen (2023) suggests that self-leadership may be associated with contextual performance.

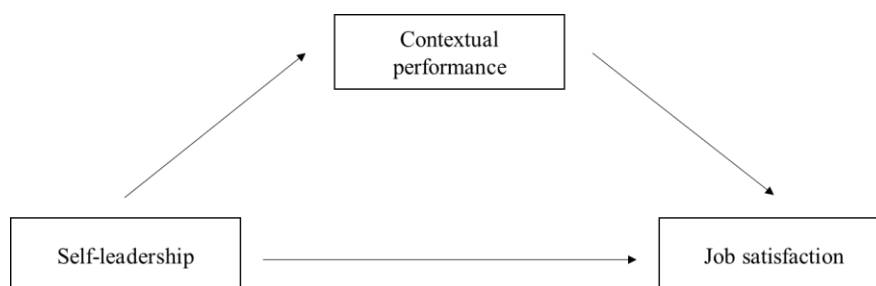
This is where contextual performance emerges as a possible mediator in the relationship with job satisfaction. Contextual performance refers to behaviours that go beyond the formal expectations of the job, such as helping co-workers, sharing knowledge, and contributing to improving the work environment (Sonnentag et al., 2008; Koopmans et al., 2011). Therefore, this study aims to investigate how employee's self-leadership skills are related to contextual performance and job satisfaction. Based on the theoretical and empirical bases reviewed above, we advance the following research hypotheses:

H1: Self-leadership is positively associated with job satisfaction.

H2: The relationship between self-leadership and job satisfaction is partially mediated by contextual performance.

A summary of the conceptual mediation model of the relationships between self-leadership, job satisfaction and contextual performance is shown in Figure 1.

Figure 1. Conceptual mediation model.



## 2. Method

### 2.1. Participants and procedure

This cross-sectional study was conducted on a sample of 250 workers from various organizations, aged between 18 to 66, with a mean age of 32.12 (SD=12.97), 153 female (61.2%) and 97 male (38.8%). The study was carried out by distributing the form link on social media and the knowledge about anonymity was given in the informed consent form. Participants filled in questionnaires anonymously and voluntarily.

### 2.2. Instruments

To test the study's hypotheses based on literature review and validated instruments, a questionnaire with 16 items and sociodemographic questions was created. Self-leadership was considered a predictor variable of job satisfaction, and contextual performance was regarded as a mediating variable. These variables were measured on a 5-point Likert scale ranging from 1 (Strongly disagree) to 5 (Strongly agree).

The job satisfaction was measured through three items (Brayfield & Rothe, 1951); an example item was: "I feel fairly well satisfied with my present job". To measure self-leadership, we used the Abbreviated Self-Leadership Scale, with 9 items (Houghton et al., 2012); an example item was: "I work toward specific goals I have set for myself". The contextual performance was measured through four items (Koopmans et al., 2011); an example item was: "I took on challenging work tasks, when available".

### 3. Results

After collecting the data, preliminary statistical analyses were carried out using the SPSS and Macro PROCESS statistical programmes. Table 1 shows the descriptive statistics, correlations among the study variables and Cronbach's alphas.

Table 1. Descriptive statistics, correlations and Cronbach's alphas ( $N = 250$ ).

|                          | Mean | SD  | 1      | 2      | 3     |
|--------------------------|------|-----|--------|--------|-------|
| 1 Job satisfaction       | 3.66 | .83 | (.82)  |        |       |
| 2 Self-leadership        | 3.55 | .62 | .30*** | (.80)  |       |
| 3 Contextual performance | 4.07 | .54 | .28*** | .52*** | (.67) |

Note. \*\*\* $p < .001$ .

Both hypotheses have been supported (Table 2). To analyse hypothesis 1, which predicted that self-leadership was positively associated with job satisfaction, a regression was carried out. The non-standardised coefficient ( $B = .40$ ,  $p < .001$ ) was significant, supporting the hypothesis 1. Hypothesis 2 predicted that the relationship between self-leadership and job satisfaction is mediated by contextual performance. The relationship between self-leadership and contextual performance ( $B = .45$ ,  $p < .001$ ) and the relationship between contextual performance and job satisfaction ( $B = .26$ ,  $p < .05$ ) were significant (Table 2).

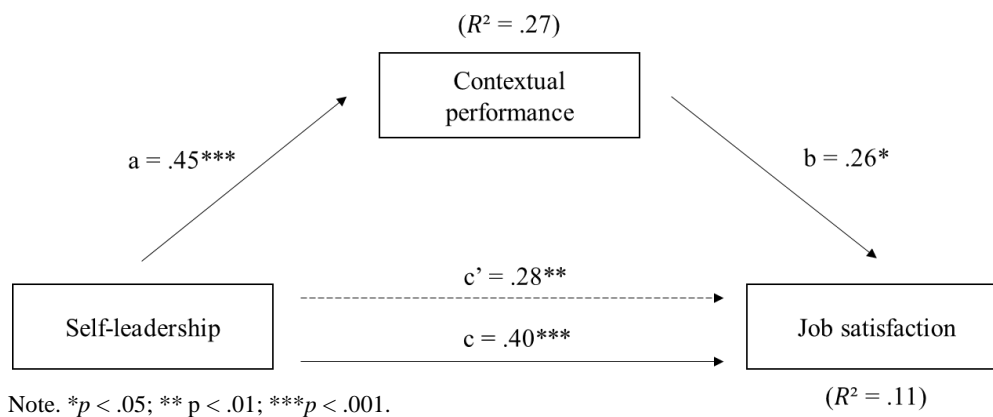
Table 2. Results of the mediation of contextual performance in the relationship between self-leadership and job satisfaction ( $N = 250$ ).

| Predictor Variables    | Contextual performance |           | Job satisfaction  |     |
|------------------------|------------------------|-----------|-------------------|-----|
|                        | B                      | se        | B                 | se  |
| <b>Total Effect</b>    |                        |           |                   |     |
| Constant               |                        |           | 2.24***           | .29 |
| Self-leadership        |                        |           | .40***            | .08 |
| <b>Direct Effect</b>   |                        |           |                   |     |
| Constant               | 2.46***                | .17       | 1.60***           | .39 |
| Self-leadership        | .45***                 | .05       | .28**             | .09 |
| Contextual performance |                        |           | .26*              | .11 |
| <b>Indirect Effect</b> | <i>Coeff.</i>          | <i>se</i> | <i>95% BootCI</i> |     |
|                        | .12                    | .06       | .01               | .24 |

Note. B: non-standardised coefficient; \* $p < .05$ ; \*\*  $p < .01$ ; \*\*\* $p < .001$ .

The tested model explains 27% ( $R^2 = .27$ ) of the variance in employees' contextual performance [ $F(1,248) = 90.67$ ,  $p < .001$ ] and 11% ( $R^2 = .11$ ) of the variance in employees' job satisfaction [ $F(2,247) = 15.41$ ,  $p < .001$ ]. The indirect effect of self-leadership on job satisfaction through contextual performance was .12, with 95% CI [.01, .24], which reveals a mediating effect. The total effect ( $B = .40$ ,  $p < .001$ ) between self-leadership and job satisfaction was also significant. Finally, the direct effect ( $B = .28$ ,  $p < .01$ ) was significant, indicating partial mediation and supporting hypothesis 2. Figure 2 summarises the mediation results with unstandardised regression coefficients and explained variances.

Figure 2. Summarises the mediation results with unstandardised regression coefficients and explained variances.



#### 4. Discussion

The purpose of this study was to understand the extent to which self-leadership contributes to job satisfaction and how this relationship is affected by contextual performance. Based on the literature review, we formulated two hypotheses which suggested that self-leadership was positively associated with job satisfaction (hypothesis 1) and that this relationship was mediated by contextual performance (hypothesis 2).

The results supported hypothesis 1, indicating that employees who display self-leadership skills have higher levels of job satisfaction. This means that the greater the individual's self-leadership skills, the greater their job satisfaction. Therefore, the ability of employees to take responsibility for their own performance and motivation is essential for promoting greater job satisfaction.

Hypothesis 2 was also supported, showing that the relationship between self-leadership and job satisfaction can, in part, be explained by contextual performance. This suggests that behaviors that go beyond the formal requirements of the job play an important role in explaining this relationship. Employees with high self-leadership skills tend to have more contextual performance behaviours (e.g. taking initiative, supporting colleagues and demonstrating organisational civic behaviours) and are more likely to have higher levels of job satisfaction.

Thus, self-leadership can be a key element in the development of positive attitudes and well-being among employees. These results are consistent with studies showing that self-leadership is positively related to job satisfaction by promoting a sense of control, self-regulation and intrinsic motivation in employees (Manz & Neck, 2004; Neck & Houghton, 2006).

#### 5. Conclusion

The study's findings suggest that possessing self-leadership skills can enhance an employee's contextual performance, leading to a positive work environment and greater job satisfaction. As a result, employees with high levels of self-leadership tend to exhibit more behaviours that go beyond their job description and, consequently, are more likely to have higher levels of job satisfaction.

Therefore, it is crucial for organizations to promote self-leadership development initiatives to cultivate proactive individuals and impact positive attitudes and employee well-being.

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# FACTORS INFLUENCING ACCULTURATION STRATEGIES OF ARMENIANS AZERIS LIVING IN GEORGIA

**Anna Gvetadze, & Ekaterine Pirtskhalava**

*Department of Psychology, Ivane Javakishvili Tbilisi State University (Georgia)*

## Abstract

This research presents an in-depth study on the acculturation strategies of ethnic minorities in Georgia, with a specific focus on Armenians and Azeris. Multiple linear regression analysis was used to identify the factors significantly influencing the choice of acculturation strategies. Societal factors such as age, education, knowledge of the state language, perception of ethnic equality, and religious practices, and personal characteristics like locus of control, self-esteem, and optimism were found to be significant predictors. Armenians predominantly adopt an integration strategy, while Azeris favor separation. The research also discovered a complex interplay between societal attitudes, the process of integration, and the formation of social bonds like marriage, especially in the context of the critical role of religion in Georgian society. The findings provide valuable insights for policy development aimed at facilitating better integration and social cohesion in Georgia's multicultural context

**Keywords:** *Acculturation, ethnic minorities, integration, Georgia, societal factors.*

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## 1. Introduction

Georgia is a multicultural nation, home to a variety of ethnic groups, as reported by numerous researchers. It is estimated that one in six residents is a minority, most of whom live in the regions of Samtskhe-Javakheti and Kvemo Kartli. According to the 2014 census conducted by GeoStat, the majority ethnic group is Georgians, comprising 86.8% of the population. Following them are Azeris at 6.3%, Armenians at 4.5%, with other ethnicities accounting for the remaining 2%. Despite this diversity, the integration of ethnic minorities remains a challenging issue. Various strategies are being used to facilitate acculturation.

The research at hand aims to investigate the factors that influence the selection of integration as an acculturation strategy. It hypothesizes that the attitudes of the dominant ethnic Georgians towards the Armenian and Azeri minorities, and the acculturation strategies chosen by these groups, significantly impact the success of their integration. It seeks to identify the elements that either hinder or facilitate the acculturation process among minorities, providing valuable insights that could inform policy development. The following hypothesis were tested:

H1: Armenians and Azeris living in Georgia prefer the integration strategy out of the four acculturation strategies (assimilation, integration, separation, marginalization).

H2: The high level of religiosity of Armenians and Azeris living in Georgia will be negatively related to the strategy of assimilation and integration and will be positively related to the strategy of separation and marginalization

H3: Self-esteem has a positive relationship with the strategy of integration and a negative relationship with the strategy of marginalization; Integration strategy is positively related to internal locus of control and negatively related to external locus of control; The integration strategy is negatively related to the loneliness rate.

H4: Ethnic Georgians have a negative stereotypical attitude towards ethnic minorities and they express assimilationist attitudes towards ethnic minorities living in Georgia

## 2. Acculturation

Acculturation was initially seen as a linear process, where individuals shift from retaining their original culture to assimilating into the host culture (Graves, 1967). This one-dimensional model was

further expanded by sociologist Milton Gordon (1964), who considered acculturation a sub-process of assimilation where biculturalism is only a transitional phase leading to complete assimilation.

However, this thesis examines acculturation as a bidirectional process, as proposed by Berry (2005) and Bourhis (1997). Berry's theory, modified over the years, identified four acculturation strategies: assimilation, integration, separation, and marginalization. The host group can also choose four different responses to the minority group: multiculturalism, melting pot, segregation, and exclusion.

Studies have shown that integration is the most successful strategy for minority groups, followed by assimilation, separation, and marginalization (Berry et al., 1989). Bourhis et al. (1997) expanded Berry's model and introduced the Interactional Model of Acculturation (IAM), which states that the expectations of the dominant group impact the acculturation strategy chosen by the minority group.

Acculturation research has evolved from viewing it as a one-sided phenomenon to considering it from a two-sided perspective. There are three approaches to measuring acculturation: bipolar, two-dimensional, and four-dimensional. This dissertation uses Declan Barry's (2001) East Asian Immigrant Acculturation Assessment Scale (EAAM), based on John Berry's acculturation strategies, to measure acculturation as it considers acculturation a multidimensional phenomenon.

In summary, acculturation research has evolved from a one-dimensional to a two-dimensional model, considering both the acceptance and attitudes of the minority and majority groups. The chosen acculturation strategy by the minority group is influenced by the attitudes of the host culture.

### 3. Methodology

This research relied on the East Asian Immigrants' Acculturation Assessment Scale (EAAM), which was modified for the Georgian context by Shekrladze in 2017. This scale measures the four dimensions of acculturation as defined by Berry: assimilation, separation, integration, and marginalization. Unlike other measures, the EAAM approaches acculturation as a multidimensional phenomenon that appears at different stages, evaluates attitudes and behavior in different situations, and each statement of the scale measures a different area. The scale is not ambiguous or triad, and statements do not overlap each other (Barry, 2001).

The research methodology consisted of several stages. During the first stage, in-depth interviews were conducted with experts. The second and fourth stages employed quantitative methods and involved a total of 452 participants from Azeri and Armenian communities, as well as 1,200 ethnic Georgians. In the third stage, the researchers conducted in-depth interviews with ethnic minorities to supplement the quantitative data collected.

The research employed purposive sampling methods. Initially, available sampling, a non-probability method, was used for conducting 15 expert interviews. The second and third stages used convenient and snowball sampling for quantitative and qualitative research involving ethnic minorities, with 452 participants for the former and 42 for the latter.

Purposive sampling facilitated participant selection based on specific criteria, ensuring representativeness and yielding insights into the experiences and perspectives of ethnic minorities and Georgians in Georgia.

Quotas were allocated according to regional population distributions, settlement types, gender, and age. Interviewers used a 3-step free incidence method to find suitable respondents, applying the last birthday rule for free quotas.

A self-administered questionnaire was used for the survey, delivered via a door-to-door approach with interviewers assisting as needed. The final stage implemented quota sampling to ensure proportional representation, resulting in 1200 face-to-face interviews across Georgia, excluding occupied territories.

### 4. Results and discussion

The research provides an in-depth examination of the acculturation strategies of two ethnic groups in Georgia, Armenians and Azeris. Acculturation is a process in which an individual adopts, acquires and adjusts to a new cultural environment. In this context, Armenians (mean score: 4.15, standard deviation: 2.02) predominantly adopt an integration strategy, assimilating some features of the host culture, which involves a balance of maintaining their own cultural identity while also adopting the cultural practices of the Georgian society.

Contrastingly, Azeris (mean score: 3.50, standard deviation: 1.24) were found to favor the separation strategy. This strategy involves maintaining their native culture and minimally adopting the practices of the host culture. They focus more on their native culture, indicating a strong sense of ethnic preservation and less assimilation of Georgian culture.

Table 1.

| Ethnicity |               | Assimilation | Separation | Integration | Marginalization |
|-----------|---------------|--------------|------------|-------------|-----------------|
| Armenian  | Mean          | 2,18         | 3,66       | 4,15        | 2,13            |
|           | St. Deviation | 1,16         | 1,61       | 2,02        | 0,88            |
| Azeri     | Mean          | 2,43         | 3,50       | 3,40        | 2,85            |
|           | St. Deviation | 1,14         | 0,95       | 1,24        | 0,83            |
| Total     | Mean          | 2,31         | 3,58       | 3,75        | 2,51            |
|           | St. Deviation | 1,15         | 1,30       | 1,69        | 0,92            |

In the process of this research, the perceptions within Georgian society towards these ethnic minorities were analyzed. The data revealed a tendency towards negative perceptions of ethnic minorities, especially Armenians living in Georgia. They were negatively characterized in a significant majority of cases, approximately 86.8%.

Table 2.

| Georgian    |       | Azeri               |       | Armenian   |       |
|-------------|-------|---------------------|-------|------------|-------|
| Patriot     | 32.1% | Hardworker          | 43.1% | Hardworker | 18.3% |
| Hospitable  | 27.6% | Friendly            | 18.8% | Stingy     | 17.6% |
| Traditional | 18.7% | Kind                | 10.9% | Friendly   | 12.9% |
| Manly       | 15.2% | Traditional         | 10.2% | Devil      | 12.1% |
| Hardworker  | 14.6% | Believer            | 7.7%  | Scammer    | 8.9%  |
| Faithful    | 13.3% | Faithful            | 5.9%  | Traitor    | 5.4%  |
| Proud       | 13.3% | A historic neighbor | 3.4%  | Kind       | 5.3%  |
| Believer    | 12.6% | Assertive           | 3.1%  | Greedy     | 5.3%  |

On the other hand, Azeris were generally viewed more positively within Georgian society. However, despite these attitudes, ethnic Georgians themselves were negatively characterized in only 25.1% of cases. This contrast in perceptions towards different ethnic groups presents an intriguing aspect of Georgian societal attitudes.

Interestingly, despite the negative characterization of Armenians, it was found that Georgians displayed a higher willingness to start a family with Armenians than with Azeris. This finding, despite Azeris being more positively characterized overall, was statistically significant ( $t(1199)=3.2$ ;  $p=0.001$ ), indicating a complex interplay of factors influencing such personal decisions regarding family formation. Further, when respondents were asked about the most important factors when starting a family, over half (58%) indicated that religion is essential. Language was the next significant factor at 21.2%, with ethnicity close behind at 20.8%. These responses highlight the integral role of religion in Georgian society and its influence on personal and social decisions.

These findings suggest a complex relationship between positive societal attitudes, the process of integration, and the formation of social bonds such as marriage. While positive attitudes towards a minority group can encourage those individuals to opt for an integration strategy, it is evident that positive attitudes alone do not necessarily lead to deeper social bonds like marriage.

This relationship is particularly relevant in Georgia, where religion plays a critical role in cultural identity. The research thus concludes that while positive societal attitudes towards a minority group can encourage integration, other significant factors like religion greatly influence important social decisions like choosing a marriage partner. This, in turn, affects the choice of acculturation strategy adopted by ethnic minorities in Georgia.

In a detailed research study using multiple linear regression analysis, various factors were identified that significantly influenced the choice of acculturation strategies. The strategy of integration was mainly influenced by factors such as age, education, knowledge of the state language, perception of

ethnic equality, and religious practices. In statistical terms, these factors accounted for 65.6% of the variance in integration ( $R^2=.656$ ,  $F(11)=76.235$ ,  $p<0.01$ ).

The study also analyzed the role of personal characteristics in choosing the integration strategy. It was found that locus of control, self-esteem, and optimism significantly predicted integration, but they accounted for only 25% of the relationship ( $R^2=.25$ ,  $F(3)=49.799$ ,  $p<0.01$ ). When data was analysed for ethnic Armenians, personal factors such as locus of control, optimism, trust, and self-esteem were found to be significant, predicting 41% of the integration rate ( $R^2=.41$ ,  $F(4)=35.583$ ,  $p<0.01$ ).

The study further explored the predictors of the assimilation strategy. Here, factors like age, knowledge of the state language, perception of ethnic equality, religious practices, job opportunities, and trust in government significantly influenced the tendency towards assimilation. They explained 52.8% of the variance ( $R^2=.528$ ,  $F(9)=55.043$ ,  $p<0.01$ ). However, personal characteristics could predict only 21.2% of the choice of the assimilation strategy ( $R^2=.212$ ,  $F(4)=29.986$ ,  $p<0.01$ ). For ethnic Armenians, personal characteristics predicted 46.7% of the variance for assimilation ( $R^2=.467$ ,  $F(3)=60.088$ ,  $p<0.01$ ).

The separation strategy was determined by factors such as age, education, knowledge of the state language, religious beliefs, trust in institutions, and financial status. These accounted for 48.4% of the variation ( $R^2=.484$ ,  $F(7)=59.461$ ,  $p<0.01$ ). When it came to personal characteristics, they predicted the choice of separation strategy by 17.3% ( $R^2=.173$ ,  $F(4)=23.364$ ,  $p<0.01$ ). For ethnic Armenians, personal characteristics predicted the choice of separation strategy by 44.3% ( $R^2=.443$ ,  $F(4)=40.838$ ,  $p<0.01$ ).

Lastly, the strategy of marginalization showed significant relationships only with the personal characteristics of ethnic minorities. Specifically, loneliness, locus of control, and self-esteem were the predictors, accounting for 46% of the variance ( $R^2=.46$ ,  $F(3)=127.357$ ,  $p<0.01$ ). For ethnic Armenians, the predictors of marginalization were loneliness index and locus of control, which accounted for a significant 69.4% of the variance ( $R^2=.694$ ,  $F(2)=235.246$ ,  $p<0.01$ ).

## 5. Conclusion

In conclusion, this extensive research has provided valuable insights into the acculturation strategies of ethnic minorities in Georgia. It is clear that both societal factors and personal characteristics play significant roles in determining the chosen acculturation strategy. The adoption of integration, assimilation, separation, or marginalization strategies depends on various factors, including age, education, language proficiency, religious practices, financial status, locus of control, self-esteem, and optimism.

The research also highlights the complex interplay of societal attitudes, personal characteristics, and the process of integration. Despite the generally negative societal attitudes towards Armenians, they are more likely to choose integration, influenced by their personal characteristics and societal factors. On the other hand, Azeris tend to choose separation, maintaining more of their native culture.

Moreover, the critical role of religion in Georgian society, manifested in choices related to marriage and family formation, significantly influences the choice of acculturation strategy. This research underscores the need for policy development to facilitate better integration and social cohesion in Georgia's multicultural context.

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## THE COVID-19 PANDEMIC AS A CAREER SHOCK: UNIVERSITY STUDENTS' PERSPECTIVE

Ivana B. Petrović<sup>1</sup>, Maja Ćurić Dražić<sup>2</sup>, & Milica Vukelić<sup>1</sup>

<sup>1</sup>*Department of Psychology, Faculty of Philosophy, University of Belgrade (Serbia)*

<sup>2</sup>*Department of Psychology, Faculty of Media and Communications, Singidunum University (Serbia)*

### Abstract

The term “career shock” signifies unplanned and unanticipated events that affect a person's career. Akkermans and colleagues defined career shock as an unsettling, unusual and hard to control event that prompts concerns about one's career. The COVID-19 pandemic was an event that has unexpectedly, suddenly and profoundly affected students' lives, especially over the first months of the pandemic. Thus, we wanted to explore whether psychology students in Serbia had experienced the first and most unknown wave of the COVID-19 pandemic as a career shock. The qualitative study involved 64 third-year undergraduate psychology students (87.5% women) from Serbia who were asked to write a short narrative about how they experienced the pandemic, if their experience was a positive or a negative one and why. Additionally, based on a career shock definition they labeled COVID-19 as a (non)shocking experience. Data were collected in spring 2020, during the first wave of COVID-19 pandemic in Serbia. Students' narratives were analyzed using the Gioia method. The majority of participants experienced the pandemic as a career shock (72%). We have identified Covid pandemic both as a positive and a negative career shock. As themes we identified positive and negative aspects of online teaching, positive and negative career consequences. The complex experience of online teaching developed into a two-valence career shock. In addition, there were consequences of online teaching of a more personal nature. On the positive side, students felt safer, had more time to pursue other interests, and more time for family and friends. On the negative side, students felt isolated. The fear of missing out (FOMO) made them anxious about the quality of their studies. Results indicate two broad dimensions of students' experiences of the Covid pandemic: 1. Studies and knowledge, and 2. Employability. Clearly, students experienced the COVID-19 pandemic as a career shock. The shifting valence gives an interesting insight to the still developing theory of career shocks. Findings may offer practical recommendations on how to reorganize curricula and other activities to prepare for developing and implementing educational interventions aimed at preventing and/or alleviating the negative consequences of career shocks, not only during the pandemic and in the post-pandemic period, but also in times of other disruptive and extraordinary events as well.

**Keywords:** *Career shock, COVID-19 pandemic, psychology students, Serbia.*

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### 1. Introduction

The term “career shock” signifies unplanned and unanticipated events that affect a person's career. Akkermans and colleagues (Akkermans, Richardson, & Kraimer, 2020) defined career shock as an unsettling, unusual and hard to control event that prompts concerns about one's career. The World Health Organization (WHO) declared the COVID-19 pandemic in March 2020 (WHO, 2021). The COVID-19 pandemic was an event that has unexpectedly, suddenly and profoundly affected students' lives. Not long before the pandemic, thinking of labor-market changes, and the need for exploring the concept of career shocks in various socio-economic and cultural contexts, Akkermans and colleagues inspired an important tide of research on career shocks (Akkermans & Kubasch, 2017; Akkermans, Seibert, & Mol, 2018).

The COVID storm joined that tide as a set of specific contextual conditions that profoundly affected careers and lives all over the planet. Especially during the first months of the pandemic, when due to the unknown course of the illness and thus unknown consequences, there was a lock down. In Serbia, where this research took place, in the middle of March 2020, the government declared a national state of emergency, that after the first death included the lockdown from 5 pm to 5 am and during the weekends. Covering the closing of the borders and public spaces, the government measures affected the majority of the businesses and organizations, including universities, public transportation and services,

with groceries and pharmacies being excluded (OECD, 2021; Vukelic et al., 2023). The restrictions were lifted in early May 2020. It should be noted that researchers listed uncertainty brought by the Covid-19 pandemic as having the strongest effect on career (Yilmaz, 2020). Thus, under the overall case study approach, we wanted to explore whether psychology students had experienced the COVID-19 pandemic as a career shock, particularly the first wave of the pandemic in Serbia, as being the most unknown and uncertain, it was highly relevant for deepening our knowledge about the construct of career shocks.

## 2. Method

The archival qualitative study involved 64 third-year undergraduate psychology students (87.5% women, age range 21-23 years) from Serbia. As a part of the *Career management* course activities, students were asked to write a short narrative about how they experienced the pandemic, if their experience was a positive or a negative one and why. Additionally, based on a career shock definition they labeled COVID-19 as a (non)shocking experience. Data were collected in April-May 2020.

Analysis of students' narratives was developed inductively using the Gioia method (Gioia, Corley, & Hamilton, 2012; Vukelić & Petrović, 2021). Qualitative content analysis was carried out in three steps. First, researchers independently coded students' narratives (first level of analysis - developing concepts). Concepts were discussed and collaboratively streamlined and organized into themes and aggregated dimensions.

## 3. Results and discussion

The majority of participants experienced the pandemic as a career shock (72%). Analyzing students' narratives, we have identified Covid pandemic both as a positive and negative career shock. The complex experience of online teaching developed into a two-valence career shock. In academic terms students liked new approaches to learning, new ways of collaborating in teams, new relationships with teachers. As a consequence of online teaching, on the positive side, students felt safer, had more time to pursue other interests, and more time for family and friends. On the negative side, students felt isolated from colleagues, using new tools in an online environment was often challenging, even impossible. Career-wise, on the positive side, some students understood in a very short time that they could use the opportunity of being more at home and having more free time, to learn things and develop skills that would be beneficial for their career (such as learning foreign languages, new software, taking various online courses, reading).

The fear of missing out (FOMO) made them anxious about the quality of their studies. The inability to take the internship led students to consider how the lack of practical experience might affect their future career prospects. In addition, for students that worked before the pandemic, finding a new job or losing one during the pandemic were also recognized as events that triggered career shocks. Primarily, the majority of students perceived the pandemic in relation to their studies, and some 18% of students primarily thought about the effects of the pandemic on their career and future employment. This finding is closely related with the fact that students were in their third year of undergraduate studies, with two more years to study before embarking on a job. Results indicate two broad dimensions of students' experiences of the Covid pandemic as a career shock: 1. Studies and knowledge, and 2. Employability.

However, for a rounded discussion of results, we need to list some of the limitations of the study and suggestions for future research. For those students that have not perceived the pandemic as a career shock, it is most probably related with differences in response activation. Longitudinal research design would enable better understanding of the process. For more complex insights, the sample should have covered persons in different stages of career development, not only students. Future samples should secure better gender balance. Among students, research should entail different fields, not just psychology. However, theory-wise, we were able to grasp the moment hoping to add a new perspective on career shocks. On the practical level, we were able to come up with some recommendations that are relevant for preventing students' career shocks ignited by other factors, not only by the epidemic/pandemic.

## 4. Conclusions

First papers about the possible effects of the Covid-19 pandemic on career in general, and on career shocks in particular, were based on literature reviews (e.g. Akkermans et al., 2020; Yilmaz, 2020). This study offers a still rare empirical insight into the career shocks of students under extreme, pervasive conditions caused by the pandemic.

Clearly, students experienced the COVID-19 pandemic as a career shock. The shifting valence gives an interesting insight to the still developing theory of career shocks. Findings may offer practical recommendations on how to reorganize curricula and other activities to prepare for developing and implementing educational interventions aimed at preventing and/or alleviating the negative consequences of career shocks, and support them to make better use of perceived positive consequences, not only during the pandemic and in the post-pandemic period, but also in times of other disruptive and extraordinary events as well.

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## IDENTITY STRATEGIES OF GEORGIANS MIGRANTS IN GERMANY

**Ekaterine Pirtskhalava<sup>1</sup>, & Ina Shanava<sup>2</sup>**

<sup>1</sup>*Associate Professor at the Department of Psychology,  
Ivane Javakhishvili Tbilisi State University (TSU) (Georgia)*

<sup>2</sup>*Associate Professor of Gori State University (Georgia)*

### Abstract

The study shows how Georgian migrants settled down in Germany. This qualitative research centers on the process of adaptation and integration of Georgians in a new environment. After the collapse of the Soviet Union, economic difficulties have led to the highest levels of out-migration from country after independence of Georgia. Based on the data of General Population Census from 2014 the Georgian population as of January 1st 2015 is amounts to 3,729,500 persons. During last two decades from a population reduction of around 1,241 (22, 72%) persons. The processes of adaptation and integration are complex since they usually imply keeping the balance between the will to maintain one's own cultural identity while constructing positive relations with the host society, a multitude of factors contribute to the integration process such as the individual's ability to learn a new language and culture, not resisting a value of dominant and primary culture; the openness and tolerance of the host society towards new members, etc. Identity tactics and strategies, which often resort to the use of representatives from ethnic groups, play a unique role in the interaction processes within new socio-cultural spaces. By mobilizing these strategies, ethnic groups manage to engage themselves into the local social-interaction network and move towards integration to the host society. This explains that representatives of the same ethnic groups located in different socio-cultural environments could mobilize different identity strategies: individual and collective identity strategies (Camilleri & Malewska-Peyre, 1980). Based on in-depth interviews with migrants living more than 10 years in Germany this work focuses on study perception of Georgian emigrants about: the dynamic of adaptation process in the new socio-cultural spaces. According to identity strategies based on two axes: the simple and the complex coherence the study tries to analyze Georgian migrants' individual and collective identity strategies.

**Keywords:** *Migration, ethnic identity, identity strategies.*

### 1. Introduction

According to the United Nations, there have never been more immigrants than today. After the collapse of the Soviet Union and Union and Georgia's independence, there was a long period of political and socio-economic instability in the country. Many Georgian citizens decided to leave the country to look for a better life elsewhere, and they emigrated in great numbers. During the first decade of independence, the majority of emigrants had chosen mostly post-Soviet space. Later, Turkey (Badurashvili, 2012, p. 4-5; Chindea et. al., 2008, p. 31) and EU countries became more attractive for Georgian migrants. "2019 Migration Profile Georgia" demonstrates that in 2017-2018, the top destination countries (by number of visits) for Georgian citizens were Germany, Italy, and Greece.

Georgia has a close connection to Germany, which dates back 200 years. After Georgia's independence, Germany was the first country to recognize its independence and opened an embassy in Tbilisi in 1992. The German language is taught as a first-second foreign language in many Georgian schools (ICMPD, 2014). The German academic exchange service offers scholarships on a yearly basis for Georgian students to pursue higher education in Germany and has built strong links with Georgia. In addition, there are organized "au pair programs", which offer young people the opportunity to live with a German family for a year, to take care of their household and children, and to learn the German language (ICMPD, 2014).

Statistical data about Georgians in Germany according to Data 2020 is the following: there are 27,315 Georgians recorded living in Germany, of whom 56.8% are women. The largest age group is 30-35, followed by those aged 20-25 and 35-40. For men, the median age is 31.4, and for women, 33.0.



The proposed research shows how Georgian emigrants are dealing with the two cultures in their current lives and how they maintain their Georgian identity in the host society by using different strategies (Camilleri & Malewska-Peyre, 1980) for ethnic identity preservation.

## 2. Design

To achieve the main purpose of the descriptive research, the study followed the general frameworks of migration scholars (Kim et al., 2001), advocating an in-depth examination of such experience based on instructions for selecting the sample size in qualitative research (Creswell, 2009). The interviews took place from June to October 2021.

## 3. Participants

Participants were chosen using the snowball sampling method, applying the following criteria: 1) The participants of the study must have been in migration for at least 10 years; 30 participants (6 males and 22 females) have been interviewed during the summer-autumn of 2021; 2) The age of participants should have been between 30 and 50 years old.

## 4. Method

*Desk review:* In the research, the legislation related to the migration of Georgians to the EU country was explored. In addition, various research studies about identity were analysed.

*Field Study:* This research was conducted via qualitative, semi-structured, in-depth interviews and participant observation with Georgian migrants in Germany. Interviews were conducted in a Georgian language and lasted one hour on average. The qualitative interviews consisted of several questions about ethnic identity, how they are choosing the identity strategies for keeping the Georgian identity in the host country, about their perception of host society and the other Georgians living in Germany, about the reasons for conflicts in and out of groups, and about their relationships with other Georgians and Germans according to their perceptions.

*Qualitative Content Analysis:* According to scholars (Graneheim & Lundman, 2004; Graneheim, Lindgren, & Lundman, 2017), Qualitative content analysis focuses on the subject and the context; it helps to analyse the manifest, descriptive, latent, and interpretative content close to the participants' lived experiences. Analytical Procedure followed the process of qualitative content analysis (cf. Bengtsson, 2016, p. 9; Mayring, 2010).

*The category system:* The developed category system used for the analysis of the interviews contains categories. These main categories were further divided into subcategories: *settling in Germany:* arrival reason, study, and education; *identity strategies:* collective and individual. Direct quotes were translated from Georgian to English as accurately as possible.

The present study was conducted in line with the *ethical guidelines* of Tbilisi State University.

## 5. Discussion

### 5.1. Settling in Germany

The first main category refers to the arrival and settlement of the interviewed Georgian migrants in Germany. A person's decision to migrate is often motivated by a complex of interrelated factors: social, institutional, political, health, and even environmental factors.

**Arrival reason** - Arrival reasons for Georgian migrants can be divided in the following categories: difficult economic situation, unemployment in the country of origin, debt, and the lack of prospects, the job opportunities and social network in a different country. Almost all of the participants admitted how economic hardship has impacted on the increase of a migration process from Georgia. Migration was and is considered to be the best way to improve life conditions.

**Study and Education** - The majority of research participants left Georgia to receive higher education in Germany. With the help of the German "au pair programme" they came to Germany to live with a German family initially for a year, to take care of their household and children and to learn German language. Afterwards, they passed exams at the German universities to continue their studies. They stayed in Germany, some of them got married and some made a career.

Since they had a possibility to study German language at school and sometimes with the tutor, they could leave their homeland and go to Germany. During the interviews, most of them emphasized the differences in every sphere of life between Georgia and Germany in the past and now.

## 5.2. Identity strategies

By mobilizing identity strategies, ethnic groups manage to engage themselves in the local social-interaction networks and move towards integration and acculturation (Berry, 1997) into the host society. According to scholars (Camilleri, & Malewska-Peyre, 1980). Work migrants in a new society use individual and collective strategies to avoid stigmatization and deprecation of their identities, such as acceptance, denial, or idealization.

One collective strategy for Georgian Migrants is cultural idealization of national culture. The second collective strategy is highlighting general human values and equality, this strategy focuses on values common to Georgian emigrants and German people.

Georgian migrants' Identity strategies are characterized by a pragmatic individual identity strategy. Analyzing the narratives of participants, the differentiate identity strategy is a frequently used strategy for study participants in Germany. According to scholars (Camilleri and Malewska-Peyre, 1980) it means that they feel unwillingness from autochthons, they create distance (from the tenants) from host society, this is reaction towards others on the basis of differences.

Georgian migrants in assessing similarities and differences underline **that** there are a few, mostly hidden similarities. They always emphasize differences that exist in the terms of relationships: German are direct speakers; they have less time for each other's; they have distance in each relationship. However, there are a lot of differences, but about similarities one of the respondents have mentioned:

*"I have encountered that these two societies were very much alike with each other... common is that they both greatly care about public opinion. .... At first, I thought they were distant people, but in reality, they know everything about you. The same is in Georgia, but here it is just more delicate."* (Female, 39-years-old)

All participants noted a noticeable difference (as "differentiate identity") between different constructs of the main constituents of life: the system of parenting/upbringing, the value of relatives and family members, and friendship. These same differences have been found in the study conducted by me with Georgian migrants in Portugal (Pirtskhalava, 2017) and in France (Pirtskhalava, 2021). They emphasize that the German **style of upbringing** is different from the Georgian. German style of child orientation, that they ask a child what they want and the main focus is on them.

*"When something goes wrong, or there is a misunderstanding, everyone sits at the table and expresses their opinions and views, this indeed very good, not like we do in the majority Georgian family, that parent decides everything"* (Male, 35-years-old).

But participants are admitted the emotional attitudes between parents and children.

*"Upbringing system seems a bit cold and more distant than in Georgia, there is less possibility to get attached to the parents, I do not know yet if it is a bad or a good thing... but warming in relationships are important on point of my view"* (Female, 39-years-old).

According to the Georgian migrant the children live with family before they get married in Germany. If children have to move somewhere for education, they will not come back. This is very unusual and unacceptable for Georgians.

**Family members** in Germany as in the other European family means having only spouse and children. Your Siblings are not your family members. In Georgia still, they are your family members. In Germany, brother and sister would not see each other without a formal appointment and meeting. Besides, staying for the night should be agreed upon in advance. This is not like it is, it is a little bit different in Georgia.

*"My friend got in a car accident where his brother lived, but she did not call till the morning, instead she stayed in a hotel, in Georgia, it is unbelievable not to inform the family member, especially brother when something unfortunate happens"* (Female, 48-years-old).

The answer to the question of what kind of **friendship** exists in Germany and how it differs from Georgian friendship, most of them have the same reflection in terms of content. A friend is a very close person, like a family member for Georgians, Georgians self-disclosure is higher with friends, than with other family members, therefore friendship is considered to be the most valuable thing in Georgia.

*"Here mainly friends are talking about general topics, we have never talked about private issues. I love this description, in German friendship, they are never interested in your origins, they never ask an intimate question if you do not want to answer"* (Female, 49-years-old).

For participants of this study very distant (not close) relationships between friends is a little bit surprising. One of the respondents underlined:

“... *Myself, like Georgian, I already know everything about my friend and even her/his friends. My German friend is surprised that I know that much information about her friend. But in my culture, it is important to know about your friend, if you know, you can do something nice, pleasant for them, to make my friend happy...*” (Female, 37-year-old).

It should be noted that Georgian migrants in Germany rarely use the “unnoticed” strategy when individuals are trying to demonstrate their best sides while talking, but in society, they try to be quiet and unnoticed. Unlike other countries (Portugal and France; Pirtskhalava, 2017, 2021), Georgians are not hiding or keeping silent about their ethnic identity. According to their narratives it was greatly facilitated by the Book Fair “Buch Messe” in Frankfurt in 2018, where Georgia was represented as a host of this festival, many books were translated into German and many authors were introduced to the German society, so now Georgians were not only presented in a negative way but from the positive side. They are proud of their identity, because Georgia was already known in educational circles, because Germany is one of the countries in which the Georgians became interested in migration since the collapse of the Soviet Union. The reason of this depends largely on the host society, policy and educational system of the receiving country. In Germany everyone (including Georgians) has a chance to study and specialize, despite the fact that they might feel stigmatized, no one hides his/her identity.

The study also identified a sub strategy called “transferred negative identity” as one of the strategies for Georgian migrants, meaning that people seek to distance themselves from their ethnic group and they have stigmatization within the group, when individually, comparing themselves and their own families with the others. However, this difference deserves another type of explanation within the group:

*“Those who arrive as asylum seekers are in a terrible situation, and we can never say anything about them, nobody knows what we will do in such situations”* (a 38-year-old female).

*“I cannot communicate with “running boys” (they are the people who are stealing small things) or “thief” housebreaker”* (a 40-year-old male).

Some of the study participants try to avoid communication with such people from their own/Georgian groups thus underlining that their family is not the same. This is an example of stigmatization in groups.

*“In general, I try not to have contact with the Georgians/or insignificant contact only in case of necessity”* (a 27-year-old female).

## 6. Conclusion

The study shows Georgian Migrant participants activate the collective identity more than the personal identity. The Georgian migrants are characterized by individual Strategies as pragmatic identity.

In this study, migrants are using two types of identity strategies (Camilleri & Malewska-Peyre, 1997) - “differentiate identity” and “transferred negative identity”. The differentiate identity strategy means differentiating oneself from the host society in terms of the following types of relationships: the system of parenting/upbringing, the value of relatives and family members, and friendship. (the same was with Georgian migrants in Portugal and in France) (Pirtskhalava, 2017, 2021) The second strategy is strategies called “transferred negative identity”, meaning that people seek to distance themselves from their ethnic group and they have stigmatization within the group, when individually, comparing themselves and their own families with the others.

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## **WORK ADDICTION AND WORK-RELATED DEPRESSION IN JAMAICA: WHAT IS THE COST OF TOO MUCH WORK?**

**Tracy A. McFarlane, & Sophia S. Morgan**

*Department of Sociology, Psychology & Social Work, University of the West Indies, Mona (Jamaica)*

### **Abstract**

Long working hours and occupational stress are well-recognized contributors to the global burden of disease (World Health Organization, 2019). Work addiction has relatively high prevalence rates and is strictly related to high stress in and outside work, overworking, stress-related diseases and disorders (Atroszko, Demetrovics, & Griffiths, 2020). Considering these findings, Jamaica was part of an international study to identify the risk factors for work addiction. Work addiction is a relatively new concept and has relevance beyond workplaces/organizations to a range of applied contexts, including health. In an increasingly diverse and globally interconnected workforce, it is important to establish the precursors and consequences of work addiction in varying countries and cultural contexts. These insights are necessary for psychosocial interventions to mitigate negative effects of work addiction and for identifying where there needs to be preventive efforts at the individual, organizational and government levels. The project was approved by the Research Ethics Committees in Katowice, Poland and the University of the West Indies, Mona, Jamaica. Two hundred and seventy-seven (277) adult Jamaican citizens who were working full-time for at least one year with organizations that have at least 10 employees in total, were recruited via work organizations and social media platforms to complete an online survey. Participation in the study was anonymous and voluntary. The Impact 2024 presentation is focused on the prevalence of Work Addiction (assessed using the Bergen Work Addiction Scale by Andreassen, Griffiths, Hetland, & Pallesen, 2012) and its relationship to Work-Related Depression (assessed using the Occupational Depression Inventory by Bianchi & Schonfeld, 2020). Frequencies and multiple regression analyses show high levels of work addiction and that higher levels of work addiction are significantly related to work-related depression. This presentation will extend beyond the findings to considering how such findings may inform Jamaican public and private sector organizations' policies and procedures regarding working conditions, work climate and organizational values.

**Keywords:** *Work addiction, work-related depression, job stress, Caribbean.*

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### **1. Introduction**

Work addiction and work-related depression are significant concerns in Jamaica, as is the case in many parts of the world. Achieving a balance between work and wellbeing can be especially challenging in work environments where there is a strong cultural emphasis on work and productivity, which might sometimes eclipse the importance of mental health and work-life balance. Studies of the workplace climate in Jamaica have focused largely on issues such as organizational trust (Mcleary & Cruz, 2015), employee engagement (Hines, 2015; Jamaica Business Development Corporation, 2016), commitment (Cowell, 2004), and worker productivity (Downs, 2003; Hines, 2015; Ramkissoon et al., 2016). Much of this work has explored worker-management relations and organizational culture regarding role expectations and individuals' attitudes toward work (Carter, 1997; Cowell, 2004; Lindo, 1997, 2002; Stone, 1982; Taylor, 2014).

Carter's (1997) pioneering studies on worker attitude in Jamaican organizations were conducted over fourteen years (1974-1988) involving 10877 participants. Carter found that "only 24 percent of the workforce could be characterized as being motivated and therefore, work-oriented" (p. 37), with 22 percent "critically withdrawn" (p. 38). Nearly a decade later, Cowell (2004) debunked Carter's dismal image of the worker. Cowell's study was based on data from a national survey of worker attitudes drawn from a population of 1026 workers in private-sector companies. The focus on business organizations was based on the intent for the survey to yield insights into relationships among market conditions, workplace practices, and worker attitudes. Overall, the study found that workers were strongly committed to work,

their jobs, and their organization. Cowell's (2004) study revealed that just under a quarter of the sample population was dissatisfied with their job. Cowell (2004) concluded that workers were not lazy but committed and motivated. The most recent of studies with similar findings was a study of employee engagement by Jamaica Business Development Corporation (JBDC; 2016) which found that 75.5 percent of the 500 workers surveyed were engaged; 35 percent were moderately engaged, and 41 percent were actively engaged.

The studies appear to highlight a transition in worker attitude from lazy and demotivated to committed and engaged. Despite this ostensible shift, a major concern over worker productivity persists.

In recent times, studies have focused on the effect of working conditions on workers' well-being. Burnout has been a topic of concern, even though much of this research has focused on those in service-related occupations. For example, a study examining the prevalence of stress, burnout, and coping among emergency physicians in Kingston, Jamaica showed 50% of participants scoring highly on emotional exhaustion and 53% of the participants reporting levels of perceived stress above the group average; stress was found to be positively correlated with emotional exhaustion (Hutchinson, Haase, French & McFarlane, 2014). This current study contributes to this emerging topic, shifting the conversation from a focus on worker productivity to identifying the critical consequences of workforce management and socio-economic health of the work environment for employees. Specifically, this paper explores the prevalence of work addiction and its relationship to work-related depression.

Clarke, et al (2016), defined workaholism as "an addiction to work that involves feeling compelled or driven to work because of internal pressures, having persistent and frequent thoughts about work when not working, and working beyond what is reasonably expected (as established by the requirements of the job or basic economic needs) despite potential negative consequences." (p. 5). Andreassen, et al (2012) observed a controversy among researchers regarding work addiction being a "positive attribute or behaviour tendency encompassing high work motivation" while others emphasize the negative aspects such as "compulsiveness and rigidity" (p. 265). Work addiction may be associated with positive consequences such as job satisfaction, however, it is important to highlight the negative consequences as a distinguishing element of work addiction. Workaholism is related to negative outcomes such as burnout, job stress, work conflict, and a decrease in physical and mental health (Clarke, et al, 2014), and can be influenced by cultural factors, economic demands, and personal traits.

Considering global trends in workplace wellness it is important to investigate the prevalence and effects of work addiction. More and more, organizations are adopting practices to enhance employee well-being and mental health. These practices include a focus on occupational wellness, mental health support, and incorporating sustainability into well-being initiatives. Jamaica's historical background warrants a better understanding of attitudes towards work and its effects on Jamaicans, leading to the following objectives for this study.

## 2. Objectives

- What is the prevalence of work addiction?
- What is the prevalence of work-related depression?
- Is work addiction related to work-related depression?

## 3. Design

The cross-sectional study was conducted in collaboration with researchers in 85 cultures from all over the world (from Africa, Asia, Australasia, Europe, North America, and South America). All researchers involved in the study were identified based on their expertise, invited to collaborate, and supervised in their tasks by team leaders in Poland, who disseminated the study protocol and maintained online communication with the international collaborators. The project was approved by the Research Ethics Committees in Katowice, Poland and, in Jamaica, by the University of the West Indies, Mona.

## 4. Methods

### 4.1. Participants

The non-probability sample consisted of two hundred and seventy-seven (277) adult Jamaican citizens who were working full-time for at least one year with organizations that have at least 10 employees in total. There were 219 women and 58 men in the study; the mean age of respondents was 43.16 years (SD = 12.41; ranging from 19 to 70 years old) with most persons (94.2%) having completed undergraduate or post graduate degrees. Five percent (5%) reported secondary or vocational education and one person had

completed primary education. Approximately forty-six percent (46%) reported having no children; 24% and 21% reported having 1 child and 2 children, respectively. Nine percent (9%) reported having 3 to 5 children. Thirty-five percent (35%) were married. A range of 115 occupations were reported (open-ended question) and grouped by the researchers into the following 10 categories: Art & Design (0.87%), Business and Finance (25.22%), Education (4.35%), Healthcare (14.78%), Information Technology (5.22%), Legal, Management and Consulting (12.17%), Marketing and Communications (6.09%), Science and Engineering (5.22%), and Social Services (19.13%). The occupations were in the public (61.4%) and private (38.6%) sectors.

## **4.2. Procedure**

**4.2.1. Recruitment.** Potential participants were recruited by distributing recruitment materials through work/professional organizations and social media platforms.

**4.2.2. Data collection.** The electronic flyers included a link or QR code whereby volunteers accessed the informed consent form and survey.

## **4.3. Instruments**

**4.3.1. Work addiction.** Work addiction was assessed using the 7-item Bergen Work Addiction Scale (BWAS; Andreassen, Griffiths, Hetland, & Pallesen, 2012). A sample item is, "How often during the past year have you thought of how you could free up more time to work?" Responses were recorded on a 5-point Likert scale ranging from never (1) to always (5). Higher scores on the scale indicate a higher level of work addiction. Andreassen, et al (2012) suggest a cut-off score of at least 4 out of 7 items endorsed as "often" or "always" to categorize someone as a workaholic. If a significant portion of the sample meets this criterion, it may indicate a higher prevalence of work addiction in the sample. Following this strategy, a cut-off score of 16 was established for this study.

**4.3.2. Work-related depression.** Work-related depression was assessed with the 9-item Occupational Depression Inventory (ODI; Bianchi & Schonfeld, 2020). A sample item is, "My work was so stressful that I could not enjoy the things that I usually like doing." According to Bianchi & Schonfeld, a provisional diagnosis of job-ascribed depression is made if an individual exhibits a score of 3 on at least five of the nine ODI's symptom items, and one of these symptom items is anhedonia (item 1) or depressed mood (item 2). The symptoms should be experienced "nearly every day" over the past two weeks. If these criteria are met, the individual can be considered to have work-related depression. For the purposes of evaluating work-related depression in this group the following criteria was established: scores of at least 3 on items 1 or 2, plus an overall ODI score of at least 15.

## **5. Results**

### **5.1. How prevalent is work addiction?**

Work addiction scores ranged from 7 to 35, with a group mean of 19.35 (SD = 6.02). Chronbach's alpha for the BWAS in this study is .85, indicating a high level of internal consistency (reliability). To determine the prevalence of work addiction, the percentage of valid cases (n = 265) scoring at least 16 (n = 187) was calculated. Therefore, 70.57% of the participants in this study met the criteria for work addiction.

### **5.2. How prevalent is work-related depression?**

Work-related depression scores ranged from 0 to 25, with a group average of 8.46 (SD = 6.47). Chronbach's alpha for the ODI in this study is .91. Of the valid cases (n = 252) the percentage with an overall score of at least 15 (n = 40) is 15.87%. \*Further analysis will be conducted to identify the sub-group meeting the additional criteria for work-related depression.

### **5.3. Is Work addiction related to work-related depression?**

The statistically significant ( $p < 0.01$ ) Pearson correlation coefficient (2 tailed) between work addiction and work-related depression is 0.634. The regression model is statistically significant ( $F=168.36$ ,  $p < .001$ ) and shows that 40.2% of the variance in work-related depression is explained by work addiction ( $R^2 = 0.402$ ).

## 6. Discussion

Work addiction is a complex issue that has garnered much attention in recent years, particularly as the lines between work and personal life have increasingly blurred due to changes in workplace culture and technological advancements. The data indicate a high prevalence of work addiction. At first glance these findings could be seen to align with Cowell's (2004) portrayal of an industrious Jamaican workforce, however, work addiction goes beyond being diligent to being a compulsive worker. The high prevalence of work addiction opposes the stereotype of Jamaica as simply a land of sea and sun. Still, every playground must be maintained, and leisure is facilitated by work. Indeed, the tourist industry is a significant contributor to Jamaica's GDP. In addition to tourism, the Jamaican job market is characterized by a diverse range of opportunities, with sectors such as agriculture, manufacturing, and services playing significant roles. Yet, unemployment remains a challenge, particularly among youth and those with limited access to education and training. Cultural expectations around work, along with heightening economic pressures, may be fuelling work addiction among those who are employed. It is important to note that this sample had a very high number of persons with graduate degrees and who were in occupations with high levels of responsibility. Work addiction is often associated with working long hours and leadership positions (Clark et al., 2016; Dutheil, et al., 2020). Hence, this profile is consistent with the higher prevalence of work addiction in the sample.

Work addiction is a threat to well-being, as work is pursued to the exclusion of other balancing aspects of the worker's life. This contrasts with a highly engaged worker, who, with the coping resources available to members of a work group, benefits from psychosocial modification of the effect of stress on health. Thus, it is possible to be committed to work and yet have protective factors that mitigate health vulnerabilities. The evidence of work-related depression in this study can stem from factors such as job stress, poor work-life balance, and unsupportive workplace environments. In Jamaica, economic fluctuations, job insecurity, or high work demands are among factors that could contribute significantly to work-related depression.

The statistically significant relationship between work addiction and work-related depression among this group demonstrates the likelihood that individuals with work addiction may be more prone to experiencing work-related depression. The mechanism whereby this occurs may be explained by excessive work leading to stress, burnout, and ultimately depression. Conversely, individuals with work-related depression might immerse themselves in work either as a maladaptive coping mechanism or due to increased pressure to perform, thereby leading to work addiction. Thus, the relationship highlights the mutually reinforcing nature of work-addiction and work-related depression.

This study expands the conversation about worker attitudes in the Jamaican workplace context, from issues of employee motivation, commitment, and engagement, to exploring the prevalence of work addiction and work-related depression. Given the high educational attainment of the sample, care should be taken in generalizing these results to the entire working population of Jamaica. Also, the non-probability sample and self-report data further limit generalizability.

With these cautions in mind, future research designs incorporating nationally representative samples, together with qualitative techniques (e.g., ethnographies and participatory action research) for unearthing the meanings of work and the collective identity of the worker would extend the gains of this study. Scrutiny of the context of work, examining factors such as work climate, working conditions, and organizational values will be useful for amplifying the sociohistorical and contemporary contributions to work addiction and its threats to employee well-being. Further, the current findings suggest the need for workplace interventions to implement more sustainable and effective work practices. These might include targeted and innovative programs for better work-life balance, mental health support, and stress management. At the policy level, regulations must go beyond mandatory pay rates for overtime work, to legislation protecting all levels of employees from extreme work demands. National public education campaigns and social marketing strategies can raise awareness about work addiction, reduce stigma against mental illnesses and promote mental health.

In conclusion, the data present a compelling picture of the negative effects of pathological work environments in Jamaica, suggesting an urgent need for culturally appropriate, multifaceted responses at all levels of society. By better understanding the precursors and consequences of work addiction and actively supporting wellbeing, Jamaican organizations can enhance employee engagement, reduce turnover and absenteeism, improve productivity, and create a positive brand image. It's a long-term investment in human capital, which can lead to sustainable success.



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## GEORGIA'S POLITICAL IDENTITY & MIDDLE CORRIDOR

**Elene Kvanchilashvili, & Ekaterine Pirtskhalava**

*Institute of Social Psychology/Tbilisi State University (Georgia)*

### Abstract

This paper considers a wider Black Sea Region for Georgia's identity search considering Georgia's geopolitical location, its Euro-Atlantic aspirations and its main value for the region and beyond – all features for a successful transit hub. It is even more relevant in the context of the current geopolitical changes and an increased focus on Middle Corridor. Georgia's complex political geography has always been and will stay a reality that we cannot avoid on multiple levels – be it politics, economy, or identity. Georgia like many other post-Soviet countries has number of identities, and it will be ready to embrace its regional identity to the extent it does not raise eyebrows on the ultimate goal – whether Georgia is Western enough or not. Georgian people have made their choice: For the vast majority it's a pro-Western orientation. The Middle Corridor, also called TITR (Trans-Caspian International Transport Route), is a trade route from Southeast Asia and China to Europe via Kazakhstan, Caspian Sea, Azerbaijan, and Georgia. It is an alternative to the Northern Corridor, to the north through Russia, and the Ocean Route to the south, via the Suez Canal. Geographically, the Middle Corridor is the shortest route between Western China and Europe. International Sanctions on Russia and COVID-19 before that make Middle Corridor a safer and better option for trade. Main question of the paper is whether the Middle Corridor be enough for tying Georgia closer to its wider region or not. Based on different intergroup approaches developed in social psychology (e.g., Social Identity Theory, Realistic Conflict Theory), political identities refer to identification with and meaning attributed to membership in politically relevant groups, including political parties and national, ethnic, linguistic, or gender groups. A key concept in this intergroup approach to political psychology is political identity. This paper argues that (i) Georgia's political identity is strongly tied with its Euro-Atlantic aspirations and (ii) Georgia will embrace its regional identity if it sees the perspective of strengthening its political identity.

**Keywords:** *Political psychology, middle corridor, political identity, Georgia, Euro-Integration.*

### 1. Introduction

Writing over two decades ago, Stuart Hall (1991) first told the story of European identity as contradictory processes of marking symbolic boundaries and constructing symbolic frontiers between inside and outside, interior and exterior, belonging and otherness, which are central to any account of the political psychology of the European integration. However, no systematic attempt has been made to weave the stories of the European identity together with those of European integration using political psychology (Manners, 2018). Given that marking inside and outside, interior and exterior, belonging and otherness are both political and psychological processes, this absence of engagement seems problematic.

Georgia could be a good case study to highlight this engagement.

Georgia's complex political geography has always been and will stay a reality that we cannot avoid on multiple levels – be it politics, economy, or identity (Kvanchilashvili, & Pirtskhalava, 2023). The global changes that the COVID-19 and Russia's War in Ukraine has caused, pushes Georgia to balance its regional integration with its ultimate goal to become a member of the EU. Today, Georgia holds the EU candidate country status bringing it closer to opening negotiations for its EU membership, which makes the nature and possible impact of its effort to balance between regional and Euro-Atlantic values something that needs to be watched closely.

Middle Corridor could be one factor amplifying Georgia's need for perfect balance.

The so-called "Middle Corridor" is a Trans-Caspian logistics route that connects Asia with Europe, bypassing Russia. Due to the Russian invasion of Ukraine, the sanctions imposed and the resulting obstruction of the transport route via Russia, the Middle Corridor is becoming increasingly important. A multimodal land-and-sea transport route is stretching from China through Kazakhstan, and

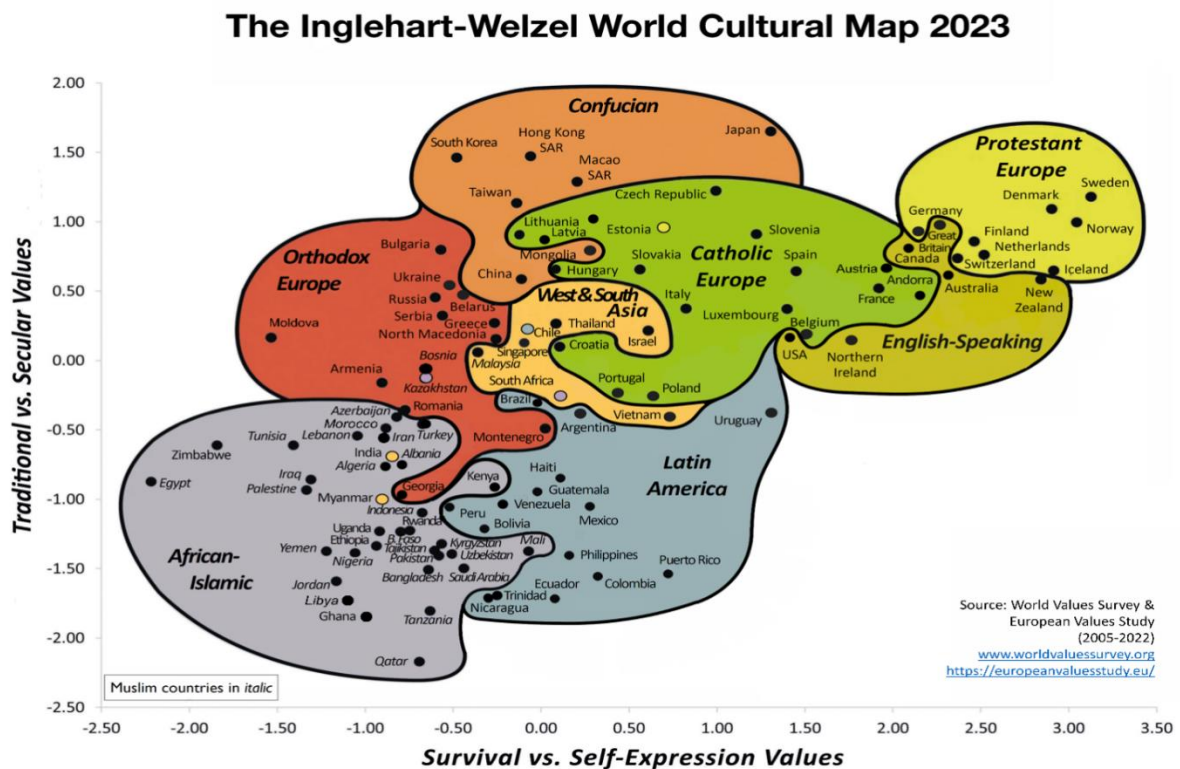
partly Uzbekistan and Turkmenistan, and across the Caspian Sea, through Azerbaijan and Georgia, to the Black Sea. The route consists of about 4,250 km of rail lines, and about 500 km of seaway. Afterwards, two paths lead to the Europe via Turkey and the Black Sea, respectively. From a European perspective, it also offers access to the growing markets of Central Asia and the Caucasus region, as well as faster access to the Middle East, North Africa and the European Mediterranean region via the ports in Georgia and Turkey.

Middle Corridor and the recent reshuffling of the trading routes might be one factor where Georgia uses its values on the one hand, to secure its role in the wider Black Sea region and on the other, to continue its Euro-Integration path that the majority of Georgian citizens have steadily chosen.

## 2. Findings and discussion

As the World Cultural Map shows, Georgia is closer to the countries along the Middle Corridor in traditional and survival values as opposed to secular-rational and self-expression values that are more common to the EU countries of Georgia's aspiration.

Figure 1. Inglehart-Welzel World Culture Map 2023.



Traditional values emphasize the importance of religion, parent-child ties, deference to authority and traditional family values. People who embrace these values also reject divorce, abortion, euthanasia and suicide. These societies have high levels of national pride and a nationalistic outlook. Survival values place emphasis on economic and physical security. It is linked with a relatively ethnocentric outlook and low levels of trust and tolerance. These values are referred to as materialist values. [https://www.worldvaluessurvey.org/WVSContents.jsp?CMSID=findings].

Secular-rational values have the opposite preferences to the traditional values. These societies place less emphasis on religion, traditional family values and authority. Divorce, abortion, euthanasia and suicide are seen as relatively acceptable. (Suicide is not necessarily more common.)

Self-expression values give high priority to environmental protection, growing tolerance of foreigners, gays and lesbians and gender equality, and rising demands for participation in decision-making in economic and political life. These values are referred to post-materialist values [https://www.worldvaluessurvey.org/WVSContents.jsp?CMSID=findings].

According to Inglehart [European Values Study 2017-2022], advanced Western societies experience a shift from materialist to post-materialist values. Material values express the need for economic and financial security, societal stability, personal safety, and law and order. Post-materialist

values refer to the need for political freedom and participation, self-actualization, personal relationships, creativity, and care for the environment.

One important finding is that both – Materialist vs. Post-Materialist and Autonomy Indexes for Georgia show the value transition process.

- **Materialist vs. Post Materialist Index:** Materialist – 42.8%; Mixed – 51.7%; Post Materialist – 0.8%
- **Autonomy Index:** Obedience – Religious Faith – 28.8%; Mixed – 38.5%; Determination-Perseverance – 32.7%

Operational Code analysis also reflects this mixed nature of Georgia’s value shift in that its philosophical beliefs not always match its instrumental beliefs – confidence in the EU showing a higher consistency.

*Table 1. Philosophical Beliefs vs. Instrumental Beliefs.*

| Philosophical Beliefs       |              | Instrumental Beliefs   |   |
|-----------------------------|--------------|--|---|
| Confidence in Democracy     | 79.3%        | Having a strong leader who does not have to bother with parliament and elections | 53.8%   |
| Importance of Democracy     | 54.1%        | People obey their leaders  | 11.3%   |
| Confidence in Politics      | 38.7%        | Would never attend peaceful demonstrations                                       | 60.6%   |
|                             |              | Would never join strikes   | 80%   |
| Confidence in Churches      | 87.1%        | Membership of Churches or Religious Organizations                                | Not a member – 79%<br>Inactive member – 14.1% |
|                             |              | Attendance of Religious Services   | Only on Special Holidays – 25.5%              |
| <b>Confidence in the EU</b> | <b>47.6%</b> | <b>I see myself as the citizen of the EU</b>                                     | <b>41.3%</b>                                  |

Another finding is that current (immediate) economic situation impacts Georgia’s diagonal move on the World Cultural Map. The sharpest shift towards traditional and survival values for Georgia happened during pandemic [WVS 2005-2020 / Inglehart-Welzel World Cultural Map, 2020]. Since then, Georgia has not returned to its highest position on the World Cultural Map’s diagonal: From 2005 to 2009, Georgia had the trajectory towards secular-rational and self-expression values, and it was ahead of its two neighbors in the South Caucasus – Armenia and Azerbaijan.

Georgia associates development of the Middle Corridor concept primarily with its economic development. So do the main strategic partners of Georgia supporting the country.

“I took the note of the role and ambition that Georgia has in becoming a hub and a key participant, a key player in the Silk Road. I believe that this is an opportunity that the government will not lose. I am convinced in the political buy-in in this one, because there are a number of projects that the realization of which will make a difference in Georgia’s economic growth and the prosperity of the people. Just picking one or two: we are talking about connecting Georgia with Azerbaijan in a bigger context and there are infrastructure projects that we discussed like the railway, or the Anaklia Port, the airport. I can imagine that the realization of these projects will bring new skills, new economic impetus in the country.” Alkis Drakinos - Director, Regional Head of Caucasus, EBRD [<https://www.youtube.com/watch?v=svM95UUQeuo>].

“This region has been having multi-crisis, poly-crisis I would say. As we know there are geopolitical tensions but also after COVID, we noticed a huge issue about supply chains followed by the Russian invasion of Ukraine. We saw huge differences in trade flows and lots of challenges in gas supply to Europe and also Europe deciding to de-couple from Russian energy market; so, energy prices increased creating huge energy crisis. Georgia in particular is a country that has been thinking about – because of its geopolitical situation – how to bring countries together around major infrastructure – Georgia being at the center of an important region trying to get countries to have a common vision. I’m starting to hear a common around the connectivity, around regional energy trade, around the middle corridor for logistics and trade facilitation, and also the opportunities around digitization, which we think at the World Bank will create huge impetus for job creation for economic growth”... Charles J. Cormier - Regional Director

for Infrastructure for ECA, WB [<https://www.youtube.com/watch?v=qbG7u5aOdWc>]

“My impression was of the strategic importance of what the country – Georgia – means and the strategic importance for the economic development of Georgia and the Caucasus and the Western Asian countries. The Middle Corridor is definitely a strategic infrastructure that can enhance cooperation and develop and foster the economic development, trade and investment and can bring not only public but also private capital at place to help the sustainable development of the whole region” ... Roberta

Casali - VP, ADB [<https://www.youtube.com/watch?v=Yau37axZQg0>]

According to the Inglehart-Welzel World Cultural Map, following an increase in standards of living, and a transit from development country via industrialization to post-industrial knowledge society (in line with the expectations of Georgia’s strategic partners stemming from the opportunities the Middle Corridor poses for Georgia) , a country tends to move diagonally in the direction from lower-left corner (poor) to upper-right corner (rich), indicating a transit in both dimensions. This is where most of EU countries are positioned on the World Cultural Map. This is where Georgia views itself.

Towards this end, Georgia will be ready to embrace its regional identity to the extent it does not raise eyebrows on the ultimate goal – whether Georgia is Western enough or not (Kvanchilashvili, & Pirtskhalava, 2023). It is expected that Georgia identifies with the Black Sea Region only if it plays a role in its daily life. Middle Corridor leaves the room for Georgia to remain in its value comfort zone to view the Black Sea region as the means of utilizing its main- transit role and contributing to the economic development, on the one hand and on the other, doing so without narrowing down to only Black Sea Regional cooperation but rather as means to connect East with West – namely, with Europe.

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## **VIOLENCE RISK APPRAISAL AND LEGAL PRINCIPLES – FROM LEGAL PERSPECTIVE TO PRACTICAL APPLICATION**

**Martina Feldhammer-Kahr<sup>1,2</sup>, Nina Kaiser<sup>2</sup>, Ida Leibetseder<sup>2</sup>, & Martin Arendasy<sup>1</sup>**

<sup>1</sup>*Department of Psychology, University of Graz (Austria)*

<sup>2</sup>*Department of Criminal Law, Criminal Procedure Law and Criminology, University of Graz (Austria)*

### **Abstract**

The study of the mind and behavior gives us the opportunity to predict and to change behavior. In forensic psychology, examinations either try to give an answer, if the person was aware that the crime broke a social norm and was able to control his behavior, or tries to give an answer, if an offender will become a reoffender. The Austrian jurisprudence also focuses on aspects of behavioral prognosis: the verdict should not serve retaliative purposes, but aims at preventing the offender from reoffending. Building on this subordinate principle, that defines justice systems focused on prevention rather than punishment as means of retaliation, judges have to follow legal provisions that put an emphasis on factors related to the individual offender and their current risks and needs. This presupposed individuality and topicality of penal decision making requires the interplay of different scientific perspectives and a strong interdisciplinary practice. Therefore, psychological risk appraisal guides are used to provide valid indicators for recidivism risks leading to a beneficial development towards an interdisciplinary sentencing practice. Nevertheless, in light of the absence of substantive discussions of the expert's opinion in court and yet the high rates with which the court follows the expert opinions often by simply incorporating the opinion verbatim into the verdict (94.7% in sex offenses-cases, 95.1% in homicide-cases, 88.6% in arson-cases) this supposedly interdisciplinary, rather multidisciplinary legal practice bears risks (Fegert, 2006). By looking closer at the German versions of the VRAG-R (Rettenberger et al., 2017) and the LSI-R (Dahle et al., 2012), it becomes visible that some aspects of the tools have to be critically reflected from a legal perspective when incorporated into Austrian criminal proceedings. If adapted unquestioned, the application of this tools leads to fundamental legal questions and potential infringements. The underlying research focuses on revealing these contradictions between the two sciences, while implementing the tools into criminal proceedings and thus aims at paving the way towards an integrative rather than merely additive type of interdisciplinarity. Practical implications for the psychological assessment need to be considered.

**Keywords:** *Violent risk assessment, risk instruments, legal principle, interdisciplinarity.*

### **1. Introduction**

In the Austrian justice system, especially in Austrian criminal law, there is a focus on behavioral predictions, driven by a preventive justice approach. Sentences aim to deter individual offenders from reoffending (specific deterrence) and to prevent the general population from committing crimes while strengthening the public's awareness of the legal consequences of criminal behavior and the enforcement of these consequences (general deterrence). According to prevailing opinions, criminal judgments should primarily serve specific deterrent purposes (cf. Jerabek & Ropper, 2020). This leads to a focus on offender-related factors and ultimately to the need of an individual-centered prognoses, that the law alone cannot provide. Thus, judicial officials need to consult and integrate non-legal disciplines (Kastner, 2019). This is generally done by appointing expert witnesses who provide their professional opinions on the grounds of their findings through thorough exploration and application of the proper tests (see: Kastner, 2019). However, the integration of "foreign" disciplines in legal proceedings with the aim of seeking empirically grounded facts, brings both opportunities and new challenges (Glatz & Aicher, 2019). Every science has its own perception of entities, which leads to divergent paradigms, attitudes and premises (cf. Bock, 2017; Gerhardt, 2014; Kuhn, 1969; Watzlawick, 2018; Weber, 1968). Hence as the cornerstone of the legitimacy of interdisciplinary work every integration of a "foreign" discipline, such as

psychological-statistical prognostic instruments in legal proceedings, must be evaluated in a discipline-specific way.

In law, there is little corresponding discourse on the content and foundation of applied prognostic tools. Nevertheless, in criminal proceedings it is the judge's responsibility to evaluate expert opinions provided, like any other evidence. However, in practice, such an evaluation is scarcely evident during proceedings (Kastner, 2019). Fegert et al.'s (2006) examination of expert opinions in sexual offense cases in Germany (N=38) revealed that 31.6% showed blanked approval without hesitation. 10.5% judges did not even rephrase the expert's opinion and 21.1% rephrased the text from the report, both groups did not discuss the content. 10.5% rephrased the assessment report and did discuss the content. 7.9% considered the content without mentioning it. 13.2% followed the verbal report of the expert witness. Approximately, 95% did follow the expert witness. This is not merely a habit in dealing with predictions for sexual offenders. This study also shows a lack of evaluation in culpability assessments, which conclude an overall adoption rate of culpability assessments for sexual offenders of 95.1%, and for homicide and arson offenses, of 88.6%. This suggests that critical reflections of witness reports are rather rare. Due to the broad similarities in the legal systems, we can assume a similar situation in Austria. Judges are trained in legal matters but have not built up an expertise in psychological assessments and psychiatrists as well as psychologists are experts in their field but are not trained in law. This bears the risk that incongruencies in the scientific approaches are overlooked. Both parties might perform their own discipline flawless without noticing the missing link of mutual reflection in the realm of an effective integrative interdisciplinary work that actually guarantees compatibility and validity. The danger associated with ignoring the necessary moderation of interdisciplinary cooperation will be illustrated below by examining four problem areas (individuality, timeliness, presumption of innocence and adopted values of foreign law) arising with the application of the VRAG-R (Rettenberger et al., 2017) and the LSI-R (Dahle et al., 2012), two of the most common actuarial risk assessment instruments in Austrian correctional facilities.

## 2. Individuality and timeliness

By ensuring that the punishment is primarily intended for specific deterrence, the legislator expresses its focus on the individual case and the individual offender in criminal proceedings. This brings to the fore those behavioral and personal sentencing criteria that can address and capture the offender in his social and behavioral context. This seems to be correct insofar as the results of criminological studies indicate that individual offenders do not differ in those risk factors such as "broken home" or social class. Instead, differences become apparent upon closer examination of *social conditions* (Bock, 2018; c.f. Walton, 2022). Thus, it seems perplexing that the challenge of necessary individualization in criminal proceedings is addressed most of the time with merely a nomothetic research logic, which requires establishing regularities and thus generalization, although also modern psychological diagnostics recommends a combination of nomothetic and explanative approaches for the assessment (Schmidt-Atzert, Krumm, & Amelang, 2021). Such generalization can indeed serve as additional evidence in proceedings, but it would need to be appropriately weighed by the judge, which, as the above-mentioned study shows, is hardly happening. The current practice thus might violate the principles of Austrian criminal law, when allocating individuals merely to a risk group (cf. Bock, 2017; Brettel, 2022; Höpfel/Ratz, 2023). Additionally, deciding on the necessary criminal law interventions for an individual by mere statistical membership of a risk group seems to neglect the fatality of alpha (false positive) errors in statistical procedures when used in legal proceedings. Can sentences be legitimized if they knowingly and deliberately accept wrong decisions in individual cases in favor of a rule-based overall view? It seems not to be in the interest of a modern, individual, prevention-oriented sentencing practice. When looking closer at specific types of assessment tools these concerns regarding the lack of individuality become more concrete. One of the most used second-generation tools is the Violence Risk Appraisal Guide (VRAG-R; English: Quinsey et al., 2006; German: Rettenberger et al., 2017). Studies have shown, that the VRAG-R shows good predictive validity for violent offenders (e.g. Rice, Harris & Lang, 2013) and the criteria of objectivity is given (cf. Fletcher et al., 2022). But regarding the need of a person-centred prognoses, it seems concerning that neither the motive nor the psychological functioning of the offenders are taken into account (for further reading: Rossegger et al., 2011). On the other hand, there are various items which could be criticized regarding content validity (Rossegger et al., 2013). For example, Item 1 deals with the "separation from either parent (except death) under the age of 16", which does make sense considering the test construction process, where the authors searched for variables which highly correlate with recidivism (Rossegger et al., 2013). Nevertheless, we would have to take a look on the specific case, because it could still be preferable to be separated from a violent parent or a toxic environment. Using such indicators without taking a closer look to the particular case may present a problem with the criteria fairness and objectivity.

Another fundamental principle of a preventive justice approach focused on specific deterrence is that the sentence and its imposed interventions are based on present circumstances. It is essential to ensure a prognosis that is sensitive to changes, responding appropriately to potential alterations in criminologically relevant factors, remaining dynamic, and not solely focusing on aspects related to the past. Looking again at the VRAG-R one major problem is that there are mainly static variables included and changes in the life of the offender do not affect the score and therefore the predicted level of risk (cf. Rosegger, Gerth, & Endrass, 2013). If the level of change is not measured the offender has no possibility to get a lower estimated risk and thus the assessment tool does not meet the requirements of the procedural law. On the contrary, the so called third generation risk assessments (e.g., Level of Service Inventory–Revised English: LSI-R; Andrews & Bonta, 2001; German: Dahle, Harwardt, & Schneider-Njepel, 2012) include dynamic items and allow the documentation of needs and changes (Rosegger et al., 2011). The LSI-R considers changes in several areas (e.g., education/employment, companions, emotional/personal). In this way the offender has the possibility to get a lower estimation of their risk level. Although, this assessment tool seems to fit better for the purpose at hand, it includes 10 items regarding to the criminal history and being an offender with multiple convictions even if the records of violence cannot be changed. So it can be hard for individuals with a criminal record to get a low probability (< 15%) no matter what changed in their individual lives. It should be noted, that the LSI-R score alone cannot be used to predict the recidivism (c.f. Dahle et al., 2012; Harwardt & Schneider-Njepel, 2013), nor should others. In fact, it should be used for the assessment of needs and changes. The mentioning of concrete estimated recidivism rate, on the base of the LSI-R raw score, gives a deceptive sense of security in the decision-making process of the court.

### 3. Presumption of innocence and adopted values of foreign law

In addition to the purpose of punishment, fundamental procedural rights suffer from an uncritical incorporation of statistical figures into the judgment. Item 5 and Item 8 of the VRAG-R addresses the assessment of the criminal history, drawing on the Canadian system by Cormier and Lang, based on the earlier version by Akman and Normandeau (1967) for classifying violent and non-violent offenses. Offenses in the subjects' past are evaluated with a predetermined score, which is then added up. The descriptions in the Items of the VRAG-R manual add that in cases where there is a discrepancy between the charge and the conviction, the more serious of the two should be used, which will often be the indictment (Rettenberger, Hertz, & Eher, 2017). Therefore, the VRAG-R explicitly allows scoring not the actual offense the individual was convicted for in accordance with the rule of law but the suspicion and thus an initial assumption that has not (legally and/or factually) proven to be true. Undoubtedly, the result of a statistical analysis may indicate a certain correlation between the content of charges and subsequent recidivism. However, the principles of the presumption of innocence, as well as the dominant principles *nullum crimen, nulla poena sine lege* (“no crime, no penalty without law”) are particularly crucial for the rule of law in penal practice, which is why undermining these principles through the use of psychological tools that do not follow these premises should be carefully reconsidered with respect to potential infringements.

It is also worth reflecting on the fact that the Cormier-Lang system is based on Canadian criminal law, the Criminal Code of Canada, which, in turn, is rooted in British Common Law. In this way, the Cormier-Lang system assesses behavior that, in individual cases, might not be punishable by Austrian law. For example, “possession of items for burglary” or “wearing a mask with the intention of committing a crime” might not reach the threshold of a criminally punishable attempt stage under Austrian law. In addition, there is also the risk of scoring behavior that is under no circumstance punishable by Austrian criminal law (e.g., “exhibitionism” and “disturbance”) and yet has an influence on a prognosis that can aggravate the sentence. This indirect influence of the system and values of foreign law is problematic one should be aware of when applying and evaluating the results.

### 4. Conclusion

Risk assessment puts the legal system and all involved to test. One has to take a closer look which parts of the decision-making process already work and in which one’s there still has some work to be done to bridge disciplinary divides and meet both legal and assessment criteria. In doing so, we have the opportunity to increase the fairness for the individual (decrease false positives) and meet the requirements of Austrian law. After all, interdisciplinarity does not simply mean drawing on the insights of other sciences (instrumentalizing interdisciplinarity) or explaining one science through the methods of another (additive interdisciplinarity). Instead, integrative interdisciplinarity demands examinations from



different methodological perspectives with the aim to critically reflect our own methods (defamiliarizing interdisciplinarity) (Wallner, 1991).

Only through this approach can we collaborate effectively. Instead of merely collecting blocks of knowledge, we can build a solid foundation through meaningful integration, capable of addressing future challenges. It requires this integrative interdisciplinarity to prevent potential blind spots, such as the one discussed here. A redefinition of exchanges in the field of criminal science is necessary.

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## THE INFLUENCE OF BILINGUALISM ON LEXICAL ACCESS AND CATEGORIZATION PROCESS IN PRIMARY SCHOOL CHILDREN

Samira Bouayed<sup>1</sup>, Annamaria Lammel<sup>1</sup>, & Louise Goyet<sup>2</sup>

<sup>1</sup>*Paragraphe Laboratory - EA349, Université Paris 8-Vincennes-Saint-Denis (France)*

<sup>2</sup>*DysCo Laboratory MCF, Université Paris 8-Vincennes-Saint-Denis (France)*

### Abstract

Studies have highlighted that bilingualism appears to facilitate communication (Dieguez & Hemmerle, 2014; Bialystok, 2017) and has beneficial effects on the emergence and development of cognitive abilities (Kail, 2015). Children who just start using two languages, frequently switch between languages, namely code switching. They used words from both languages and these seem to play an important part on language acquisition process. Bialystok & Martin (2004) have shown that bilinguals develop the ability to inhibit one language while using the other, thus accelerating cognitive development which includes perception, attention, memory, inhibition, cognitive flexibility, programming, planning. Other studies (Bialystok et al., 2008) have also demonstrated that exposure to two linguistic systems may enhance flexibility and cognitive inhibition capacities in bilingual individuals, which can confer an advantage during categorization tasks requiring changes in categorization criteria and the suppression of irrelevant information or responses. The aim of the present study is to examine whether bilingual children aged between 6 and 8 years-old could access to lexico-semantic store more easily than monolinguals. Firstly, drawing upon existing theories and empirical evidence, it is posited that bilingualism potentially enhances access to the lexico-semantic store due to the necessity of engaging with and navigating two linguistic systems. By investigating this phenomenon in young children, this study aims to ascertain whether these purported advantages in lexical access are discernible at an early developmental stage. Secondly, this research is predicated on the hypothesis that bilingual children, within this age range, exhibit a heightened comprehension of words and their meanings across both languages. It is conjectured that the comparatively facile access to the lexico-semantic store could serve as an indicator of an early and robust development of linguistic competencies in bilingual children, suggesting a more advanced level of language comprehension and cognitive engagement compared to their monolingual counterparts. In this study, 20 French-Arabic Bilingual children and 20 French Monolingual children aged between 6 to 8 years-old (all participants lived in France and were recruited in primary school: grades 1 and 2) performed a verbal Fluency Task (Cardebat et al., 1990; Abdelgafar & Moawad, 2015). The verbal fluency task is a short test of verbal functioning. It consists of two tasks: category fluency (semantic fluency) and letter /lexical fluency (phonemic or lexical fluency). Participants are given 2 min to produce as many words as possible within a semantic category (category fluency) or starting with a given letter (letter fluency). The participant's score in each task is the number of unique correct words. The results of the study show for the categorical fluency task an advantage for a bilingual for accessing categorical lexico-semantic storage. No difference was observed in the lexical fluency task.

**Keywords:** *Bilingualism, fluency task, lexical access, cognitive flexibility and inhibition, children.*

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### 1. Introduction

During the first years of life, children develop many language skills. These skills play a fundamental role in child cognitive and social development. These skills extend beyond mere verbal elements (words) to encompass a range of non- and para-verbal elements of communication such hand gesture, eye movement, body posture, facial expressions and intonations. Regarded as a psychosocial perspective, also language could facilitate the transmission of informations within communicative interactions, thus constituting both an individual behavior and a social process.

### 1.1. Language and Cognitive Construction

This understanding of language is rooted in the works of the linguist and anthropologist Dell Hymes (1972), who emphasized that a complete understanding of language can only occur when it is contextualized within its social and cultural environment. Viewing language as an interconnected process between the individual and society, this study aims to explore the access abilities to the lexico-semantic store in bilingual and monolingual children. Inspired by Lammel's (1997) study which explore the relationship between culture and categorization, this research aims could help to understand how linguistic experiences influence the mental construction of lexicon and the elaboration of concepts, in children.

### 1.2. Bilingualism and Cognitive Development

Within this study, particular attention will be dedicated to the intricate phenomenon of bilingualism in children, where the acquisition of two distinct languages creates a unique linguistic context. Bilingualism, as a daily reality for a growing number of children, raises significant questions regarding how these individuals structure and categorize their cognitive lexicon. Theories of bilingualism have often oscillated between perspectives that consider languages as separate and independent (Grosjean, 1998) versus those that perceive them as interconnected and mutually influencing cognition Kroll & Bialystok, 2013). This dichotomy prompts relevant inquiries into how bilingualism could modulate cognitive development in children, especially in a context where languages can coexist and interact (Bialystok, 2009). The aim of this current research is to explore whether bilingual children aged between 6 and 8 years access the lexico-semantic store more easily than their monolingual counterparts. It is conjectured that the comparatively facile access to the lexico-semantic store could serve as an indicator of an early and robust development of linguistic competencies in bilingual children, suggesting a more advanced level of language comprehension and cognitive engagement compared to their monolingual counterparts. To attempt to validate this hypothesis, a verbal fluency task (lexical/letter and categorical) was administered to two groups of children (monolinguals and bilinguals) aged from 6 to 8 years-old.

### 1.3. Verbal Fluency Task and Involved Executive Functions

The verbal fluency tasks are employed to assess rapid access to the lexical and semantic reservoirs in long-term memory, concurrently evaluating the executive processes associated with this lexico-semantic access. Categorical fluency task relies on semantic categories commonly used in everyday language, whereas letter fluency task is based on phonological criteria to access the lexicon. In categorical fluency task, participants generate a maximum of words belonging to a specific category, such as animals. For letter fluency task, participants articulate words starting with a specific letter, such as 'P'. These two tasks engage executive processes essential for verbal retrieval and production from the lexico-semantic store (Lezak, 2004; Seron & Van der Linden, 2014) and on search strategies in long-term memory. These tasks also involve inhibiting process to suppress activation of repeated and/or irrelevant responses. The observed transition process in categorical fluency tasks requires cognitive flexibility to shift from one semantic grouping to another (Troyer et al., 1997; Henry et al., 2004). A research from Bigler (2012) have shown a greater production of correct words during Categorical fluency task compared to letter fluency task, both in children and adults. This discrepancy suggests enhanced access to semantic networks during letter fluency task, likely due to the use of less controlled retrieval strategies. However, during letter fluency task, more rigorous executive strategies appear to be engaged to evoke words. This analysis of recall mechanisms in letter fluency task raises questions about the relationship between verbal fluency and the ability for switching.

### 1.4. Verbal Fluency and Switching

Switching, the ability to shift from one sub-category to another, is influenced by the functioning of the frontal lobe. It involves the implementation of search strategies and spontaneous flexibility, considered a cognitive effort that relies on controlled processes. Optimal performance in verbal fluency involves the ability to group words and switch to a new category once the first one is exhausted. Differences in production are observed between phonemic and semantic fluencies, with larger word clusters and fewer switches for semantic fluency, while phonemic fluencies are characterized by smaller clusters but associated with a greater number of switches. These findings regarding the role of switching and clustering strategies in different verbal fluency task performances highlight the interest in exploring the relationship between oral verbal fluency and semantic memory. The intricate relationship between cognitive processes involved in switching, clustering strategies, and their impact on verbal fluency tasks underscores the significance of exploring the interplay between oral verbal fluency performance and the domain of semantic memory.

## 1.5. Oral Verbal Fluency and Semantic Memory

Semantic memory plays a crucial role in tasks involving fluent verbal production, particularly those requiring the manipulation of meanings, thereby assessing access to lexical and semantic knowledge. These tasks involve the activation and utilization of semantic memory networks to extract and articulate specific words related to a defined category (Lezak, 2004). According to Seron and Van der Linden (2014), these fluent verbal production tasks necessitate the involvement of semantic memory to access stored information about concepts, categories, and word relationships. Semantic memory is responsible for representing knowledge related to word meanings, objects, actions, and conceptual relationships—crucial elements for tasks involving fluent verbal production, where individuals must generate words associated with a specific category (De Oliveira Santana & Pimentel, Dos Santos, 2015). Research underscores that performance in these tasks relies on the richness of an individual's personal semantic network and the quantity of available elements in the language for a given category (Gierski & Ergis, 2004). Understanding the pivotal role of semantic memory in tasks requiring fluent verbal expression and the intricate cognitive processes involved, the ensuing section delineates the methodology employed to investigate the dynamic interaction between semantic memory networks and verbal fluency tasks.

## 2. Methods

In the context of numerous investigations exploring the effects of bilingualism on executive functioning, a noteworthy gap exists in studies specifically examining French-Arabic Bilinguals. The frequent coexistence of these two languages in the Seine-Saint-Denis department (93) motivated to focus on these languages. To address the research gap, an experiment was conducted involving French-Arabic Bilingual children and French monolingual children from 6 to 8 years old. The aim of this study is to observe whether bilingual children access the lexico-semantic store more easily than monolinguals. In regard, we intend to compare the linguistic productions of French-Arabic Bilinguals children with those of monolingual French monolingual children aged from 6 to 8 years old. The choice of this age range was motivated by considering crucial phases of linguistic and cognitive development in children. The specific period, spanning from 6 to 12 years old, has been identified as a decisive phase where children are actively engaged in acquiring and developing their vocabulary and linguistic skills. Furthermore, it corresponds to a critical phase where significant variations in the ability to access the lexico-semantic store are often observed, directly linked to the progressive and continuous development of linguistic and cognitive abilities in children. The study's issue is as follows: Do bilingual (French-Arabic) children aged between 6 and 8 show differences in accessing lexical and semantic knowledge compared to monolingual (French) children of the same age group? The fundamental objective of this research is to compare the performance of French-Arabic Bilingual and French Monolingual children, aged 6 to 8, on tasks evaluating their linguistic competencies, specifically categorical fluency and letter fluency. This comparative approach aims to highlight the potential advantages resulting from the acquisition of two languages (French and Arabic) in accessing the lexico-semantic store in children.

### 2.1. Participants

This study involved the participation of 40 children, aged between 6 and 8 years ( $M = 7.4$ ,  $SD = 0.67$ ). This group contained 20 Bilingual children exposed to both languages (French and Arabic) from birth due to their parents' immigration; children from mixed families; and children with African origin ( $M = 6.8$ ,  $SD = 0.6$ ) and 20 French Monolingual children ( $M = 7$ ,  $SD = 0.80$ ).

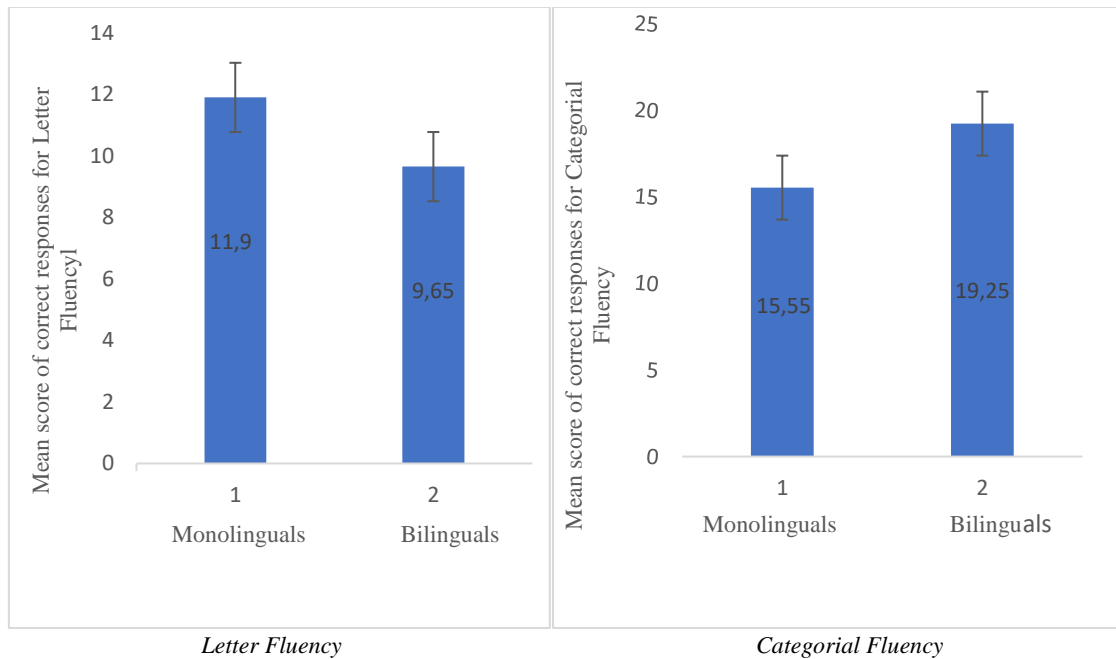
### 2.2. Material

Two oral verbal fluency tasks were employed in this study: the categorical fluency task and the lexical fluency task (Cardebat et al., 1990). The aim of these tasks was to assess the children's ability to access their lexical repertoire. The letter and categorical fluency tasks were selected to evaluate the subjects' ability to access their lexical repertoire, aligning these assessments with the specific purpose of this study, which aimed to explore differences in terms of mental flexibility and cognitive inhibition between bilingual and monolingual children. The letter fluency task required participants to verbally generate as many words as possible within a two-minute timeframe, starting with a specified letter, such as the letter "P". The categorical fluency task required participants to verbally generate as many words as possible within a two-minute timeframe. During these tasks, the experimenter, situated in front of the participant, meticulously recorded all oral responses provided by the participants, thereby offering a precise means of evaluating their ability to access and mobilize their lexical repertoire.

### 3. Results

The average score of correct responses on the Letter Fluency task is higher for monolinguals ( $M=11.9$ ;  $SD=3.09$ ;  $Range=11$ ) compared to that of bilingual children ( $M=9.65$ ;  $SD=4.29$ ;  $range=17$ ). However, despite this disparity, the independent Student's t-test results indicate a slight but non-significant variation,  $t_{(38)} = 1.90$ ;  $p=0.06$  (cf. Figure 1). The average score of correct responses on the Categorical Fluency task (animals) is higher for bilingual children ( $M=19.25$ ;  $SD=6.06$ ;  $Range=22$ ) compared to monolinguals ( $M=15.55$ ;  $SD=5.02$ ;  $Range=16$ ). The results of the independent Student's t-test demonstrate a significant difference,  $t_{(38)} = 2.10$ ;  $p = 0.04$  (cf. Figure 1).

Figure 1. Average scores of correct responses (standard error) on both letter and categorical verbal fluency tasks on Monolingual and Bilingual children.



### 4. Discussion

In relation to the obtained result for letter fluency, although monolingual children exhibit a higher average score of correct responses compared to bilingual children, the observed difference does not surpass the conventional threshold of significance ( $p<0.05$ ). Nevertheless, this marginal ( $p=0.06$ ) suggests a noteworthy trend, emphasizing the relevance for a more comprehensive exploration within broader contexts or with larger samples. Nuances in the mental construction of the lexicon among bilingual children might become more evident with an increased diversity of linguistic experiences. It is important to note, however, that the relative ease in detecting effects in this study could be attributed to the nature of the task itself, which is relatively simpler. Letter fluency, despite providing intriguing indications, represents a limited measure of linguistic processing complexity. Consequently, subtle differences in the mental construction of the lexicon among bilingual children might be more apparent in more complex tasks or contexts requiring deeper analysis. The significance of further explorations in more demanding conditions remains crucial for a comprehensive understanding of the specifics of lexical development among bilingual children. Regarding categorical fluency, focused on the 'animals' category, it reveals a statistically significant difference between the two groups ( $p=0.04$ ). Bilingual children present a significantly higher average of correct responses, highlighting a potential advantage in the categorization of specific concepts, despite exposure to two distinct languages. This reversal of results between lexical and categorical fluency may be attributed to the distinct nature of these two cognitive tasks. Letter fluency, centered on word production within a given time frame without thematic constraints, might less highlight differences between monolingual and bilingual children when the latter possess equivalent lexical skills in each language. Conversely, categorical fluency, centered on the specific categorization of words, as in our study on animals, engages cognitive processes of classification and generalization. Bilingual children may benefit from an advantage in this task due to their enhanced ability to conceptualize and categorize information,

thus extending beyond mere lexical skills. Thus, these different results emphasize the importance of considering how different cognitive tasks elicit distinct facets of linguistic and cognitive skills among bilingual children. This suggests that bilingualism may differentially influence lexical categorization processes in children, with distinct nuances between letter and categorical fluency.

## 5. Conclusion

This study makes a significant contribution to our understanding of the intricate interactions between bilingualism and lexical categorization in children. The observed results underscore the importance of considering the specific nature of the cognitive tasks used to assess linguistic and cognitive abilities. Highlighting an advantage for bilingual children in categorical fluency, especially in the categorization of specific objects like animals, suggests greater cognitive flexibility and an enhanced capacity for generalizing concepts within defined categories. However, it is crucial to note that differences between monolingual and bilingual groups may vary depending on the specific task characteristics and linguistic contexts. Hence, further in-depth investigations involving larger and more representative samples from diverse bilingual populations are necessary to consolidate and broaden these conclusions. These future studies could also explore potential effects of linguistic dominance, proficiency levels in each language, and different language acquisition modes on lexical categorization in bilingual children. Moreover, a more thorough consideration of cultural aspects and diversified linguistic experiences within bilingual populations could provide richer insights into how these factors influence the mental construction of the lexicon and conceptual categorization. Furthermore, these studies could explore how varied linguistic environments shape the underlying cognitive processes involved in manipulating and classifying lexical informations.

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# WHAT USE IS THE REPRODUCTIVE IMAGINATION TO THE VISITOR OF A MUSEUM EXHIBITION?

**Colette Dufresne-Tassé**  
*Université de Montréal (Canada)*

## Abstract

This study focuses on three sub-forms of the reproductive imagination identified by Kant. It is carried out in an exhibition on Beringia based on information gathered from 30 visitors of the general-public type. Its aim is to verify the presence of these sub-forms as visitors go through the exhibition, and to propose hypotheses on their role as well as on the museum interventions likely to promote their production.

**Keywords:** *Reproductive imagination, adult visitors, museum exhibition.*

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## 1. Introduction

The museum milieu interest in imagination is very real. Two reviews of English-language publications, one carried out in the early 2000s, the other in 2023, identified a few dozen texts produced by this milieu. However, empirical research in this field is rare, probably due to a lack of an adequate definition and means of study (Dufresne-Tassé, 2006). More specifically, the definitions offered are general and focus on the distant repercussions of imagination rather than on its immediate manifestations.

Bedford (2004), for example, considers that imagination helps to understand exceptional characters or situations, and leads to personal transformations and profound social commitments. Such a conception is probably right, but it is of little use when considering the imaginary production of a visitor browsing a museum exhibition.

The second difficulty stems from the impossibility of accessing imaginary production through the means commonly used to gather information from a visitor, i.e. the observation of her/his behavior without her/his knowledge (tracking), a questionnaire or an interview used once visit is over. Clearly, the imaginary production of a visitor is beyond simple observation and only poorly revealed through a questionnaire or an interview used when a visitor is about to leave the exhibition. Indeed, the latter two instruments only deliver the memory of what the visitor has imagined. This memory, which is almost always a "reconstruction", is both limited and highly inaccurate (Savard, Savard and Dufresne-Tassé, 1994).

One will look hereafter at how the two previous difficulties were overcome, then at the orientation of the study that was carried out, and finally at some of the perspectives it suggests.

### 1.1. Finding a solution to the above difficulties

The development of a means of accessing the imaginary functioning made it possible to develop an adequate definition of this functioning.

**Means:** In order to access a visitor's imaginary functioning at the very moment she/he is browsing an exhibition, my team adapted a technique known as Thinking Aloud (Ericsson and Simon, 1993). This is an approach widely used to study phenomena such as problem-solving, text comprehension, usability testing or even expert examination (see for example: Boren and Ramay, 2000; Denney, 1989; Khramer and Ummelen, 2004; Kukan and Beck, 1997; Van de Wiel, 2017). Its adaptation consists in asking a visitor who is arriving at the museum to make the visit at her/his own convenience, while saying as she/he goes along what comes to mind - what is thought, imagined or felt - to express it "as it comes", and without worrying about holding it back, explaining it or justifying it, as this will not be asked. What the visitor says – her/his “discourse” – is audio-recorded by a researcher who accompanies the visitor without intervening. The recording is transcribed in writing and analyzed in this form.

**Definition:** A study of a few hundred visitor's discourses collected as described above, and the examination of recently proposed definitions (see, for example: Abraham, 2020; Tateo, 2015), enabled to arrive inductively at the following definition: imagination is the visitor's capacity or power to evoke and represent that which is not present with her/him in the exhibition room. This may be a phenomenon, a



"thing" occurring prior to the visit, concomitant with it, future, potential or even virtual (Dufresne-Tassé, Marin, Sauv , Banna, 2006). Such a definition makes it possible to identify the parts of a discourse in which a visitor uses her/his imagination. By collecting several of these, one can create a corpus and proceed with its analysis (Dufresne-Tass , 2023).

## 1.2. Orientation of the present research

Again inductively, two main forms of imaginary functioning were identified in the context of a visit.

**Form 1:** The visitor starts from what she/he observes or reads, and very quickly adds something that takes her/him away from it. *Example:* "My aunt had this sort of shell on her coffee table. She'd taken me and my cousins to the beach. But we'd bought the shell in a store. It was big, big, big in the luggage. It almost stayed in the house we'd rented!" In fact, an eye-catching element in the exhibition becomes the trigger for a series of associations that feed on the visitor's baggage of knowledge and experience.

**Form 2:** As before, the visitor starts from what she/he's looking at, but instead of moving away from it, she/he sticks to it; scrutinizes it, details it, deepens it, completes it, enriches it. Less spectacular than its predecessor, this form nevertheless seems highly important. It would act like Roman mortar; it would hold together the elements of the exhibition: objects, texts, light, furniture, which are in fact merely juxtaposed in space. In so doing, it should "make sense" of the juxtapositions and, in so doing, promote understanding of the exhibition's subject and even enriches it. The research presented below focuses on this form of imaginary production as it takes place in the exhibition room.

**Turning to Kant:** To start investigating the second form of imagination, I borrowed from Kant the sub-forms of reproductive imagination he targets in the Critique of Pure Reason (Kant, 1787-2006), which he calls representational, synthesizing and schematizing. This recourse to Kant is justified by the similarity between the behavior of his reader or listener and that of the museum visitor. To understand what he reads or hears, Kant's subject must make sense of each word he encounters, then go beyond this word by word to make sense of a sentence, and then of several of these. The visitor, for his part, often aided by some text, makes sense of one object, then of the next, then of the following one, and so constructs a "universe of meaning" from elements simply placed side by side.

## 2. Study outline

The study of the three sub-forms of imagination was carried out in an exhibition on Beringia, a region of the world located at the north-western tip of America. It was on display at the Canadian Museum of Civilization, but on loan from the Washington Smithsonian Institution.

The information required was obtained from 30 general-public type visitors, using the approach described above. These visitors were of both sexes, aged between 20 and 65, had completed a high school degree or better, and used to visit museums less than five times a year. Twenty of them visited the exhibition as originally conceived, i.e., in such a way as to encourage appropriation of its content by all available means (henceforth referred to as the first version). The other ten were confronted with a version prepared just before the exhibition was dismantled; the very same objects were presented, but were surrounded by a minimum of text, in line with what one thinks corresponds to the wishes of the general-public visitor (henceforth referred to as the second version).

**Note 1:** For the sake of brevity and ease of understanding, the data presented here cover only a group of five objects forming one of the first sub-sections of the exhibition on winter seal hunting. These are a pair of ice snowshoes, a wild goose-skin parka, snow goggles, a group of harpoons and some decoys.

**Note 2:** The guiding concern of this investigation is threefold: a) verifying the use of the three sub-forms of imagination proposed by Kant in visitors of the general-public type; b) identifying as far as possible the role of each of these forms; c) understanding what facilitates their appearance. It seemed more profitable to approach the information collected from visitors first in a qualitative rather than a quantitative manner. One will therefore not be surprised to find below examples taken from their discourses rather than statistical data; these will be the subject of a future article.

## 3. Data

### 3.1. Representative sub-form of the imagination

**3.1.1. Definition (adapted to the museum situation).** The representative sub-form of the imagination enables visitors to figure, to represent what is physically absent, i.e., to develop images (representations of all kinds) in particular from what they read.

### 3.1.2. Specific context for gathering information from visitors. Ice snowshoes and their label

Table 1.

| <i>Exhibition version 1</i>   | <i>Exhibition version 2</i>                  |
|---|--|
| <b>Text of the label:</b>   |  |
| Ice snowshoes   | Ice snowshoes                                |
| Beringia, 19th century  | Beringia, 19th century                       |
| Nelson Collection, Smithsonian Institution  | Nelson Collection, Smithsonian Institution   |
| These snowshoes have a very strong frame, and a reduced weave. This is deliberate, as putting the foot in the middle, the Beringian is distributing his weight over a large surface area and reducing pressure on the ice. He thus avoids breaking it when it is fragile, and drowning. | A type of snowshoes widely used in Beringia. |

*Examples of what visitors say when confronted with version 1:*

- "It must be scary to hear the ice crack when you walk and there's deep water underneath."
- "I understand, you have to be as light as possible. I don't know if there's any other way?"
- "It must make a lot of noise with big paddles like that, but if it could keep you from drowning!"

*Examples of what visitors say when confronted with version 2:*

- "It's ugly snowshoes!"
- "Bah! snowshoes!"
- "I am not interested in snowshoes!"

### 3.2. Observations and interpretation

1) Visitors confronted with the label of the first version use the representative form of their imagination. Indeed, to be able to express themselves as they do, they must have developed images from what they have read. This is not the case for the visitors who have read the second version.

2) The role of the imaginary production seems to establish a link between what visitors find in the exhibition, the images they develop of it, and their own baggage of knowledge and experience.

3) The way the label is written in the first version seems designed to encourage the use of the representative imagination. Indeed, the text that immediately follows its identifying part quickly invites the visitor to imagine what is happening in a sequence of cause-and-effect relationships, i.e., produce a series of interrelated images. Since this is not the case with the label of the second version, and visitors don't seem to be using their representative imagination in response, one might think that the very content of the label is important and that, in any case, the representative imagination would need a support, an incentive to become productive. On a completely different note, one might also ask whether the explanatory nature of the label in the first version of the exhibition encouraged the production of the representative imagination.

### 3.3. Synthesizing sub-form of the imagination

*Definition (adapted to the museum context):* The synthesizing sub-form of the imagination allows to "fill in the blanks", especially the gaps between objects, by inserting images (representations); the objects in an exhibition are thus linked to one another.

*Specific context for gathering information from visitors:* In both versions, the exhibition presents the snowshoes we have just seen and, right next to them, the goose-skin parka. In the first version, the parka label, like that of the snowshoes, offers an explanation of its characteristics, which is not the case in the second version.

*Examples of what visitors say when confronted with version 1:*

- "Ah yes, the snowshoes are to keep him from drowning, and the parka not to get cold."
- "I can see the guy walking on the ice in his parka. It's not bad!"
- "It's a pity they wear snowshoes in this country, because walking with the parka must be great!"

*Examples of what visitors say when confronted with version 2:*

- "Ah! that's a nice parka!"
- "That's a big coat!"
- "A goose-skin parka, it's not possible. They're talking nonsense!"

*Observations and interpretation:*

1) It seems that visitors to the first version of the exhibition manage, each in its own way, to link snowshoes and parka, while visitors to the second version do not.

2) The link created between contiguous objects increases the exhibition's cohesion, since each object constitutes a semantic island surrounded by emptiness. On the other hand, the repeated creation of links between objects should help visitors to develop the impression that the proximity of objects is deliberate, thought out and meaningful. On the other hand, when this link is not established, visitors should tend to have the feeling that the objects they are looking at are piled up more or less randomly, or placed according to a logic that escapes them.

3) Here as above, one might ask what it is about the exhibition that facilitates imaginary production. Is it the fact that the labels (of the snowshoes and parka) induce the use of representative imagination? Or is it the explanatory nature of the labels, or the fact that these simultaneously possess both characteristics?

### 3.4. Schematizing sub-form of the imagination

*Definition (adapted to the museum context):* The schematizing sub-form allows visitors to use one of their schemes, or the concept of scheme itself to make sense of several objects.

*Specific context in which information is gathered from visitors:* They are observing one last object, and have just completed their tour of the winter seal hunt sub-section. Objects are displayed in each version with the labels seen above, but their order of presentation differs. In the first version, the order closely follows the use a hunter might make of them: snowshoes, parka, goggles to protect against excessive light, then decoys and harpoons. In the second version, on the other hand, the sequence of items - snowshoes, parka, harpoons, decoys and goggles - does not respect this use.

*Examples of what visitors say when confronted with version 1:*

- "When I want to go fishing, I put on my boots, take my fishing rod and put on some mosquito repellent. Well, with this, he's ready to go seal hunting. The scratchy paw is strong! It's easy to catch him with a harpoon."
- "Oum... it's a good thing he had a scratchy paw, because he would have had to wait a long time for the seal!"
- "Phew, it's scary to have to wait for a seal to come up for air so you can feed your family. Luckily, there was the scraper!"

*Examples of what visitors say when confronted with version 2:*

- "The decoy is like a bad wolf paw. It's scary!"
- "It looks like simple a harpoon."
- "Back to the parka. It can't be goose skin. It's too fragile!"

*Observations and interpretation:*

1) What the visitors in the first version of the exhibition say suggests that they have developed a scheme that corresponds to the preparation and execution of a hunt. This scheme constitutes a genuine intellectual construction, crowned by an intellectual leap that both encompasses and surpasses each element of the hunt process. This is not the case for the visitors who are browsing the second version; they are still content to consider each object separately.

2) Because it both encompasses and exceeds the understanding of each object, a schematic vision relieves the visitor's memory, enabling her/him to profitably process several parts of an exhibition encompassing several dozens of objects.

3) It may be thought that the museography details seen above encourage the production of the schematizing imagination, whether through the labels that suggest an understanding of the objects and encourage the use of the representative imagination, or simply through the proximity of the objects, which encourages the synthesizing imagination. If this is true, the production of the schematizing imagination would depend on the successful operation of the representative and synthesizing imaginations.

## 4. Synthesis and perspectives

It seems that: 1) Visitors of the general public type use the three representatives, synthesizing and schematizing sub-forms of the reproductive imagination as conceived by Kant; 2) These three forms can play significant roles in the economy of an exhibition visit; 3) The texts which directly accompany the objects, the proximity of the latter as well as the sequence of their presentation seem to favor the production of the three sub-forms.

The qualitative-inductive approach of the study presented had the stated aim of ensuring the best possible start of deductive verifications. However, it also expected to generate sets of questions that would enrich these verifications. In fact, two series emerged.

*The first series* of questions stems directly from the observations presented here. For example: At what frequencies do the sub-forms studied occur? Are their roles limited to those we have seen? Are the museographic elements already identified as favoring them, the only ones to have this property?

*The second series* arises from a careful examination of the visitor's discourses: A) Can the reproductive imagination be found in museums under other forms than the Kantian ones? For example, would it be possible for interpretations or implications to directly deepen and even enrich the content of an exhibition? B) What roles can the reproductive imagination play vis-à-vis the productive (creative) imagination? Would the first constitute a condition for the appearance of the second? Would the first rather represent a simple enabling condition or, ultimately, in contrast would it harm the processes which underlie the creative imaginary production? C) It seemed that, in an exhibition sub-section, the use of the three Kantian sub-forms of the imagination is accompanied by a real process of construction of meaning. Considering that most exhibitions have several parts, going through them should be a huge building exercise. If this is correct, one can ask under what conditions is this development possible? What does it require from the exhibition? What does it require from the visitor cognitive functioning and what emotional phenomena accompany it? The visitors' speeches analyzed make it possible to identify pleasure and pride. Is emotional functioning likely to appear in other forms? Is fatigue, the famous museum fatigue detectable after a while? D) The observations presented were collected in a "society museum". Are these observations likely to be repeated, and in what forms in art museums or institutions that present living collections? In other words, what roles should the imaginary functioning and its inseparable companions, cognitive and affective functioning, play in these types of institutions?

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# THE ROLE OF HUMOUR AND ABSURDITY IN CREATING MEMORABLE AND PERSUASIVE BEVERAGE ADVERTISEMENTS

**Md Jawadur Rahman, & Gabriele M. Murry**

*Weiden Business School, Institute of Psychology & Behavioral Science,  
Technical University Amberg-Weiden (Germany)*

## Abstract

**Motivation:** Lately, some advertisements use particularly absurd and/or humorous elements to draw attention. We will focus on segments of beverage marketing - in particular, the categories of colas, milk, and water - to investigate the effects of conventional marketing compared to absurd marketing to distinguish memorability.

**Methodology:** In a set-up of marketing campaign pictures (static images) displayed for an even amount of time, examples for all three categories will be provided in randomised sequences within the category to avoid ordering bias. Experimental participants will be a convenience sample of the student population within an academy held in Copenhagen, Denmark. After each stimulus category, brief questions need to be answered based on the memorability concerning the ads. Additionally, we will use biosensors to measure participants' galvanic skin response (GSR), Eye Tracker (ET), and electroencephalogram (EEG) data. An evaluation of participants' bodily responses concerning the ads will take place along with their self-report on memorability. After this, the authors used ideal stimuli to obtain the quantitative results after examining 116 participants' online forms to see how people react to stimuli that have a humorous, absurd, or non-sensical approach. The survey was conducted with the students of OTH Amberg Weiden.

**Results:** Participants will display emotions (FEA) when seeing humorous or absurd ads, focusing more on the campaign's taglines and picking up on clever word games, whereas conventional advertising will not arouse responses (GSR). Similarly, the ET will provide insights into the advertisements' gaze plots and heat maps, which can be correlated with the memorability of logos, brands, and taglines. Through measures of electrodes, the EEG data will indicate whether brain activity in the areas of the frontal lobe was involved in higher mental functions such as judgment, emotional expressions, and concentration while looking at the ads. We expect the same results with the online survey method.

**Recommendations:** Our survey self-report highly correlates with the bio-sensory data collected and indicates that humorous or absurd advertising draws attention and leads to higher memorability.

**Keywords:** *Absurdity, advertising, bio-sensor experimental research, memorability, recognition.*

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## 1. Introduction and theory

The advertising industry has undergone radical transformations, influenced by technological advancements and rapidly changing consumer behaviours (Sprott, 2008). Therefore, it can be challenging to stick to only traditional and conventional marketing strategies. It has become essential to be creative and find new ways to connect with the targeted audience more deeply (Mitra, 2021; Permana et al., 2021).

One strategy has risen to prominence as both promising and captivating, especially within the context of the beverage industry: the strategic inclusiveness of humour, absurdity, and non-sensicality in advertisements (Danatzis et al., 2020). Humour and absurdity are increasingly used as marketing strategies in the beverage industry (Eisend, 2008). However, not all types of humour and absurdity are equally effective, and may also have negative consequences (Flaherty et al., 2004).

### 1.1. Humour, absurdity, and non-sensicality

Humour, in its various forms, can elicit positive emotions, enhance attention, and make messages more memorable (Liu & Chen, 2019). The obviousness and recognizability both exist in humour (Berlyne, 1972).

Absurdity is a state or quality that is unreasonable, senseless, or defies accepted standards of logic and reason (Bal et al., 2022). Absurdity disrupts one's usual thought processes, arousing interest and a desire for cognitive resolution (Metcalf et al., 2021).

Non-sensicality can be described as the characteristic of lacking sense, logic, or rationality (Moore, 2012).

## 1.2. Traditional or conventional marketing vs. contemporary or modern marketing

Conventional marketing means the systematic approach of strategising and implementing the development, pricing, promotion, and distribution of concepts, products, and services with the aim of facilitating conventional marketing methods to make a profit for individuals or businesses. (Sharma et al., 2021).

Contemporary marketing, commonly known as modern marketing, is a modern methodology that utilises technology and data analytics to analyse consumer behaviour and personalise advertising strategies accordingly (Cham et al., 2022). Contemporary marketing techniques prioritise consumer demands over profitability (Keller, 2009).

## 2. Research methodology

To explore how the integration of humour, non-sensicality, and absurdity influences the memorability and recall of beverage advertisements, this research will be an explorative case study combining two methods, qualitative and quantitative. It has been categorised into three popular beverage industry segments: water, milk, and cola-based products. The authors selected 5 advertisements per product category for the qualitative and quantitative approach, some with humour, absurd, and non-sensical elements. With the help of galvanic skin response (GSR), facial expression analysis (FEA), and electroencephalogram (EEG), and eye tracker (ET) tools, software, and devices, the authors assessed the respondents' reactions to those stimuli. Based on the qualitative results, stimuli were selected for the online survey (quantitative study) with a convenience sample of n=116 students of OTH Amberg-Weiden.

H<sub>1</sub>. Humorous, absurd, or non-sensicality increases memorability of beverage advertisements.

H<sub>2</sub>. Positive emotional associations like humor, absurdity, or non-sensicality enhance attention.

H<sub>3</sub>: Contemporary advertising with humorous, absurd, or non-sensical elements is more effective than traditional and informative advertisements in the beverage industry.

## 3. Qualitative and quantitative analysis

The authors experimented with 15 (5x3) stimuli of beverage advertisements, conventional as well as contemporary (with absurd, humorous, and non-sensical elements), as a qualitative study. The FEA-based eye tracker exposed participants' concentration; GSR and EEG provided in-depth insights into participants' psycho-physiological arousal. It is noticeable that most participants were focused on certain parts of the stimulus (see Figure 1) from iMotions exported heatmaps, mostly the product itself.

Figure 1. Heatmaps generated from iMotions.



As part of the experiment, a qualitative survey involving n=10 participants was conducted. For cola products, a notable majority (7) expressed the view that RC Cola's advertisement stands out, primarily due to the presence of a scary-looking bunny. However, upon examining the GSR timestamps,

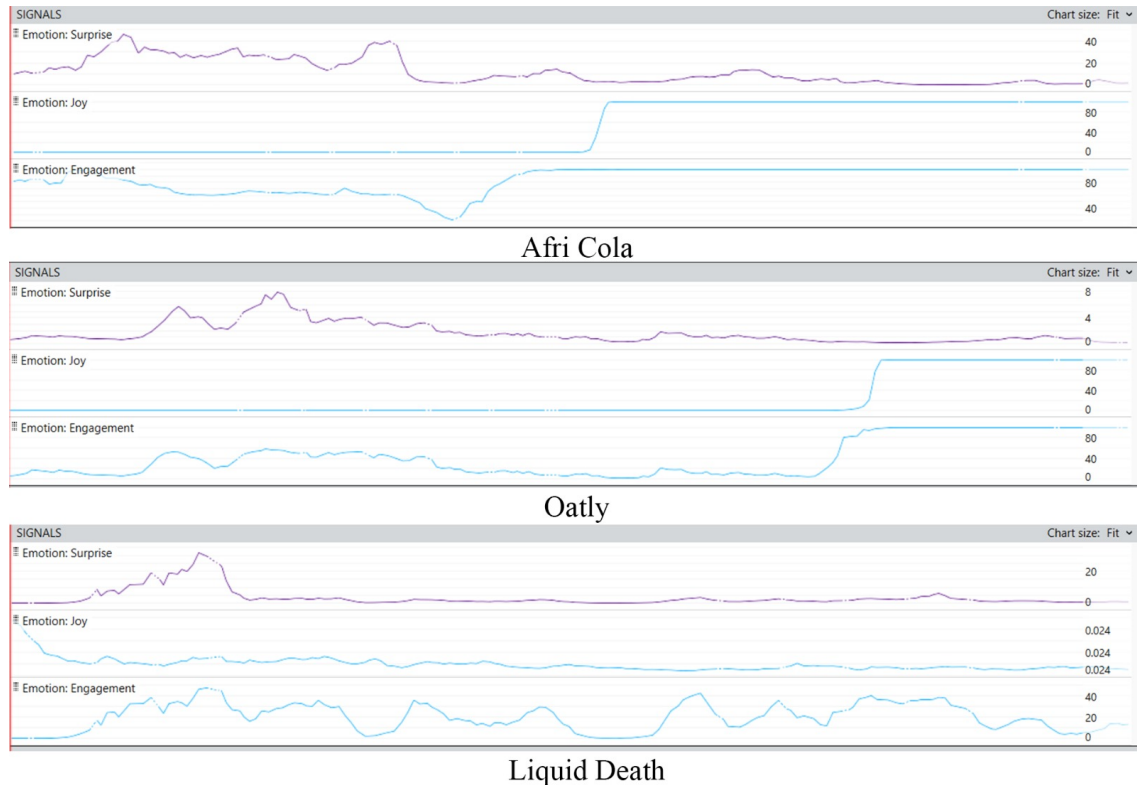
it becomes evident that the number of GSR peaks was higher in response to the fritz-kola advertisement. In contrast, the majority of the peak amplitude, on average, ranged between 0.1000  $\mu$ S to 0.2000  $\mu$ S.

In the milk section, the Oatly advertisement stood out among (8) participants. Meanwhile, milk got a higher peak level.

Liquid Death received the most attention among all other water-based products with a remarkable n=8 respondents attributing it to the brand's distinctive naming style. The generated heatmaps show that the respondents also looked intensively at other water brands as well.

Figure 2, given below, also shows the selective stimuli-based attention span from facial expressions and indicates that each advertisement shown during the experiment was effective and impacted human emotions.

Figure 2. Selected data\* from all three beverage advertisement categories.



\*Note: FEA (Facial Expression Analysis) data collected from iMotions

Based on the data collected via iMotions with the GSR, it is evident that some specific brand advertisements have better peak numbers than other advertisements. In Figure 3, given below, Afri-cola, fritz-kola, and Curiosity cola have the lowest peak levels in the cola section, gotmilk, Silk milk, Nourish, and Oatly have better peak levels, whereas alpro has lower peak levels. Accordingly, Fiji water has a lower peak level in the water section. It indicates that some advertisements impact GSR peaks as they have absurd, humorous, and nonsensical elements.

Figure 3. EEG and GSR peak response toward stimuli (qualitative data).

| 1  | Respondent Name | Afri Cola | curiosity cola | Fritzkola | Kafola | RC cola |  | silk milk | alpro | got milk | nourish | Oatly |  | Fiji Water | Icelandic Wat | Liquid Death | Poland water | Smart Water |
|----|-----------------|-----------|----------------|-----------|--------|---------|--|-----------|-------|----------|---------|-------|--|------------|---------------|--------------|--------------|-------------|
| 2  | Respondent 1    | 0         | 0              | 1         | 1      | 0       |  | 0         | 0     | 0        | 0       | 0     |  | 0          | 0             | 1            | 0            | 0           |
| 3  | Respondent 2    | 1         | 0              | 1         | 0      | 0       |  | 0         | 1     | 1        | 0       | 0     |  | 0          | 0             | 0            | 0            | 0           |
| 4  | Respondent 3    | 1         | 1              | 0         | 0      | 0       |  | 0         | 0     | 2        | 0       | 0     |  | 1          | 1             | 0            | 0            | 2           |
| 5  | Respondent 4    | 2         | 0              | 1         | 1      | 1       |  | 2         | 1     | 2        | 1       | 0     |  | 0          | 1             | 1            | 0            | 1           |
| 6  | Respondent 5    | 0         | 0              | 0         | 1      | 1       |  | 0         | 0     | 0        | 1       | 0     |  | 0          | 0             | 0            | 0            | 1           |
| 7  | Respondent 6    | 0         | 0              | 0         | 1      | 0       |  | 1         | 1     | 0        | 1       | 1     |  | 1          | 1             | 1            | 2            | 0           |
| 8  | Respondent 7    | 0         | 0              | 1         | 0      | 0       |  | 0         | 0     | 0        | 0       | 0     |  | 0          | 0             | 0            | 0            | 1           |
| 9  | Respondent 8    | 1         | 0              | 0         | 1      | 0       |  | 0         | 0     | 1        | 0       | 2     |  | 0          | 0             | 0            | 0            | 1           |
| 10 | Respondent 9    | 0         | 0              | 0         | 0      | 0       |  | 0         | 0     | 0        | 0       | 0     |  | 0          | 0             | 0            | 0            | 0           |
| 11 | Respondent 10   | 0         | 0              | 2         | 1      | 1       |  | 1         | 0     | 1        | 1       | 1     |  | 1          | 1             | 1            | 1            | 1           |
| 12 | Grand Total     | 5         | 1              | 6         | 6      | 3       |  | 4         | 3     | 7        | 4       | 4     |  | 3          | 4             | 4            | 6            | 4           |

The quantitative sample comprises 73 (62.9%) male participants and 43 (37.1%) female participants, resulting in a total sample size of n=116. A significant portion of the participants falls within the age group of 15-24 (47.4%), closely followed by the age group of 25-34 (44.8%). The majority of the

participants are students (77.6%), with about 44% reporting purchasing beverages weekly and 17.2% even daily. This indicates that most of the population is exposed to beverage marketing or beverage products. Most of them might also be familiar with the beverages displayed as a stimulus, which can impact their biases toward purchase decision-making or decision-making towards any answer during the survey (Peighambari et al., 2016).

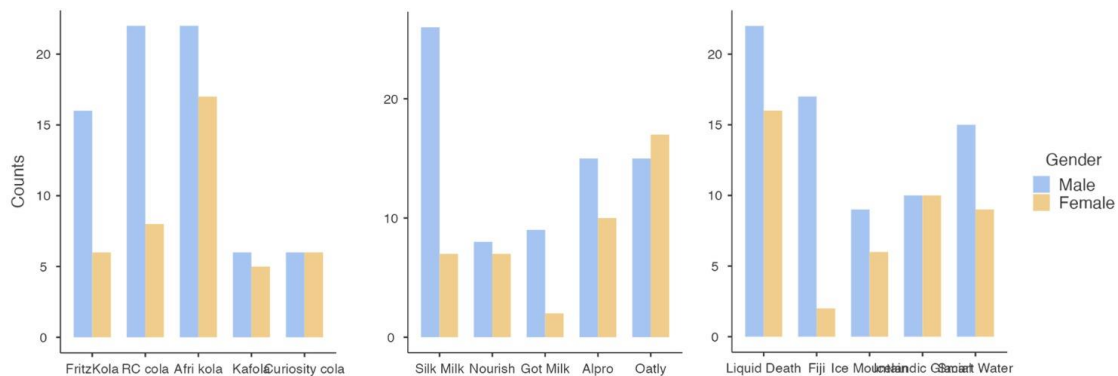
Based on the insights derived from Figure 3, it is apparent that the advertisement for Curiosity Cola lacks elements of humor, absurdity, or non-sensicality. Consequently, it fails to elicit significant psychological and emotional responses from the respondents. This observation correlates with the findings in Figure 4, where the survey results indicate that both Kafola and Curiosity Cola lack the unconventional traits, but do not capture attention as effectively as regular brand advertisements.

In the milk section, based on the peak numbers arrived from Figure 3, it shows that the advertisement of Alpro has the lowest peak count, numbering only 3; on the other hand, Silk milk has the highest peak count of 7. According to quantitative information, Silk Milk is the brand that got the greatest attention throughout and Oatly received more attention from female participants. This can be explained by Oatly being vegan because women are more likely to adopt a vegan or vegetarian diet (Adamczyk et al., 2023). Accordingly, Silk Milk received the most male attention for its humorous advertisement style.

The section on water shown in Figure 3 shows that Fiji water has fewer peak counts, and female participants were less likely to pay attention to the advertisement. However, according to Figure 4, male participants gave it the most attention. Male and female participants were particularly attracted to the Liquid Death advertisement for its absurd naming style.

The evidence supports H<sub>1</sub>, that including humorous, absurd, or nonsensical elements increases the memorability of beverage advertisements and can impact the brand's recall.

Figure 4. Memorability of three categories of beverage advertisement (quantitative data).



After conducting a binomial distribution, the authors observed that for cola, milk, and water-based products, respectively, 68%, 67%, and 72% of participants prefer to share any of the shown advertisements on their social media as it appears humorous, absurd or non-sensical to them. People usually share those contents over social media that emotionally create positive attention to them (Steinert & Dennis, 2022). Therefore, we conclude that H<sub>2</sub> is supported because it enhances attention through emotions.

Among all the advertisements from the cola section, Curiosity cola and Kafola; in milk-based advertisements, gotmilk and Nourish milk; in water-based advertisements, Fiji water and Ice Mountain belong predominantly to traditional advertisements. H<sub>3</sub> is supported because participants remember brands with absurd, humorous, and non-sensical elements more.

#### 4. Conclusion

This research aimed to explore the impact of humour, absurdity, and nonsensicality in beverage advertisements through GSR, EEG, ET, and FEA, and a quantitative online survey. The analysis revealed a more positive buying mentality when exposed to advertisements with absurd and humorous features. The results largely supported the hypotheses, indicating that humorous, absurd, or nonsensical elements in beverage advertisements have the potential to increase memorability, create positive emotional associations, and be more effective than traditional advertising strategies.

Though the study provides important and valuable insights, it also has some limitations. The sample size for qualitative data to determine the effectivity of the stimuli was very small, and due to a



shortage of the necessary equipment, it took a lot of work to run the experiment for a longer period. The broader sample size for quantitative data consisted predominantly of students, therefore not representing all segments of a population. Additionally, the short duration of the experiment could have fully captured long-term effects and consumer behaviour changes. Future research could include a more diverse participant and shorten or extend the observation period for a broader understanding.

Future research could explore humorous and absurd advertisements' long-term and short-term effects on consumer purchasing behaviour. This could involve tracking online and offline purchasing decisions and brand loyalty over long periods. Moreover, investigating cultural influences on the effectiveness of humorous, absurd and nonsensical advertisements could provide deeper insights into global marketing strategies. Furthermore, experimenting with different media, such as video and audio advertisements or interactive campaigns, could offer a better understanding of consumer expectations and responses.

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# **PHYSICAL AND PSYCHOLOGICAL SURVIVAL AS MOTIVES: EXPLAINING ALL ATTENTION AND MEMORY**

**Rebecca C. Curtis**

*PhD, WA White Institute, NY, & Emerita, Adelphi University, Garden City, NY (USA)*

## **Abstract**

“The last peculiarity of consciousness to which attention is to be drawn. . . is that. . . it is always interested more in one part of its object (thought) than in another, and welcomes and rejects, or chooses, all the while” (James, 1890). Gladwell (2005) has documented many effects of unconscious processing in his best-seller *Blink*. But he does not address what happens to threatening experiences. Although researchers have investigated threats related to survival, only recently have they begun to investigate threats to individuals’ identity and their major belief systems. We cannot give everything in our environment conscious attention. The amount of information we can keep in mind at any one time is limited. Like a flashlight on a dark night, the beam of attention is narrow and must also scan the environment (Wachtel, 1967). Sensory processes are selective. Visually, most salient to our attention are stimuli that are novel, unexpected, aversive, and pleasurable. We are particularly attracted to people, places, bodies, and body parts (Kanwisher). Neural pathways are selected in according to the value system. There is consensus that the major value is usually survival. The motivations of physical and psychological survival are often more important than feeling good.

*Keywords: Attention, memory, survival, selection.*

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## **1. Introduction**

### **1.1. All attention and memory are not conscious**

Consciousness is useful with problems of a non-routine kind (Popper & Eccles, 1977). Edelman (1989) argued that the brain operates according to the same principles that Darwin proposed for species evolution--variation and selection. Overall, research has indicated that people pay more attention to negative and threatening information. Fear-relevant pictures such as snakes have been found to capture more attention than fear-irrelevant pictures, such as flowers. Heightened attention is given to both erotic scenes and scenes of mutilation--suggesting both defensive and appetitive motivations.

Attention appears to "blink" under certain circumstances (Chun & Potter, 1995). People are less likely to perceive other images after threatening and erotic pictures. If the second item is arousing, the "blink" effect is diminished (Anderson & Phelps, 2001). How are we to understand avoidance of threatening experiences? The answer lies in a pre-attentive evaluation system. Research on perceptual defense referred to as the "New Look" and "New Look 2" suggested a pre-attentive evaluative system that led people to take longer to perceive threatening information. Now experimental psychologists have again endorsed the notion of "pre-attentive" processes (Ohman, 1992; Bargh, 2006). with entry into consciousness affected by the relevance of the activated meanings to the goals of a person. Selection affects all attention and memory.

In model proposed integrating contemporary relational psychoanalysis and scientific psychology, we have self-preservation and preservation of meaning as primary human motivations in place of ego instincts and id instincts of sex and aggression. In place of structures of ego, superego, and id we have the experiencing self, representations of actual and ideal self-states, and unconscious aspects of self. More precisely, we have many neural networks that can be activated by external situations or inner urges--conscious control/monitoring functions and mental representations, including those of various selves, some frequently activated, some usually unconscious.

### **1.2. Pre-attentive evaluations for threats – anxiety leads to either over-attention to details or under-attention to details; evaluations select for values and goals**

In place of three different "it's" (id), we have pre-attentive evaluations of relevancy to goals and consistency with already existing representations, responding automatically or with selection for conscious

processing. Because people are motivated not only to sustain life, but also to preserve its meaning, mental organizing processes are motivated by their very nature, with people integrating, ignoring, or inhibiting new experiences both consciously and unconsciously.

Human beings would not have survived in early environments if they let their attention wander from circumstances fraught with a high possibility of immediate danger—death. Still, the quick, evolutionarily “primitive” emotional responses that are not routed through the cortex often prevail when survival is at stake, especially when the risk is very high. Selective processes operate at early, intermediate, and late stages of attention, including those that operate prior to identification (Luck and Hillyard, 2000).

Motives bias interpersonal perception (Maner et al., 2005). When people are made anxious experimentally, they are more likely to see others in stereotyped ways (Stephan & Stephan, 1985). Motives influence perceptions of ambiguous stimuli. If the subject is deprived of food, they (sic) will say ‘I see pieces of meat’ (Pally & Olds 1998, p. 983). It seems reasonable to think that psychological values, such as a favorable self-view, might operate in a similar fashion. Motives and emotions often remain or become activated out of awareness.

That motivation affects memory is demonstrated by research on instructions to remember or forget. The research on directed forgetting and memory has shown that people will forget more of what they are instructed to forget than of what they are instructed to remember (Bjork, 1989; Davidson & Bowers, 1991; MacLeod, 1975; Paller, 1990; Wetzel, 1975). Repressors are also especially good at forgetting if instructed to do so (Myers et al., 1998).

A body of research showing poorer recall for words following threatening words (Kulas, Conger, & Smolin, 2003; MacKay et al., 2004; Raymond, Fenske, & Tavisoli, 2003), suggests that emotional stimuli may receive more elaborate assessment. People are also less likely to perceive other images after threatening and erotic pictures. After seeing a bare breast or a severed limb, however, they had a greater chance of missing the perpendicular image (Chun & Marois, 2002). Blinks in Attention. Attention appears to “blink” under certain circumstances (Chun & Potter, 1995; Raymond, Shapiro, & Arnell, 1992). If two items in a list of fifteen. The experiments regarding selective attention have been used to document the fact that information not attended to is perceived unconsciously. This body of research assumes that attention is selective but that information of “high relevance” will be perceived when it is not specifically attended to (Johnston & Dark, 1986). This work on selective attention has led to a revival of interest in “perception without awareness” (Bornstein & Pittman, 1992; Wegner & Bargh, 1998).

“From the functional, evolutionary perspective, it follows that the burden for the discovery of threat should be placed on early, rapid, and parallel pre-attentive processing mechanisms, which define threat on the basis of relatively simple stimulus attributes” states Ohman (1997, p. 169). Ohman cites LeDoux’s (1994) differentiation of the “quick and dirty” emotional route that bypasses the longer thalamic-cortical emotional route to the amygdala. This processing does not require a full meaning analysis and does not require much contact with memory.

Figure 1. Routes After Pre-Attentive System Evaluates Experiences as Important.

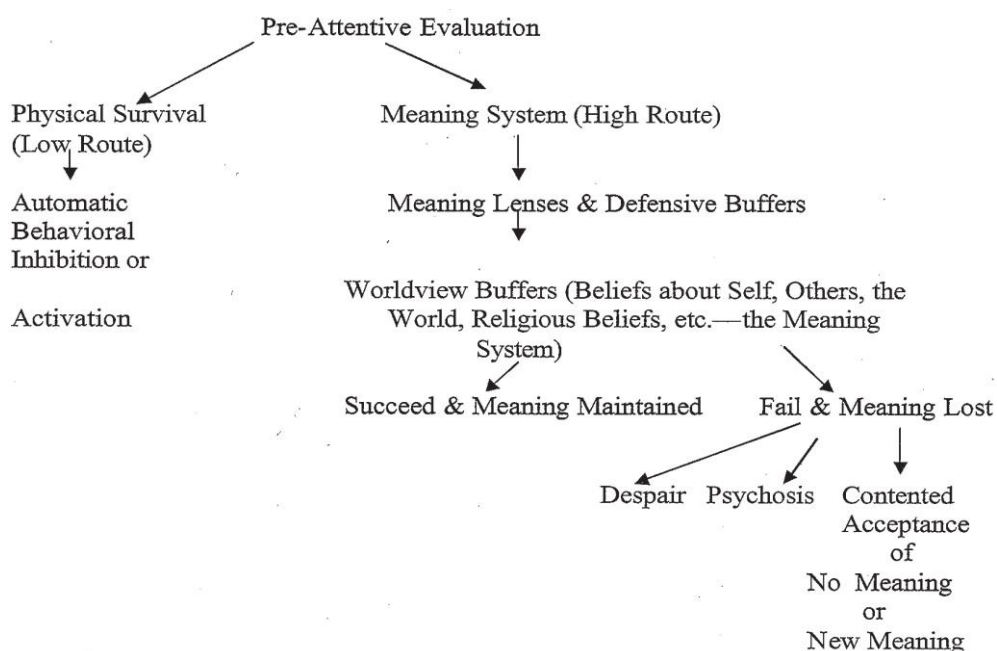
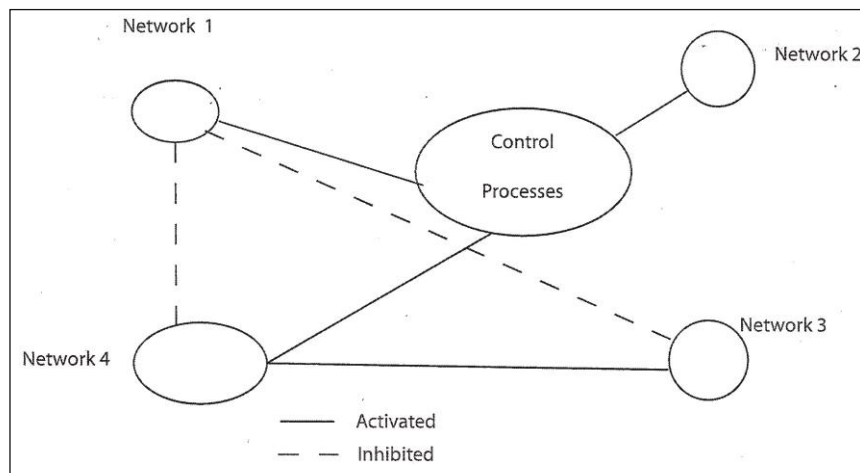


Figure 2. New Model. Associated and Dissociated (Not “Repressed”) Neural Networks including Conscious Control Networks.



Network 3 contains material that is traditionally thought of as repressed—that is, it is incompatible with a dominant (or frequently activated) self-state and actively disconnected from conscious control. Networks 1 and 2 can be activated simultaneously, but networks 1 and 3 cannot be activated simultaneously. Network 4 can be activated by Network 3, but not simultaneously with Network 1. Network 4 is connected directly to conscious awareness and can be activated simultaneously with Network 2. States 1 and 4 are traditionally thought of as dissociated from one another. They each can be activated, but not simultaneously.

## 2. Discussion (conclusions)

Experiences are selected just as surely as are genetic variations. Darwin (1859) stated: “I have called this principle by which each slight variation, if useful, is preserved, by the term Natural Selection.”. Each slight variation of neural connections, if useful, is also preserved (more likely to be activated again) by a similar process of natural selection. A more complete version of this argument can be found in the whole book by Curtis (2009).

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# IMPROVING MACHINE LEARNING PREDICTION OF CONSTRUCTS: MENTAL FATIGUE

Vojtěch Formánek, & Vojtěch Juřík

<sup>1</sup>*Department of Psychology, Faculty of Arts, Masaryk University (Czech Republic)*

## Abstract

Mental fatigue is a psychophysiological state that plays an important role in various domains of human machine interaction where it may increase risk of injury or accidents. To prevent threats to life and property, novel techniques combining psychological and computational approaches are needed and thus explored. Previous research has focused on training machine learning (ML) models on different types of fatigue input data and experiment settings, and recently on the generalizability of the models. However, current ML development struggles with various issues such as unclear analysis of what the model is actually learning. When trained on data that are only partially correctly labeled, it can learn artifacts of the dataset construction instead of the construct state. Psychometric measures that are used to label data have usually imperfect/questionable reliability, thus even if administered correctly may label some data incorrectly. The most widely used method for labeling mental fatigue states are subjective scales, which also possess limitations on construct validity. In this contribution, an iterative procedure to improve both reliability and validity of the labeling based on generalizability theory is proposed. This labeling procedure is constructed from components already present in the dataset and relevant to the construct being predicted. In the case of mental fatigue, a subjective scale, performance decrease and environmental reference extracted in 7 datasets collected on different sites is used, with several methods used to induce fatigue, all with heart rate variability as input data. The quality of combinations and levels of the label is assessed by analyzing unwanted variances and by using an equivalent of reliability from generalizability theory. Applying this procedure, components can be added to a label and created labels can be directly compared. Considering the iterative nature of this process, labels can be dynamically adjusted based on added new data. The whole procedure adds flexibility to dataset design, allowing for easier integration of datasets, even those that were not originally intended for ML. As a result, we enhance increasing variability and amount of data that is available for researchers, promoting its use beyond the ML-based mental fatigue prediction.

**Keywords:** *Machine learning, fatigue, generalizability, reliability.*

## 1. Introduction

Machine learning (ML) offers great opportunities for various applied domains, including psychology. Specifically, mental fatigue, a psychophysiological state playing a crucial role, e.g., in efforts to prevent human and property threats, represents a promising area of ML research. When training a model to classify construct states, we want it to learn a structure from the input data related to the construct state. A label gives the model information about the input data's state. For example, suppose we want it to identify a given participant's fatigue from his physiological data. To train correctly, it needs information about the state in which it should classify the data. Thus, when predicting construct states, integration of psychometrics and ML is necessary because the measures typically used to assess these constructs were not intended for ML. Therefore, they should be examined directly before training the model for better transparency and control of what the ML model is learning. Various methods are used to measure constructs, typically through a test and environmental manipulation, the changes in the construct states are hypothesized and observed through the changes in the test scores. In essence, the score is used to estimate the construct state, and the quality of this estimation is described by two concepts known to psychology - reliability and validity. Both can be used more generally to assess the quality of any measure.

Generally, fatigue as a construct suffers from two significant issues in terms of validity. There is a long-standing lack of consensus on the preferable measurement methods of fatigue and, more importantly, on the definition of fatigue *per se* (Bartley et al., 1947; Phillips, 2015). Therefore, it gets mistaken for related constructs, such as sleepiness (Shen et al., 2006) or tiredness and exertion (Phillips, 2015).

Regardless, there are several options available for its measurement. According to Martins (2021), considering ML modeling, the most prominent reference measures are the Karolinska Sleepiness Scale (KSS; Åkerstedt & Gillberg, 1990) and Borg's Rating of Perceived Exertion (RPE; Borg, 1998), both one-dimensional subjective scales. Alongside the abovementioned issues, fatigue is usually identified as a post-experiment state (Matuz, 2022), essentially using current exertion to label the data.

In Classical Test Theory (CTT), reliability is defined as a correlation between the latent, noiseless test score and the measured test score (Revelle et al., 2019). This means that the noise of the label is equal to the shared variances of the latent and measured score, which is a square of the correlation. Even for tests with high reliability while at the same time assuming perfect administration conditions, the amount of noise introduced by the label can be devastating to the ML model's performance, including also those typically considered robust against label noise, such as Random Forests (Reis, Baron, & Shahaf, 2018). For a reliability of 0.9, which is usually considered high, the number of wrongly classified labels is 19 % ( $1-0.9^2$ ). This number increases exponentially as reliability decreases. For example, for a reliability of 0.8, which is still considered relatively high, the amount goes to 36 %. Typically, techniques in ML require larger datasets than those currently publicly available for mental fatigue prediction since the largest available dataset includes data from 85 participants (Matuz, 2022). Other techniques require a subset of correct labels (Northcutt., Jiang & Chuang, 2021) or other methods of assessing the probability of using an incorrect label (Reis et al., 2018).

Fatigue is an inseparable part of mental fatigue. Phillips (2015) defines it as "a suboptimal psychophysiological condition caused by exertion." According to him, the degree and dimension depend on the dynamics and context of exertion, described by the value and meaning of performance to the individual and environmental conditions. Fatigue changes strategies or resource use such that original mental processing or physical activity levels are maintained or reduced (Phillips, 2015). Further, mental from physical fatigue can be differentiated as a decrease in mental processing as opposed to physical activity. Exertion in all the below-mentioned datasets is induced by cognitive tasks that require sustained attention.

Hood (2009) integrates two existing definitions of validity; broadly, it refers to the adequacy of inferences made based on the measure (from Messick, 1989), and a measure is valid if the attribute exists and variation in it causes variation in the measure (from Borsboom et al., 2004). The question of whether subjective experience, which is what is primarily measured by subjective scales, fully saturates the mental fatigue construct has been raised (Phillips, 2015) and then partially answered by adding other dimensions to the definition of fatigue. The proposed approach adds the measures for these dimensions and evaluates this composite measure. The former is done to increase validity, estimate reliability, better describe the data for the model, and help us understand what it is learning. Here, generalizability theory (GT; Brennan, 2001) can be used to resolve these constraints since GT, compared to CTT, focuses on analyzing various sources of unwanted error variance in the data.

## 2. Methods

Regarding the abovementioned, to follow the goal of effective ML training of fatigue construct, we found it advantageous to include multiple reference variables, i.e., multiple dimensions of fatigue in the context of generalizability theory. To demonstrate this, in the framework of this study, the existing datasets (4 in total; see below for more detail) containing fatigue scores collected from various psychological experiments were analyzed. Based on this, we included four dimensions of target measures: absolute performance score, absolute subjective feeling, and relative changes of these two variables from the previous measurement. These are reconstructed from already collected data; we're creating a four-dimensional measure.

### 2.1. Datasets

Due to technical problems, we eventually used only 4 out of the 7 datasets we had available, one unpublished (Pešán et al.; 2023) and three published by Matuz (2024). The former was designed for stress prediction; however, it does use custom cognitive tasks to exert participants and subjective load to assess the participants' state (Pešán et al., 2024). Matuz uses a Visual Analog Scale (VAS), and the difference between the three datasets they composed is in the tasks used: task-switching, 2-back, and the Stroop experiment. All of them are attention-based and exert cognitive capacity, and this way induces mental fatigue. Matuz does not include the results of these tasks in the available dataset; thus, we reconstruct them using K-Nearest Neighbors (KNN). For further analysis, we assume that the scores for the two categories are drawn from identical distributions.

Given that the latter three datasets provide only two subjective measures sampled at different times, we shall consider only two measurement phases, pre- and post-experiment-induced exertion.

Absolute performance is taken as a numerical score extracted from the above tasks, normalized from 0 to 1, and then combined with the other datasets. Subjective experience is, in this case, only normalized. The relative changes of the phases are taken as the difference of the scores; we invert performance change since it correlates negatively with increased scores of subjective experience, so that a low value is related to no/low mental fatigue, and the higher the value is, the more exhausted a person is. Three bins with different thresholds for each variable are used to simplify label creation.

## 2.2. Reliability estimation based on generalizability theory

Evaluating the reliability of this composite measure using the traditional approaches is almost impossible since the data have already been collected without this type of analysis in mind. An alternative is to use GT, which, regarding the ML domain, overcomes CTT in its feature of analyzing various sources of unwanted error variance in the data (Brennan, 2001), as discussed above. We follow the general outline of Briesch et al. (2014). Firstly, the universe of admissible observations includes all possible reference variables, datasets, phases, and persons. The last is also the object of measurement. Facets represent the error sources in the design; these include all of the variables in the universe, excluding persons. The design is then (person: dataset)  $\times$  reference variable, using nested facets and random effects. GT then estimates the variances of these facets using linear models with mixed effects and uses two coefficients, dependability ( $\Phi$ ) and generalizability ( $\rho^2$ ), these are defined as:

$$\Phi_p = \frac{\sigma_p^2}{\sigma_p^2 + \sigma_{abs}^2}, \quad \rho_p^2 = \frac{\sigma_p^2}{\sigma_p^2 + \sigma_{rel}^2}, \quad \sigma_{abs}^2 = \frac{\sigma_{gr}^2}{n_r} + \frac{\sigma_e^2}{n_r}$$

since  $\Phi$  is more conservative (Briesch, 2014), we use only it when analyzing to avoid confusion. A guide on GT in Briesch et al. (2014), in-depth description of alternative designs in Webb (1991), we analyzed the data in R (described in Huebner, 2019) and the variances using the gtheory package and formula:  $fatigue \sim (1/reference\_variable) + (1/dataset/person) + (1/reference\_variable: dataset)$ .

## 2.3. Mental fatigue prediction

Finally, the label is constructed by summing the values of the reference variables and distributing them into three bins: the first contains values indicating no/low mental fatigue [0-5], the second indicating medium mental fatigue [6-10] and the last indicating high mental fatigue [11-12]. All the datasets contain heart rate data from which we preprocessed and extracted indices. For Peřán et al.'s (2023a) dataset, we follow the process from Matuz (2022) to make the input data as similar as possible. Datasets were processed in Python; for data manipulation, we used Pandas (McKinney, 2010) and Numpy libraries (Harris, Millman, & van der Walt, 2020), after loading filtering and feature extractions were done using neurokit2 (Makowski et al., 2021).

However, we were not dealing with the distribution shift of the extracted indices, which roughly refers to systematic differences in collected data. This is likely because data was collected at different sites using different devices. Thus, to evaluate the label and train the models, we only use our dataset since it is the only one from which we extracted all the data and does not require dealing with the distribution shift. Three models were trained: Random Forests, Support Vector Machines (SVM) and K-Nearest Neighbors, and a baseline model that predicts the most frequent class. Models are implemented in scikit-learn (Pedregosa et al., 2011), which was also used to impute missing data. The models are evaluated using accuracy and 10-fold cross-validation with 20 repeats while keeping the original distribution of the classes.

## 3. Results

In terms of gender, the datasets are imbalanced, in Peřán et al.'s (2023) dataset, there were 18 women (11.5 % of the total) and 54 men (39.7 % of the total); in Matuz (2022), 33 women (20.9% of total) and 52 men (32.9 % of total). All variables are ordinal and found non-normal upon inspection using Q-Q plots. For this reason, we used the Mann-Whitney U test for independent samples to test the null hypothesis that VAS and subjective load come from the same distribution on the four datasets.

The difference between the subjective experience (SE) measures in all the datasets was not found to be significant (U=8712, p=0.32). Similarly, the difference in SE measures before exerting participants was also not significant (U=2568, p=0.32), but after exerting them, it was significant (U=1750, p<0.01), demonstrating a difference between the SE measures, either a difference in the exertion level, the measures or simply datasets. For performance, none of the test results are significant, without differentiating exertion (U=9759, p=0.54), on the pre-exertion measurement (U=2412, p=0.76) nor post (U=2724, p=0.09).



### 3.1. Reliability estimation and model evaluation

The dependability index for the composite measure pre-exertion is rather low ( $\Phi = 0.21$ ); no variance is caused by datasets or interaction with reference variables. Relatively slight variance caused by the object of measurement (6%,  $\sigma_p^2 = 0.01$ ); this is in part caused by how we dealt with relative changes since we always substituted a zero to imitate no change at the beginning; this is supported by the fact that 30.8% ( $\sigma_s^2 = 0.07$ ) of the total variance is caused by the reference variables. The residual variances cover the largest proportion (63.1%,  $\sigma_e^2 = 0.15$ ). In the broader context, we would expect the first measurement to be inconsistent because the participants come to the experiment from different environments and have various levels of mental fatigue.

The dependability post-exertion is much higher ( $\Phi = 0.68$ ), with negligible influence caused by the datasets (6.2%,  $\sigma_d^2 = 0.019$ ), reference variables (12.6%,  $\sigma_r^2 = 0.039$ ) and their interaction (2.2%,  $\sigma_{r:d}^2 = 0.007$ ). The object of measurement accounts for a larger share of the total variance (30.2%,  $\sigma_p^2 = 0.094$ ); the residuals still account for almost half of the variance (48.8%,  $\sigma_e^2 = 0.152$ ).

Only RF beat the baseline by about 0.05 with a resulting accuracy of 0.44, both above chance (0.33) and picking the most frequent class (0.39). This indicates that the model can learn this label, but not satisfactorily. However, note that the models were not fine-tuned; thus, the resulting score could be higher.

## 4. Discussion

In this contribution, we made the first step for a robust approach to combining 4 datasets from 2 different sites, continued in the research to increase the generalizability of machine learning models trained to predict mental fatigue, and outlined the approach so that it can be used outside both mental fatigue and ML. The results show that the reference variables after exerting participants are much more reliable, although their reliability is still low. The first phase also requires much more care and consideration in future research.

Though neither the reliability nor model performance overall are high at this stage, the strength of this approach lies in its flexibility and many possible points of improvement. First is in terms of validity of the reference variable - a multitude of other measures can be added, especially physiological measures that are not directly related to the input data, such as indices extracted from electroencephalography (EEG). Before estimating dependability, transformations can be applied to the measure's result to increase reliability and validity. However, it should always be considered a priority since a transformation that puts all reference measures to the same constant will result in high reliability. Also, for simplicity, we have assumed that along a given dimension, all the datasets use the same reference measure, for example, subjective experience. If this is not the case, the measures can be transformed before being combined.

Also, we used a simple way of transforming reference variables into a label. Generally, any transformation can be applied; a simple improvement is weighing the individual scales. Still, both should be based on previous research and considered in terms of their validity. Ideally, the transformations should label the data as best as possible so that the ML model can distinguish the individual examples more clearly.

The most challenging problem when combining datasets is the distribution shift. We found that this is the case by visually analyzing and comparing the distributions. Several possible causes are present from experiment conditions, devices that collected the ECG data, preprocessing, and feature-extracting strategies. Still, with care, these changes can be reflected in how the reference measures are constructed and combined. Most importantly, their reliability can be evaluated using GT.

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## MENTAL CULTURAL MODELS: HOW MODERN GEORGIANS PERCEIVE LOVE, SEXUALITY AND FAMILY

Lali Surmanidze<sup>1</sup>, & Tinatin Chkheidze<sup>2</sup>

<sup>1</sup>*Faculty of Psychology and Educational Sciences, Ivane Javakhishvili Tbilisi State University (Georgia)*

<sup>2</sup>*School of Social Sciences, Georgian Institute of Public Affairs (Georgia)*

### Abstract

Socio-cultural factors affect the formation of the models of cognitive processes, world perception, interpersonal interactions, social exchange and learning as well as the specificity of beliefs and values. Linguistic factors, including the cultural perceptions of words and concepts show differences not only in perception and judgment but also in attitudes to the events represented by concepts. Cognitivist direction of modern anthropology understands culture as shared cultural experience organized by schemas. Cultural schema or cultural model is thought to be a mental structure developed through cultural experience and used to form expectations and judgments. Our model is based on the conceptual framework of cultural models.

The purpose of the study is to examine the Georgian's mental cultural models using 145 selected concepts. 50 people of Georgian nationality (age range 18 - 25) participated in the study. The study used emic approach.

Methodology: The study used experimental psychosemantic method and interview with participants. Experimental psychosemantic method was employed to create a semantic space which was analyzed using respondents' ideas about the rational bases of the classification of concepts. Hierarchical clustering was used for experimental data and semiotic and discourse analysis for qualitative data. A synthetic approach was applied to data analysis. The study is interdisciplinary and the interpretation is based on linguistic, ethnographic and folkloric material. Out of the 17 cultural models identified in the basic study, we will focus on 3 thematically interrelated cultural models (love, family, sexuality) corresponding to mental representations obtained through sustainable analysis.

Conclusion: The cluster 'love' reflects universalist orientations of traditional cultures where 'love' is perceived in the context of social capital and reproduction. However, male and female do not belong to the given cluster. They belong to the 'family' cluster which means that research participants unconsciously separate romantic love from family. 'Love' is not part of the sexuality cluster, the structure of which is strongly influenced by the Orthodox perspective. Sexual attraction as a component of romantic love is presented in the context of 'sin'. 'Virginity' is represented as an opposition to the categories related to 'sin.' On the whole, the content of the three models represents the orientations of collectivist cultures. Despite a deep penetration of western and emancipatory tendencies into gender relations, understanding of romantic relationships is affected by tangible socio-cultural influences reflected in the perception of family and sexual relations.

**Keywords:** *Cognitive anthropology, cultural model, psychosemantics, semantic space, natural concepts.*

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### 1. Introduction

In the last decades cognitive science has been purposefully focusing on the issues which gradually distance this direction of science from the computer metaphor of mind. Human cognitive system is no longer considered an abstract "information processing system." It is considered a system of functions formed in the course of evolution specific of a human being whose body has certain physical characteristics, who interacts with the environment where she/she lives, who is a member of different social groups and belongs to a certain culture (Falikman, 2012; Chkhaidze & Surmanidze, 2019).

Culture operates at individual and collective levels through cognitive processes. Socio-cultural factors affect the formation of thinking models (Nisbett, 2004; Wang, Nisbett, & Peng, 2002), memory, problem solving skills, perception of world, information processing, social exchange and learning, the specificity of interpersonal relations, beliefs and values. At the collective level culture forms relationships

and social interactions, taboo topics, forms of emotional expressions, relationship style, etc. (Triandis, 1994, 1995; Matsumoto et al., 2008). It has been proved that the cultural practice of meditation improves attention and cognitive control (Brefczynski-Lewis, Lutz, Schaefer, Levinson, & Davidson, 2007). Cultural practice of narration is a powerful socialization mechanism, since it ensures the passing of knowledge and information to cultural groups through generations which increases the chances of survival.

Linguistic factors (everyday concepts, metaphors, idioms, etc.) is of paramount importance in the processes described above. Cultural perceptions of words and concepts are manifested in versatility of perceptions and judgments as well as in the attitudes towards the events denoted by concepts.

Given a vast variety of peoples and ethnic groups, a typical sample mainly composed of representatives of Western culture, used in the majority of cognitive studies, becomes questionable if we look at its psychological characteristics which point to its atypical character. This evokes a tendency to use more ethnically diverse samples (Falikman & Cole, 2014).

Cognitivist direction in modern psychological anthropology is based on the assumptions of both cognitive anthropology and cognitive psychology. It focuses on the relationship between culture and individuals' mental structures (Quinn, 1987; D'Andrade, 1992; D'Andrade, 1995; Shore, 1996; Strauss & Quinn, 1997). Culture is defined as shared cultural experience organized by schemas, whereas cultural schema or cultural model is understood as a mental structure formed through cultural experience. Cultural schemas and their mental representations are studied by school of cultural models (Quinn, 2011; Bennardo & de Munck, 2014; Dressler, 2018). The studies use different methods. Explanation/specification of activities provided by research participants is considered especially important (White, 1987; Quinn, 2005). Cultural models characteristic of both Western and non-Western cultures have been identified (Shore, 1996; Gatewood, 2012; Bennardo & de Munck, 2014; Quinn, 2018). Cultural models of personality traits, adaptive behavior and fatalism have been studied in the context of Georgian culture (Surmanidze, 2023; Chkhaidze, 2021; Chubinidze, 2018). There is a clear tendency to use different methods in a balanced and synthetic way (Surmanidze, 2021). The conceptual framework of our study is represented by this particular school of cultural models. The content of present article is based on secondary (sustainable) interpretation of the studies conducted in 2007-2008 (partially represented in Surmanidze & Tsuladze, 2008; 2010).

### 1.1. Objective

Examination of the Georgians' mental cultural models using 145 concepts selected according to certain criteria.

## 2. Method

### 2.1. Participants

50 people of both genders (28 females, 22 males) aged 18-25, for whom Georgian was native language.

### 2.2. Strategy

The study used emic approach which centers on the participant's (insider's) point of view. This approach is based on the following principle: "Let's look at the culture through the locals' eyes" (David Ho). Therefore, interpretation is based on the cultural meanings of the concepts and the characteristics of the cultural context.

### 2.3. Methodology

The study used two types of methods: **experimental** (namely, psychosemantic experiment) (Petrenko, 1988; 1997; Petrenko & Mitina, 2010) and the so-called **soft interview**. **Psychosemantic experiment - construction of semantic space:** We used Miller's classification method as a primary method to reconstruct the categorical structures of consciousness and build the corresponding semantic space. Research participants individually grouped 145 concepts according to similarities in meaning (duration 40-45 minutes). **Interview:** The experimenter collected from each participant information on the rational basis of classification (duration 25-30 minutes).

Hierarchical cluster analysis was performed to process **experimental data** (data analysis tool - SPSS 23) and the dendrogram reflecting semantic space was constructed. NVivo 10 was used for thematic classification and content analysis of data obtained through **interviewing**. Therefore, the present study represents a synthesis of positivist and hermeneutic approaches. It is an interdisciplinary study and interpretation is performed using linguistic, ethnographic and folkloric material.

17 more or less independent clusters were identified on the basis of 145 concepts (See Surmanidze L., Tsuladze L 2008; 2010 for the primary interpretation of a part of the study). Due to a size limitation, out of the 17 cultural models identified in the above study, the present article concerns only the results of secondary (sustainable) analysis of the interrelated cultural models as represented in the psyche of modern Georgians. Specifically, the article focuses on the cultural models of *'family'*, *'sexuality'* and *'love'*.

### 3. Discussion

#### 3.1. 'Family'

It is the most numerous cluster in terms of its content. The semantic basis of family becomes explicit in the perceptions and definitions provided by research participants. The classified categories reflect different aspects of family: kinship (sibling, child, family, parent, offspring, descendant), gender component (femininity, woman, man). The concept 'warmth' is related to an ancient Georgian ritual symbolizing creation of family, in particular, walking a newly married young married couple around the fire in the middle of dwelling. In the context of given cluster, the concept 'obedience' is understood as a precondition for keeping harmony. When explaining the rationale of used classification research participants emphasize attachment: belonging to family, empathy, emotional affinity, friendship and the importance of interactive and functional relationships, as well relationships determined by role and normative responsibilities. It should be noted that for research participants having a family is an unquestionable necessity ("It is necessary for a person to have a family. She or he can't be a full-fledged person without a family." - male, 19). The value of family was established throughout the centuries of self-defense and permanent struggle for survival. In the conditions like these, unity and cohesion of family has actually become a micro-model for state. Another element of the same cluster - 'femininity', reflects the same reality: while men were often away during defensive wars the woman managed the family and created its image. It is interesting to note that for our research participants the opposition masculinity/femininity represents a functional division: masculinity represents the cultural model of so-called state (Surmanidze & Tsuladze, 2008), whereas femininity is a component of the cultural model of family. Therefore, Georgians perceive family as 'feminine' and the state as 'masculine'. This could lead to the conclusion that according to its meaning the cultural model of family as a representation of social capital plays a classificatory function for Georgians.

#### 3.2. 'Sexuality'

The components of the cultural model in this cluster are represented by 7 concepts distributed among 12 sub-clusters.

The cluster consists of groups with opposite connotations. Negative: homosexual, prostitute, passion; those attributes that reflect 'power' in the social environment and, at the same time, are linked to the attributes of the sphere of sex: power, sexual freedom, sex, sexual attraction, sex organs, strength, power; opposing concepts – hesitation and control; concepts reflecting culturally unacceptable circumstances: loneliness, disconnection and inertness; Positive: overcoming obstacles, persistence; experience, motion; virginity, following the rules, conscience, responsibility; faith, god, religion; individuality and youth.

Thus, the given cultural model reflects sexuality as one of the most tabooed spheres for Georgians. The model shows a strong influence of Christian ideology (viewing sexual life from the religious-ethical perspective, normative regulation of eroticism and sexuality). Differently from the reproductive aspect eroticism is related to sin (which is reflected in certain words of the Georgian language). Ideological background is represented by negative components of this cultural model. It is interesting to note that the neutral concept 'passion' reflecting an attribute of instigating power is an element of negative context. The positive dimension reflects the emancipation tendency linked with individuality and youth (overcoming obstacles, persistence, motion, etc.) However, the ideological influence of religion is observed in the perception of virginity which belongs to the positive dimension and as a symbol of woman's purity and dignity is still considered to be a norm by a large part of young people (Kristesashvili., Surmanidze, Tsuladze, Shengelia, & Zardiashvili, 2009). Discourse analysis shows that in the definitions provided by research participants in relation to sexuality the main argument emphasizes a strong influence of referent groups on both mental and behavioral dimensions and the cultural practice of the participation of 'important others' in people's lifestyle in general. The concept of responsibility in the given cluster assumes that the perception of sexual relations largely implies family as one of the most important cultural institutions which actively participates in organizing career, marriage and personality identifications.

The sphere of sexual life is quite controversial and ambivalent for Georgians. The mental categorical structures of young people participating in the study can be traced back to traditional ideologies which served as a basis of normative sexual morality throughout the centuries. The results of the given

study have been supported by other studies conducted in the recent period with the use of different methods (Gamsakhurdia, 2019).

### 3.3. 'Love'

The given cluster unites the following concepts: love, loyalty, wealth, vanity and fertility. Its content does not reflect the characteristics of romantic love like intimacy, sexual passion, pleasure (eroticism), spiritual affinity or physical connectedness (Karandashev, 2021). This cluster with quite a poor content reveals a general orientation specific of traditional cultures which implies that gender relations, especially sexual contacts are justified by reproductive purposes, mainly in the context of family. This can be demonstrated by the presence of the concept of 'fertility' in the given sub-cluster. The concepts 'wealth' and 'vanity' point to the fact that research participants link romantic love with social capital. The value of romantic love is certainly recognized in real life where it takes form of the relationship with its specific attributes, but as shown by our study, the cultural model of this phenomenon ingrained in deep mental layers still preserves the meaning characteristic of traditional societies at the normative level.

## 4. Conclusion

The cultural model of **family** is represented with the attributes characteristic of collectivist cultures. Its components are kinship, children, parents, gender, warmth, emotional affinity, attachment, belonging to family and obedience. Family is 'feminine' for Georgians.

Cultural model of **sexuality** is complex and ambivalent. It is strongly influenced by Christian ideology and is represented dichotomically by negative/positive dimensions. Negative components are represented by the phenomena perceived in the context of religious sin (homosexual, prostitute) and the attributes that reflect 'power' in the social environment (power, strength, money) and, at the same time, are linked to the attributes of the sphere of sex: sexual freedom, sex, sexual passion, sex organs. One of the groups of concepts on the positive dimension is represented by emancipation tendency linked with the concepts of individuality and youth (overcoming obstacles, persistence, motion, etc.) whereas the other group of concepts is represented by phenomena (virginity, following the rules, responsibility, conscience, religion) perceived in the normative regulatory context of eroticism and sexuality.

The cultural model of **love** exhibits a general orientation of traditional Christian cultures according to which inter-sex relationship, specifically sexual contact, is approved if it serves reproduction mainly in the context of family. The components of the model (love, loyalty, wealth, vanity and fertility) emphasize, at the normative level, a primary importance of social capital in the perception of love, which is typical of traditional cultures.

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## DOES A SMILE SIGNAL HAPPINESS? BELIEFS AMONG LAYPERSONS ABOUT EMOTIONAL FACIAL EXPRESSIONS

**Derek J. Gaudet<sup>1</sup>, & Lisa A. Best<sup>2</sup>**

*Department of Psychology, University of New Brunswick Saint John (Canada)*

<sup>1</sup>M.A.; <sup>2</sup>Ph.D.

### Abstract

Although the majority of experts agree that emotions and their corresponding facial expressions are universal, beliefs of laypersons about this matter are not well understood. The purpose of the current study was to better understand whether or not belief in universality is the “commonsense” view and determine how belief in universal emotional facial expressions might be related to performance on an emotion recognition task. In total, 236 participants responded to an online study designed to examine beliefs about emotional facial expressions. Participants first provided demographic information, indicated that emotions and emotional facial expressions are universal, and then responded to more specific questions examining their beliefs about these constructs. Participants then completed a modified emotion recognition task, in which they viewed 14 faces (50% female) depicting each of the six basic emotions (and a neutral face). During this task participants responded to questions about the facial expressions that they saw. Although the majority of participants endorsed the idea that emotions were universal, only 34% believed that emotional facial expressions were universal. Those who endorsed the universality view of emotional facial expressions were more likely to believe that facial expressions were also universal. Facial expressions were most commonly identified by participants as the clearest and best signal for identifying emotions in others. Participants who believed emotional facial expressions were universal, those who did not believe that they were universal, and those who were unsure did not differ in accuracy on the emotion recognition task. All three groups were also highly confident in their emotion recognition abilities. During the emotion recognition task, participants indicated a belief that emotional facial expressions occur with underlying emotions more than 70% of the time. The results here suggest that while most laypersons believe emotions are universal, this belief does not translate into a belief in universal emotional facial expressions. Whether or not laypersons endorse a view of universal emotional facial expressions, they still consider emotional facial expressions to be an important signal for understanding and recognizing the underlying emotional states of others.

**Keywords:** *Facial expression, emotion, universality, basic emotions, emotion recognition.*

### 1. Introduction

Ekman’s (1972) neuro-cultural theory of emotion proposed that there are at least six universal facial expressions that serve as reliable signals for six basic emotions: happiness, sadness, fear, anger, disgust, and surprise. Ekman (1992) argued that the production of emotional facial expressions (EFE), and the ability to recognize emotions in the facial expressions of others, is an evolutionary adaptation that facilitated appropriate responses from our ancestors. This adaptation was crucial in situations that posed significant threats to survival or provided opportunities for reproductive success. For example, recognizing disgust on another person’s face could serve as a cue to avoid a situation, such as spoiled food, that could lead to illness. Ekman (2007) argued that prior to his research establishing some degree of universality in emotions and EFEs, there was a clear division in the acceptance of any degree of universality. On one side, there were those who believed that emotions, and their expressions, were socially constructed and learned, varying by culture. Conversely, the work of others, such as Darwin, suggested that emotional signals in the body, voice, and face were products of evolution, and therefore believed to be universal. Ekman and colleague’s (1969) work on emotions and facial expressions, with an isolated culture, the Fore of Papua, New Guinea, provided the first strong evidence that facial expressions were universally expressed and recognized. The Fore people appeared to produce and recognize the same



EFEs as westerners. Thus, Ekman's work appeared to settle the long-standing debate between the two schools of thought; however, a strong critic of Ekman's work, James Russell, suggested that Ekman's (2003) description of that clear division in attitudes about emotions and facial expressions was not quite accurate. Russell (1994) suggested that many people appear to believe that some aspects of emotion are innate and universal, and others are cultural and socially learned. Russell further suggested that the "commonsense" view throughout history, held by people who understand little about the nature of emotion and facial expression, is that emotions and their facial expressions are assumed to be universal:

*"In short, the universality thesis predates Darwin by several thousand years. That facial expressions might not be universal appears not to have occurred to most people. Both evolutionists and creationists believed in universality. Universality is a background assumption, a part of common sense, at least in Western cultures" (Russell, 1994, p.104).*

To better understand current opinions regarding the proposed universality of emotions and facial expressions, Ekman (2016) surveyed a large sample of emotion researchers. He found that 88% believed that there was compelling evidence for universals in at least some aspects of emotions. Furthermore, 80% of the respondents believed that there was significant evidence supporting the existence of universal signals of emotions in the face or voice. Thus, the experts largely agree on the universality of emotions and the existence of corresponding universal emotional signals. Although Ekman's work captured the explicit beliefs of experts, little is known about the explicit beliefs of laypersons. For the purposes of this study, the term "laypersons" is used to describe anyone who is not an expert in the area of emotions and facial expression. To our knowledge, there is no research that has asked laypersons directly about their beliefs concerning emotions and facial expressions. Existing research using standard emotion recognition paradigms can only inform us on implicit, rather than explicit, beliefs.

We hypothesized that if Russell's (1994) assumption about the commonsense view of emotions and facial expressions is correct, most laypersons would report believing that emotions and their corresponding facial expressions are universal. Furthermore, we predicted that an acceptance of universal EFEs would lead to higher confidence in decisions made during an emotion recognition task, as well as in higher estimates of the number of universal EFEs that exist. Thus, the purpose of the present study was to address the gap in existing literature describing laypersons' beliefs about EFEs. In this online study, we asked participants about their beliefs concerning the nature of emotions and facial expressions. Additionally, participants completed an emotion recognition task, in which they were asked questions about the six EFEs that have the strongest support for universality: happiness, sadness, fear, anger, disgust, and surprise.

## 2. Method

### 2.1. Participants

Two-hundred and thirty-six undergraduate students at the University of New Brunswick took part in the present study. The average age of participants was 21.36 years ( $SD = 4.98$ ). Most participants (80.9%) identified as female; the remainder identified as male (17.4%), two spirited (.4%), non-binary (.4%), gender fluid (.4%), and one preferred not to disclose. The majority of the sample (88.6%) spoke English as their first language.

### 2.2. Measures

**Beliefs about universal emotions and facial expressions.** To determine if participants believed that facial expressions are an important source of information for identifying emotions, we asked "Which of the following provides the clearest and best information about the emotion that another person is feeling?" Possible responses were "body language", "tone of voice", "facial expression", "words being spoken", and "other (specify)". To determine if participants believed that emotions and facial expressions were universal, we asked two questions: 1) "Do you believe that there are universal emotions?" and 2) "Do you believe that emotional facial expressions are universal?". Participants responded by indicating "Yes", "No", or "Unsure" to both of these questions. We further investigated these beliefs by asking participants to provide the number of emotions, and facial expressions, that they thought were universal.

**Emotion recognition task.** Fourteen facial expression stimuli were taken from the Warsaw Set of Emotional Facial Expression Pictures (WSEFEP; Olszanowski et al., 2015). Two examples (one male and one female) of each of Ekman's proposed basic emotions, and two neutral faces, were used in this task. No two facial expression stimuli were of the same individual. After seeing each face, participants choose which emotion was displayed. The options were: Happiness, Sadness, Disgust, Fear, Surprise, Anger, Neutral, or Other (provide response). They also answered five questions about the specific facial expression that was depicted. Here, we present the findings of two of those items: 1) *How confident are*

you in your decision about which emotion is being displayed in this facial expression? and 2) When someone experiences this emotion, how often would you expect to see this expression on their face (from 0 – 100% of the time)? Overall accuracy on the task was calculated.

### 2.3. Procedure

The current study was conducted using the online survey software, Qualtrics. The study was advertised at the University of New Brunswick Saint John. Participants received a bonus credit towards their grade in an eligible undergraduate course. After providing informed consent, participants completed a demographics form, questions asking about specific beliefs in universality, number of emotions and facial expressions thought to be universal, and what they believed to be the best signal available for determining which emotions another person is feeling. After completing these questionnaires, participants moved onto the facial expression recognition task. During this task, participants were presented with 14 faces depicting EFEs, in a randomized order. In addition to making a choice about which emotion was being displayed, participants responded to the set of questions previously described. Participants were given as much time as necessary with each face. After completing the emotion recognition task, they were thanked for their time and contribution.

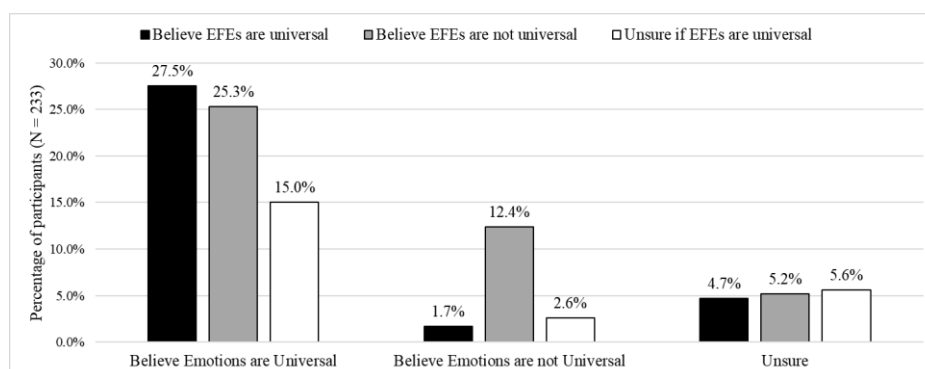
## 3. Results

### 3.1. Beliefs about emotions and facial expressions

*Clearest emotional signal.* When asked what provides the clearest and best information about the emotions that another person is experiencing, the most common response was *facial expression* (40.3%), followed by *tone of voice* (24.2%) and *body language* (23.3%), with the remainder choosing *words spoken* (10.6%) or *other* (1.7%). To determine whether or not these responses were independent of belief in universal facial expressions, a Chi squared analysis was conducted and indicated that the participants' responses were independent of their belief in universal facial expressions,  $X^2(8) = 4.97, p = .761$ .

*Universality.* When asked if they believed that there were universal emotions, 67.8% of the sample said “yes”. The remaining responses were split almost evenly between “no” (16.7%) and “unsure” (15.5%). When asked if they thought that EFEs were universal, only 33.9% of the sample said “yes”, with 42.9% reporting that they did not believe in universal EFEs. Approximately 23% of participants were unsure whether EFEs were universal. A Chi squared analysis was used to assess independence between belief in universal emotions and belief in universal EFEs. The results indicated that responses to each question were not independent of one another,  $X^2(4) = 22.31, p < .001, V = .217$ . Beliefs concerning universal EFEs were, therefore, associated with beliefs concerning universal emotions. A belief that EFEs are universal is most likely when the participant also believed emotions are universal. When participants did not believe in universal emotions, they almost always did not believe in universal EFEs. Those who were unsure about the universality of emotions were roughly evenly split between the three possible belief choices concerning the universality of EFEs (see Figure 1).

Figure 1. Proportion of participants believing facial expressions are universal, grouped by belief in universal emotions.



*Number of Universal Facial Expressions.* Participants reported an average of 3.45 ( $SD = 2.81$ ) universal EFEs. To determine whether the number of reported universal facial expressions varied by belief in universality of EFEs, a one-way ANOVA examining differences between those who accepted universality, those who did not, and those who were unsure was conducted. Results of the analysis showed that groups differed in the number of facial expressions that they thought were universal,  $F(2, 206) = 25.49, p < .001, \eta^2 = .198$ . Post hoc tests revealed that all group estimates differed from one

another ( $p < .05$ ). Those who believed EFEs are universal reported more universal EFEs than those who were unsure and those who did not believe EFEs were universal. Means for each group are presented in Table 1.

### 3.2. Emotion recognition task by belief in universality

*Accuracy.* Mean accuracy on the emotion recognition task was 88.93% ( $SD = 13.10$ ). Accuracy for each expression ranged from 73.40% (fear) to 96.61% (happiness). A one-way ANOVA revealed no differences between groups based on beliefs in universal expressions for emotion recognition accuracy. Means for each group are presented in Table 1.

*Confidence.* On average, participants were 84.09% ( $SD = 12.05$ ) confident in their choices during the emotion recognition task. A one-way ANOVA revealed a difference in confidence levels based on belief in universality of EFEs,  $F(2, 230) = 3.41, p = .035, \eta^2 = .029$ . Those who were unsure about the universality of EFEs were less confident than those who believed in the universality of EFEs ( $p = .04$ ). No other comparisons were statistically significant ( $p > .05$ ; see Table 1).

*Estimate of the co-occurrence rate of EFEs with emotions.* To determine how often people think EFEs occur with the experience of an emotion, we examined the average response to all facial expressions to the question: *When someone experiences this emotion, how often would you expect to see this expression on their face (from 0 – 100% of the time)?* Facial expressions were believed to accompany the experience of emotional states 72.03% of the time ( $SD = 15.45$ ). A one-way ANOVA revealed no statistically significant differences based on belief in universal emotional expressions (see Table 1).

Table 1. Means of estimated number of universal EFEs, accuracy in emotion recognition task, confidence in decisions, and estimated rates of co-occurrence of EFEs with emotion, by belief in universal EFEs.

| Belief                 | Estimated number of universal EFEs (SD) | Accuracy in EFE Recognition (SD) | Confidence in decision in EFE recognition (SD) | Estimated EFE co-occurrence with emotion (SD) |
|------------------------|---|----------------------------------|--|---|
| EFEs are universal     | <b>4.97 (2.41)</b>                      | 90.32% (11.38)                   | 86.71% (10.20)                                 | <b>74.19% (15.96)</b>                         |
| EFEs are not universal | <b>3.30 (2.80)</b>                      | 87.86% (15.04)                   | 83.34% (12.83)                                 | 71.22% (15.69)                                |
| Unsure                 | <b>2.15 (2.47)</b>                      | 88.80% (11.56)                   | 81.45% (12.70)                                 | <b>70.17% (14.33)</b>                         |

Note: bolded values differed from each other within the column.

## 4. Discussion

The current study revealed several findings regarding beliefs about emotions and EFEs in laypersons. First, universality appears to be the “commonsense” view for underlying emotions, but this does not appear to be the case for EFEs. Most participants (67.8%) endorsed the idea that emotions were universal, but substantially fewer participants (33.9%) believed that EFEs are universal. Therefore, the present findings only offer partial support for Russell’s (1994) assumption, that universality of emotions and EFEs is the “commonsense” view. Secondly, when a participant endorsed the view of universal emotions, roughly equal proportions of participants indicated that EFEs were (40.56%) or were not (37.32%) universal. For participants who believed that emotions were not universal, the vast majority (74.3%) took the position that EFEs were also not universal. For those who were uncertain about the universality of emotions, roughly equal proportions believed EFEs were universal, did not believe EFEs were universal, or were uncertain. This is likely because believing in universal emotions does not necessitate a belief in universal EFEs, but a belief in universal EFEs would appear to require a belief in universal emotions.

Regardless of our participants’ views on universality, responses to two items indicated that they believed in a strong connection between EFEs and underlying emotional states. When asked what provided the “clearest” and “best” information about the emotions experienced by people, the most common response was “facial expression”. Additionally, when participants were asked to estimate how often the EFE that they saw in the emotion recognition task accompanied the corresponding underlying emotional state, participants estimated an average co-occurrence rate of approximately 72% percent. Thus, laypersons believe that when people experience an emotion, there is a high probability that an EFE will also occur. This finding is in contrast with a recent meta-analysis by Durán and Fernandez (2021) which concluded that predicted EFEs do not reliably occur with the basic six emotions proposed by Ekman. This, combined with our results, suggests that people might place too much weight on the value of EFEs in terms of reliably identifying the occurrence of underlying emotions.

Finally, we expected that accuracy and/or confidence in the emotion recognition task might differ between participants who endorsed the universality of EFEs and those who do not. Our hypothesis was based on the logic that participants who did not endorse the view of universal EFEs might be more open to additional interpretations of EFEs than those who do endorse universality. Overall, however, this did not appear to be the case. In this study there were few statistically significant differences on the

emotion recognition test. There was an exception – participants who were unsure about the universality of EFEs were less confident in their decisions than those who believed EFEs were universal. It is important to note, however, that average confidence in all groups was greater than 80%, suggesting highly confident judgements occurred. In retrospect, the lack of differences in the performance of each group is not that surprising. Accuracy and confidence are likely to be independent of beliefs in universality in this particular task. The expressions represent the most studied expressions in the literature, and those who do not endorse universality of EFEs could have simply recognized the expressions as being common to their own culture. The sample consisted mostly of those raised in western, or westernized, cultures, where the basic six emotions were first identified. This does not necessarily mean that the findings in this laboratory-based task translate perfectly to real life judgements of emotions. It is entirely possible that beliefs in the universality of EFEs matter more when individuals are making judgements about emotions of people from different cultures in real world settings. It is also possible, however, that it does not. Further research in this area is needed.

To our knowledge, this was the first attempt to understand explicit beliefs of laypersons about emotions and EFEs. As with any study, there are limitations that need to be considered. First, the EFE stimuli were taken from an existing validated database of EFEs, the WSEFEP. This set, however, only contains Caucasian faces. Some research argues for a within-culture advantage in recognizing facial expressions (Elfenbein & Ambady, 2002). Future research should incorporate a more diverse stimuli set to account for this possibility. Secondly, the mere fact that some individuals denied a belief in universal EFEs and then proceeded to provide a number of EFEs that they thought were universal draws the estimate of that group into question. We would expect that those who say that they do not believe EFEs are universal should follow this response with an estimate of “0” universal EFEs, but this did not occur in the current study. It is possible that they misunderstood the way that the question was asked, but this is unlikely as the terms “universal EFEs” were clarified in parentheses as “*the same emotional facial expressions are shown by all people, in all cultures*”. It is possible that this question needs to be examined in another way. We intend to address these limitations in future research.

In conclusion, Russell’s (1994) assumption, that the universality of emotions and EFEs is the “commonsense” view, is only partly supported here. While many people agreed that underlying emotions are universal, there was indeed some type of division in how people think about EFEs. Understanding the beliefs of laypersons about emotions and EFEs is important, as people often make automatic and rapid judgements of the emotional states of others. To further highlight the importance of understanding explicit beliefs, we also asked our participants the extent to which they agreed with the statement “being able to recognize another person’s emotions is very important to me” on a 1 (disagree completely) to 7 (agree completely) point scale. Participants expressed high agreement with this item ( $M = 5.68$ ,  $SD = 1.30$ ), with no differences between groups based on beliefs in universality ( $p > .05$ ). So, regardless of beliefs in universality, people place high importance on the ability to recognize emotions in others. What people believe about how we make judgements about the emotional states of others is important in understanding how accurate people are likely to be everyday social settings, as well as when that inaccurate judgments of emotions have more serious consequences, such as in legal or clinical settings.

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## PERCEPTION AS AN INTELLIGENT ACT

**Martinho Moura, & Bruno Nobre**

*Universidade Católica Portuguesa, Centro de Estudos Filosóficos e Humanísticos,  
Faculdade de Filosofia de Braga (Portugal)<sup>1</sup>*

### Abstract

We intend to demonstrate that human perception is better understood when thought from the perspective of Aristotelian-Thomistic Philosophy. After concluding for its existence, Descartes, in the 17th century, concludes that there are ideas that we all possess, such as the idea of “perfection”. This idea cannot result from experience, and it’s God the source of the idea of perfection in us, and the one who guarantees the existence not only of external reality but also of our own correct reasoning. Very far from the God of Thomas Aquinas who is *Alpha* and *Omega*, Descartes' god is a god situated and secondary between the subject and reality which, in turn, is guaranteed by God, in a vicious circle between God and the subject. It’s a subjective or logical God, such as Kant's, but not a real God. Reality is, therefore, subjectively intelligible and truth objectively achieved, and the principle of causality is, in this way, subjectively valid. Reality is intelligible not because it’s provided by intelligible forms — by intelligible (and not only sensitive matter) that we, in fact, perceive — but because it is a reality presented by extension that is nothing more than a reflection of the logical-mathematical universe, thought by Modernity and which, with this thinker, is innate to the subject. This is a pure and finished reason. The extensive reality is purged of subjective elements; it is logical-mathematical (therefore, it is thought). It’s a kind of idealism and not realism and which results in a physicalist and materialist view of reality. Materialism, called physicalism in mainstream culture, consists of the idea that there is a world out there that is not experiential. It is material, but the way the word is used here has a strict conceptual definition. Matter is something that can be specifically described by numbers. It’s a world without qualities. The world is purely quantitative and, because we are part of this world, we are also quantitative. The entire world of qualities that, deep down, constitutes our reality, is generated, according to materialism, in a not very well specified way and by a brain inside our head. The world outside has no flavors, colors, smells or sounds. We cannot see it because it has no qualities. The best we can do is imagine it as some kind of set of mathematical equations floating in the void.

**Keywords:** *Aristotle, Thomas Aquinas, substantial form, Descartes, perception.*

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### 1. Perception and ancient tradition: Aristotelian-Thomistic philosophy

In the ancient tradition, and when we talk about philosophy of knowledge, it was believed that human beings were able to take a look at external reality. Philosophers such as Aristotle and Thomas Aquinas concluded that, after abstracting the accidental aspects, human being reaches the essence of an object: its substantial form. As Pedro Teixeira Zanchin writes, substantial form is not limited to

mere arrangements or dispositions of matter, to the extent that these arrangements or dispositions coincide with the essences of sensitive beings (i.e. with what is expressed in their definitions) and with their final causes, understood as articulated sets of capacities and activities that determine your way of life. [...] “εἶδος” designates one of the principles of movement and rest of natural beings. The other principle is matter, [...] all the processes of change that a natural substance goes through must be explained using the notions of matter and form. At a more specific level of analysis, the notions of matter and form correspond, in living beings, to the notions of body and soul. The soul is the principle that satisfies the conditions posed by the idea that formal and final causes designate the same thing: it is the principle of life and activities that define a living being as a member of its species (Zanchin, 2022: 27).

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<sup>1</sup> Ref. UIDB/00683/2020 FCT.

In *Aquinas's Theory of Perception*, Anthony Lisska claims that

whatever Aquinas is a metaphysician, he is neither a Process philosopher nor a Platonist nor a philosopher rooted in the radical empiricism of Locke, Berkeley, Hume, and the early twentieth-century empiricists. Thomas's metaphilosophy works within the context of both an ontological realism and an epistemological realism, which assumes an ontology of individuals belonging to natural kinds (Lisska, 2016: 11).

The notion of substantial form is closely linked to *natural kinds*, and this one is linked to the purpose of a thing in a world of ends. Persons are substances with «dispositional properties — what Aquinas often refers to as ‘powers’— to have cognitions and undertake actions» (*Ibidem*: 11); to acquire or exemplify acts in a non-entitative or non-materialist manner. The “soul” of St. Thomas, as the physicist-philosopher Heisenberg writes in *Phisics and Philosophy*, is «more natural and less forced than the Cartesian concept of soul» (Heisenberg, 2000: 42). It has to do with a *telos* and much less with divisions. Werner Heisenberg saw the problem he called the «serious defects of the Cartesian partition» (*Ibidem*: 43); a partition that is still useful in natural sciences (classical physics), but breaks down with quantum mechanics.

### 1.1. Philosophy of St. Thomas

If we establish a roadmap for the philosophy of St. Thomas, we may say that this thinker follows the essentials of Aristotle, which includes his perspective of causality. Nevertheless, when it comes to the formal cause, he «found a place for Plato's exemplars» (Doods, 2002: 13). If the ontological and epistemological realism of St. Thomas derived from Aristotle, we settled with Sertillanges that, «although criticizing the master, [Aristotle] fundamentally re-edited Platonism» (Sertillanges, 1951: 25). The relationship between universal and concrete-particular is something evident in both Plato and Aristotle – the notion of form. When Aristotle ask, «why is this individual thing, or this body in this state, a human being», here is the answer: «therefore what we seek is the cause, the form, in terms of which matter is a defined thing, and that is the substance of each thing» (Arist., *Met.*, Z17,1041 b5-9).

Unlike Plato, St. Thomas did not see these *exemplars* «as subsistent forms, but as ideas in the mind of God» (Doods, 2002: 13). Universe and human being are seen as creations of God. Because of the natural ability to perceive the essence of reality — which includes a natural moral law —, human occupies a special place in Creation; he is made in the image and likeness of God; substantially and not accidentally different from other animals and things in nature; qualitatively and not just quantitatively different<sup>2</sup>.

Knowledge results in the union between the human intellect and the object, and/but the entity of the thing is a condition for the intellect to conform to it. «Reality and intelligibility correspond, but a thing must first be, to be intelligible», writes Chesterton in *St. Thomas Aquinas*: «the Thomist places himself firmly in the clear light, common to all man, his brothers, that eggs are not chickens, nor dreams, nor simple hypotheses of a practical nature, but things certified by the authority of the senses, which comes from God» (Chesterton, 2012: 200).

Truth is not a construction or projection of human intellect, and this last one is also not passive in this process. He has an active role<sup>3</sup>; makes present the form of the object (in what we call realism). «Truth [For St. Thomas], is the adequacy of the thing and the intellect» (Aquino, *Sth.*, I, q. 16, a. 1), but we have to be careful with the meaning we give to this *active role*. Active intellect doesn't mean building the object. Intellection is a change; there is «a modification of the subject to conform to the object» (Sertillanges, 1951: 31); this is how we should understand the author of *The Great Thesis of Thomistic Philosophy*, when he writes that «in the fact of knowledge I am passive; the attack comes from outside» (*Ibidem*: 29):

Now what does intuition reveal to us in the first place? Is it our “self” or is it not rather the external reality, as children's knowledge clearly demonstrates to us and adult knowledge confirms to us? It is the non-self, as philosophers say in their own slang, that immediately manifests itself to consciousness, and not the internal conditions of this representation. Therefore, what is known is the object and not the image or support of the image of the object (*Idem*: 28-29).

This is realism, not physical “realism” (that involves a human theory<sup>4</sup>); in fact, this is real realism; it includes a foundation (that is) metaphysics, very different from what happened with the thinking of pre-Socratic philosophers. For Democritus, «[...] according to the convention of men, there are colors, sweets, bitters; in truth, however, there are only atoms and emptiness [...]» (Demócrito, 2000: 112); different aggregates of things that do not generate qualitative differences; there is no intelligent cause behind natural phenomena — everything is bay chance.

<sup>2</sup> Peter Eardley describes *synderesis* as a kind of «link between human intellect and divine wisdom». Eardley, Peter, "Medieval Theories of Conscience", The Stanford Encyclopedia of Philosophy (Fall 2023 Edition), Edward N. Zalta & Uri Nodelman (eds.).

<sup>3</sup> The step that is taken beyond other animals

<sup>4</sup> Modern science has its own language, its cosmology, worldview, metaphysics; it also has its myth and relies on it: the materialist myth.

Democritus cannot be right (according to Aristotle), in identifying the form with the external configurations of living beings apprehensible by the senses. We can read in the Book I of the *Parts of Animals* Aristotle's sentence:

If each of the animals and their parts were by figure and color, Democritus would have pronounced correctly: for it seems that he thought so. In any case, at least, he affirms that it is clear to anyone what quality man is in his form, when he is recognized by figure and color. However, the dead man also has the same form of configuration, but, nevertheless, he is not a man. Furthermore, it is impossible for there to be a hand arranged in any way there is, for example, a bronze one or a wooden one, except by homonymy, such as the doctor drawn. Because it would not be able to carry out its proper function [...]. And similarly, to these cases, none of the parts of a dead person would be exactly such, I mean, for example, eye, hand (Arist., *P.d.A.*, I.1, 640b29-641a5).

## 1.2. Matter according to Aristotle and Thomas Aquinas

Matter is the principle of potency which allows something to come to be — not from non-being, but from being in potency. Contrary to the view held by Democritus, matter is not exactly a ‘thing’. In its most fundamental sense, it is a possibility-of-being, an indistinct power or *potentiae* to be determined by the substantial form. Aristotle describes primary matter only in terms of the substantial change in which it is recognized: «my definition of matter is just this — the primary substratum of each thing, from which it comes to be without qualifications, and which persists in the result» (Arist., *Phys.*, I, 9 (192<sup>a</sup> 31)). Persists as a substance of matter and form. Hence the importance of the metaphysical concepts of act and potency, which explain not only movement and change but also the substantial difference between (different) things.

If we think that today's physicists cannot tell us about the ontological status of matter — a wave packet or a field does not seem to be something very concrete and we know that things get really abstract in physics: if we really think about Democritus' vision of cutting and crushing everything into small, defined parts, the smallest levels of reality or microscopic levels of blocks as being some “simple” ones; clearly, today, this is a view in question. Aristotelian notions of prime matter and power seem to fit into Schrödinger's wave of probabilities.

From the last product of Newtonian physics (that is Einstein's relativity) to this day, there is no perfect articulation between relativity and quantum mechanics (QM). Einstein didn't like QM, but it seems that God really does “play” with dice. The idea that everything should obey inflexible and eternal mathematical laws is contradicted by quantum mechanics experiments, repeated millions of times and which have proven that things are not like that. Not only is there variability and unpredictability but we know that certain phenomena only occur when there is a measurement. Seems that the act of measurement brings out physical properties.

Aristotle seems not to have been wrong, he just did not have the mathematical tools to express, in quantitative language, the probabilistic universe. Interestingly, it was modern science that created these tools, precisely the one that rejected Aristotle's physics, the one philosopher that seems to give meaning to QM.

We need metaphysics to understand physics; that is Heisenberg's point. That's why he reminded us of the concept of potency.

**1.2.1. Primary matter and substantial form.** Chesterton understood Aquinas. Against Kant's transcendental idealism (his transcendental forms and general empiricism and materialism) he writes: «"formal", in Thomist language, means true, or that it has the real and decisive quality that makes one thing be it and not another» (Chesterton, 2012: 200). The substantial form is, according to Michael Doods, «a physical principle of each material substance which makes the substance to be the kind of thing it is which actualizes or determines the possibility-of-being to be a particular kind of substance» (Doods, 2002: 21). The cat is a cat because it has the substantial form of a cat; Human is a human being because he has the substantial form of a Human. When a man dies it ceases to be the one organically unified substance we call “man” and becomes something else — a carcass. *Hilé* or primary matter is what remains in substantial change; *morphé* or substantial form is that which changes. There is no matter without form.

We speak of a non-deterministic, non-blind and non-casuistic reality; but a reality with a *telos*, a Creator, an interdependent and organic reality with a God that is provident. Matter and form are thus physical principles of reality without which it would not exist, and yet they are not things strictly speaking — they are not directly perceived but they are necessary to any human perception to the extent that what we perceive are forms.

**1.2.2. Intelligent perception.** Whenever we perceive something, such as a color or a sound — we can think of a certain animal like a frog — we know that we perceive a set of sensitive forms (color, sound or taste<sup>5</sup>) that nevertheless belong to an intelligible or essential form of frog. This means that human perception is already intellectual in its own way, an intelligent act as it is a rudiment of intelligence that understands the intelligible form of the frog. The spatial form of the frog would not exist if it were not for the intelligible form of the frog that is directed towards human intelligence — a spiritual activity that grasps the immeasurable things in the world. Back to Lisska,

object of sense is an *intentio non sensata* known through the intentional activity of the *vis cogitativa*. Given this analysis, the *vis cogitativa*, [...] provides the possibility for the awareness of an individual of a natural kind on the level of perception. This in turn renders the entire abstraction process, which is part of the intellect, more coherent. This analysis has argued that, for Aquinas, the *vis cogitativa* is a necessary component between sense perception of individual sensible qualities and conceptual thought of sortal properties by means of abstraction (Lisska, 2016: 327).

## 2. What changes with modernity. Descartes' deviation

We already talk of Descartes and Democritus. Descartes presents a philosophy that, in many aspects, does not differ from Democritus. Both argue that what we ordinarily perceive is not reality. Reality is from a non-experienceable domain; is made of atoms (Democritus) and extensive things (Descartes). This is a quantitative and not a qualitative domain. Democritus' physicalism is repeated with Descartes. Physicalism is an ideology that argues that reality comes down to the domain of quantity or what can be measured. Although Descartes' philosophy incorporates concepts such as those of God and the soul, the practical result or the consequence of his thought results in an external and quantitative reality without further ado.

What is eliminated is the concept of substance as a compound of matter and form, the concept of substantial form but also the concept of primary matter and, at the same time, the philosophy of Descartes is not exactly a realistic philosophy like that of Thomas Aquinas. Reality is reduced to what can be measured; deep down, Descartes reduces reality to the subject who measures it. It is more about subjective idealism than realism and hence the focus on the subject and the idea of subjective representation – typical concepts of Modernity that seems to forget that reality also has intelligible forms.

*What is known is the object and not the image or image support of the object*, for St. Thomas, returning to Sertilanges, «it is the form of existence of the known object that communicates; not as a natural form incarnated in matter, but intentionally, that is, as an idea or intention of nature» (Sertilanges, 1951: 33). That's why we can say that in St. Thomas there is a moderated idealism.

What remains of Descartes' philosophy is that the universe is made up of things that can be measured. The concept that disappears is the substantial form (this cannot be measured), the concept of intelligence as spiritual activity and that of purpose (*telos*) for reality also disappear. Even though it might not have been this philosopher's intention, the truth is that Descartes' philosophy prepares physicalism, that is, it prepares materialism.

With the Enlightenment philosophy, the universe no longer has a greater purpose and so does the human being. The causal powers of different substances are replaced by abstract laws of nature — ontology as an integral part of a metaphysics is replaced by phenomenology — *noumenon* gives way to *phenomenon*. Happens that, as Anthony Lisska writes, there is «no epistemology without ontology» (Lisska, 2016: 11). And we can say, there is no rationality without finality. Human knowledge results from one typical knowledge of essences. This is what we can call intellectual conscience— typically human – of being.

Anthony Lisska writes that Thomas Aquinas' realism «is opposed both to a representational philosophy of mind and to a foundationalist epistemology as well as a rejection of Kantian transcendental idealism» (Lisska, 2016: 13); «Kant's method leads directly to idealism, and this is opposed to the metaphysical realism found in Aristotle and Aquinas» (*Ibidem*: 14). Back to Chesterton and against empiricist philosophers, «the understanding is certain of an external object, and not simply of an impression of that object» (Chesterton, 2012: 202). Aristotle and Thomas Aquinas are not anthropocentric, their philosophies are not centered on the subject, but on essences, reality; being. This is conscious in the sense of being conscious is being aware that we are in being.

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<sup>5</sup> To those who want to taste de frog.



### 3. Conclusion

With 19th century psychology, the concept of perception is markedly associated with this physicalist (a different way of saying materialist) and psychologist or subjectivist view of reality. Although very well designed and with considerable advances in neuroscience, what is certain is that the concept of intelligence as a spiritual activity is lost. We are unable to explain how an exclusively quantitative world can generate the qualities that we all experience. Possibly, this world of ours is not limited to quantity, but, as Aristotle and Thomas Aquinas argued, is full of metaphysical meaning. It is a qualitative world.

We finish with one of Alisska: «our experience is of things rather than of sense data» (Lisska, 2016: 326).

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# PLACE ATTACHMENT AND THE MEANING OF HOME FOR IMMIGRANTS

**Lystra Huggins**

*Freshman Year Program, Medgar Evers College, CUNY (USA)*

## Abstract

The physical and psychological aspects of the meaning of 'home' have been studied extensively; however, studies in this area relating to place attachment for immigrants leave room for further research. While most individuals throughout their lives have had multiple homes, for immigrants specifically it has meant establishing those homes in more than one country. The idea that immigrants have their feet planted in two or more places suggests they may also be attached to more than one home. In reality, some immigrants live the rest of their lives in their host country, while others feel a need to return to their place of birth—their homeland—due to place attachment. Those latter individuals feel a strong desire to reconnect to loved ones, childhood places, and memories 'back home.' The purpose of this research is to explore the meaning of home for immigrants who have had multiple homes through a collection of stories of migration and remigration. As the return migrants share their stories, the shared and diverse lived experiences and place attachments will distinctively reveal their meaning of home.

**Keywords:** *Place attachment, meaning of home, immigrant experiences, remigration.*

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## 1. Introduction

The common saying, 'Home is where your heart is,' resounds loudly for immigrants. Many immigrants struggle as they work, create families, and form social connections in two countries. The juxtaposing of learning a new culture, food, and sometimes language can take adjusting even as we live in a global world. It is never a straightforward decision to migrate, and even when the immigrant has acculturated into the host country, they can still yearn to return to their original homeland. This yearning for home propels many immigrants to remigrate. It is not about failure in the host country or wanting to display success; it is what Carol B. Stacks (1996) coined "A Call to Home."

The migration experiences have been scoffed and scorned in our society, so much so they do not highlight the value of immigrants. Immigrants are invested in every facet of everyday life. They are babysitters, housekeepers, cooks, taxi drivers, professors, lawyers, and doctors. Their goal is not to take from the community or where they live (as is popularly believed) but to become successful so they can give back to their many communities both abroad and at home. Some immigrants live the rest of their lives in their host countries, while others must return to their place of birth – their homeland (Berry, 1997). Remigration, or return migration as it is commonly known, points to immigrants who have left their homeland, whether voluntarily or involuntarily, to live in another place, then at a later point move back to their homeland (Gmelch, 1980). To some, the decision was positive and exhilarating; to others, it was difficult; and to a few, the jury is still out as they cope with the effects of remigration. This collection of stories is written in authentic language and attempts to stress the lived experiences of successful immigrants who returned 'home'.

## 2. Design

The design of this research is not in a typical qualitative research format. The method used was based on the interviews from my dissertation research of the lived experiences of immigrants who immigrated to the United States from Trinidad and Tobago and remigrated to their homeland after living there for over ten (10). These collections of stories had many threads in common, but the one that ran through all the stories was the idea of place attachment. Many of these remigrants were still attached to their childhoods' physical and cultural places (Trinidad and Tobago). They all mentioned the food, the norms, the house, and the flora and fauna of their surroundings—the place attachments to home continue to live in them. In searching for a definition of home, Michel (2017) states that ". . . home can denote

physical dwelling, family household, material possessions, as well as geographical and social connections, but these words only hint at the emotional dimensions of the English word home and its cousins in German, Danish, Swedish, Icelandic, and Dutch. In these languages home connotes much more than geography and material reality; home also describes an emotional state of being" (p. 20). That desire for home is the reason many immigrants return. You hear that attachment and longing in the following story's local language and words.

### 3. Method

#### 3.1. Hear the Whispers of a Remigrant<sup>1</sup>

Why did I return to Trinidad after spending all my adult life in New York? The answer is simple: Trinidad is home. I missed the people, food, music, and most of all the 'limin' and the way we do talk. I missed the aura of respectability of how people address each other—some people may say it is a bit formal, but I like it. I subscribe to the philosophy that we should respect our elders and that in order for respect to be given, it must be shown. Like when you walked in, you addressed me as Mr. Smith. I like that even though I prefer to be called, "Baritone" because that is my nickname here. Everyone says that I have a pleasant, baritone voice. I have also heard that my voice is distinctive and powerful. At one time, I wanted to be an opera singer in the US, but that wasn't to be. The truth is that I was a radio announcer in the US for a period of time and now volunteer as one in Trinidad.

While I have a few meetings; today, it is still the best day of the week. I carved out 2-3 hours just for you. I know you hired a car to come to me in Point Fortin, so ah bubble ah pot fuh allyuh so that you and the driver could eat something while allyuh here. I know you will have a 3 hours trip back to Arima and I don't want you stopping to buy nothing to eat. Like everybody who visited here, I hope you like Point Fortin area. It is very country-like—single lane traffic and plenty, plenty fruit trees. I am sure you would have noticed all the mango trees, avocado trees, cashew trees, tamarind trees, chennete trees, guava trees, plum trees and all the others lining the roadway. People always comment that they are amazed at the mansions down this end of the country. Plenty people down here are second generation who rebuilt their parents' homes so you would find that the houses are fairly new. As you may know, the southern area of Trinidad is very rich in natural resources, and it is where the country extracts much of its oil, natural gas, and asphalt.

I left Trinidad after secondary school to further my education in the States. I have an aunt and cousins living in Brooklyn and my parents thought that it would be a good opportunity to stay with them. So I left when I was 17 years old—to be exact. I went to college and earned my Bachelor's degree in Mass Communications. I met a beautiful African American woman in Brooklyn and we got married when I was 29 years old. I have 2 lovely daughters who were born in the States and are now in their thirties. Them sweet too bad. In total, I lived abroad for 43 years and owned a house in Long Island. My wife and I divorced in 2002. We had a good marriage but would quarrel plenty when it comes to our cultures. She would say, "you are always talking about Trinidad, Trinidad, Trinidad when it is America that made you who you are today." While I agreed with her to some extent, it was Trinidad that gave me my values. I am a real Trini. In one of our many arguments she said, "Well if your little island is so wonderful, why are you living here in America?" I looked at her in anger, real vex but it triggered something in me; and I began to think she had a point. Her question made me realize I had to return and it became an all-consuming passion. She real open my eye with that question.

I was not emotionally ready to leave New York though. I stayed for many years after that because I wanted to be a constant figure in my daughters' lives. They were 11 and 13 years old at the time and I did not want to be away from them for any extended length of time. I left when they were both in college. Today, one of my daughters lives in Queens, New York, and the other one is married and lives with her family in Maryland; I travel back to the States twice a year to celebrate their birthdays and to spend time with my grandchildren.

As God would have it, I was forced to return sooner than I like. My mum was sick and I found out on one of my usual Sunday morning calls to her that she was not doing well and wanted to see me. Later that day when I spoke to my aunt, she let me know that her sister had cancer. This hit me like a ton of bricks. It real mash meh up. I was confused—angry—lost. So without giving it too much thought, I packed up and left the US immediately. . .leaving everything behind. A year after coming back, moms passed away. It was the most difficult time of my life—seeing the pain she was having and slowly seeing her leave me. Everytime I talk about her my pores does still raise.

On that flight back home to see my mother, I met a woman on the plane and we had a great conversation. This woman was born and grow up in England, but had family in Trinidad. We exchanged

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<sup>1</sup> The spelling or structure of the story – the way of speaking was not changed.

numbers and continued talking during the year that I spent with my mother. Right after my moms died, we got married. When I study how fast we get married, I am not sure if I truly loved her, or if it was because I had just lost my mother and felt a need to be comforted. She was there for me every step of the way during this most difficult period of my life and I may have confused empathy for love. She left England and we started a life in this same house here.

Four years into the marriage, my new wife was having difficulty adjusting to living in Trinidad. She had never lived in the Caribbean and complained about everything... the crime, the customer service, the lackadaisical attitude of people, and lack of what she would consider nice places to 'hang out' after work besides 'rum shops'. I told her the kind of places she wanted to go, she would need to go to quite Chaguanas or Port of Spain and both were too far from here Point Fortin. I bought this house as an investment property in 1986 while I was living in New York. It is now worth 6 million TT dollars. My wife decorated the house when she moved in so this is all her design. Still, she didn't like living here. We talked about it and she wanted us to go to England to live, but I love my Trinidad, so she went to England, and I stayed home in Trinidad. It didn't work out and although I miss her, I had to make another adjustment. I now focus on improving the lives of them youth in the area. I believe it is my mission and calling for the rest of my life. I have no regrets about migrating to the US, or remigrating to Trinidad and Tobago. This is where I want to spend the rest of my life. The US had my life—but Trinidad have my soul.

#### 4. Conclusion

This is just one story of the thousands of individuals who have migrated from their home country, assimilated, and remigrated after years of successful professional lives. The notion of home has been discussed as it relates to displacement. However, for the many immigrants who have a choice to stay or return home, those individuals return because of the connection to their homeland's culture, norms, and physical space. Marcus (1992), in her chapter in the book *Place Attachment*, explains that "we hold onto childhood memories of certain places as a kind of psychic anchor, reminding us of where we came from, of what we once were, or of how the environment nurtured us when family dynamics were strained. Whatever befalls us in later life, those memories remain" (p. 89). Returning to the place one lived in early childhood or the place one identifies as "home" has not been researched extensively. In fact, "traditionally, immigration scholars have tended to analyze population flows as unidirectional: Migrants leave the sending society, immigrate and settle in the host society, and eventually assimilate" (Tsuda, 2009; p. 8). The story in this paper is one of many stories that capture the experiences of both migration and remigration. Migration is understood as a journey to create a better life; however, the nuances of remigration or return migration need more researchers to listen to the whispers of place attachment and the pull of home from actual return migrants.

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# A DESCRIPTIVE-SOCIAL-NORM BASED INTERVENTION TO INCREASE A PRO-ENVIRONMENTAL BEHAVIOR IN A RESTAURANT

**Alessia Dorigoni, & Nicolao Bonini**

*Department of Economics and Management, Consumer Neuroscience Laboratory (NCLab),  
University of Trento (Italy)*

## Abstract

Food waste has emerged as a global issue with significant economic, social, and environmental implications. Regardless of the stage at which it occurs, food waste represents an opportunity to address the global challenge of hunger and malnutrition while exerting unnecessary pressure on the environment and resources. This paper investigates the use of a descriptive social norm to encourage restaurant customers to use doggy bags thereby reducing food waste. Two studies were run in two restaurants in Northern Italy. In the first study, we used a table tent already analyzed in the literature and the results showed a significant increase in the request for doggy bags in the presence of the table tent. Since the presence of the table tent also increased the likelihood of customers to leave food on their plates, we decided to run a second study, in another restaurant, to analyze by two separate table tents the effect of the pure social norm and the effect of the reminder. Results suggest that only the reminder effectively encourages customers to use doggy bags, but both conditions increase the amount of food leftover.

**Keywords:** *Nudging, environment, decision-making, social norms, pro-environmental behavior.*

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## 1. Introduction

Food service waste is defined as food waste generated in settings where food is consumed in substantial quantities outside of the home (e.g., restaurants, cafeterias and canteens). Several studies focused their attention on food service waste in countries from all over the world. If we consider the studies defined as high confidence level studies by the United Nations Environment Program (UNEP) Food Waste Index, Report 2021 (based on how robust the estimate of food waste is for tracking food waste in the given country), the higher kg per capita food waste in food services is in Austria with 31 kg/capita (Caldeira et al., 2019), and the lowest in Estonia with 17 kg/capita (Moora et al., 2018).

## 2. Study 1

The aim of Study 1 is to test the effectiveness of the display of a social norm in a restaurant to induce customers to ask for a doggy bag. Following Giaccherini et al. (2021), in the experimental condition a table tent was used that read (here we provide an English translation of the original Italian message): “Doggy bag? Yes, please. From a recent Coldiretti survey, a significantly increasing number of Italian restaurant guests are asking for doggy bags to take their leftovers home. If you want, you can ask your waiter for a doggy bag here”. We decided to add “from a recent Coldiretti survey” and “significantly” to the message used by Giaccherini and colleagues in order to increase the authority of the message. In the control condition, no table tents were used.

The experiment took place over two weekends, the first from June 2nd to June 4th, 2023 (control group) and the following weekend from June 9th to June 11th (experimental group).

We provided the restaurant with an adequate supply of food containers. To minimize the environmental impact of the experiment, the food containers were made from 100% recycled and biodegradable materials.

We registered the number of people who left the food uneaten at the end of the meal, the amount of food left in the plate, and the number of people who asked for a doggy bag.

## 2.1. Results

During the two weekends, 367 people visited the restaurant (189 in the control condition and 178 in the experimental condition). The percentage of customers who asked for a doggy bag was 3% and 8%, respectively in the control and experimental conditions. The percentage of customers who left uneaten food in the plate was 5% and 10%, respectively in the control and experimental conditions. The amount of uneaten food was 61 grams and 123 grams, respectively in the control and experimental conditions.

Two logistic linear regressions were run to test for the effect of the independent dummy variable (presence Vs. absence (referent group) of the social norm information) on the two dichotomous dependent variables: request (1) vs. not-request (0) of the doggy bag and left (1) vs. not-left (0) food in the plate.

Results show that the slope of the independent variable is statistically significant in the first case ( $\beta = 1.220$ ;  $SE = 0.527$ ;  $z$  value = 2.313;  $p = 0.021$ ;  $\text{Exp}(\beta) = 3.39$ ), and marginally statistically significant in the second case ( $\beta = 0.748$ ;  $SE = 0.426$ ;  $z$  value = 1.754;  $p = 0.075$ ;  $\text{Exp}(\beta) = 2.11$ ).

A linear regression analysis was run to test for the effect of the independent dummy variable (presence Vs. absence (referent group) of the social norm information) on the continuous dependent variable "amount in grams of leftover". Results show that the slope of the independent variable is statistically significant ( $\beta = 61.83$ ;  $SE = 28.34$ ;  $t$  value = 2.182;  $p = 0.039$ ).

Results show a consistent choice pattern. The presence of the table tent induces customers to leave more frequently food in their plate, in higher quantity, and asking more frequently for the doggy bag. This seems to reflect a strategic decision whereby customers decide to leave an appropriate amount of food in the plate to be lately eaten (e.g., at home).

From this study is not clear whether the reported findings are due to the presence of the social norm (e.g., the results of the Coldiretti survey displayed on the table tent that show how people behave in restaurants) or are simply due to a reminder effect. In the former case, the presence of the social norm is necessary to produce the reported effect. In the latter case, it is not necessary. For example, any message reminding people of the possibility to bring home food could induce them to ask for a doggy bag, without any reference to how people behave in restaurants. The aim of the second study was to test such a hypothesis.

## 3. Study 2

To test whether the provision of the social norm in the table tent accounts for the results reported in Study 1, two experimental conditions were devised. Based on the original message used in Study 1, in one experimental condition ("only social norm"), the table tent displayed only the social norm piece of information, that is "From a recent Coldiretti survey, a significantly increasing number of Italian restaurant guests are asking for doggy bags to take their leftovers home". In the second experimental condition ("only reminder"), the table tent displayed the message: "Doggy bag? Yes, please. If you want, you can ask your waiter for a doggy bag here". As in the previous study, in the control condition no table tents were displayed. In this study we used the same methodology used in the previous study. The second study was run in a second restaurant which is similar in type of served food and located in the same area (Northern Italy). Again, we registered the number of people who left uneaten food, the amount of food left in the plate, and the number of people who asked for a doggy bag.

### 3.1. Results

We collected the data during six meals (three lunches and three dinners) for each condition. The data collection continued for nine days. During these days 546 people visited the restaurant (183 in the "control" condition, 176 in the "only social norm" condition and 187 in the "only reminder" condition).

The percentage of customers who asked for the doggy bag was 7%, 9% and 14%, respectively in the control, "only social norm", and "only reminder". The percentage of customers who left food in the plate across the three conditions was 16%, 11% and 18%. The amount of uneaten food (in grams) across the three conditions was 105, 122 and 120.

Compared to the previous study, the same plan of statistical analysis was used to analyze the effect of the independent categorical variable "Type of table tent" (no tent, only social norm or only reminder) on each of the three dependent variables: Doggy bag request, food leftover and amount of uneaten food. The control condition (e.g., absence of table tent) was used as referent category.

Results of the first logistic regression analysis show that only the experimental condition "only reminder" induced customers to ask for more doggy bags compared to the control condition. The effect is statistically significant,  $\beta = 0.877$ ;  $SE = 0.364$ ;  $z$  value = 2.411;  $p = 0.016$ ,  $\text{Exp}(\beta) = 2.41$ . We could interpret this finding by saying that the probability of asking for the doggy in this experimental condition is nearly two-and-a-half times greater than that in the control condition.

Results of the second logistic regression analysis show that the number of persons who left uneaten food is similar across the three conditions because the two slopes related to the two dummy variables are not statistically significant.

Results of the linear regression analysis show that in both experimental conditions customers leave a higher quantity of uneaten food than in the control condition. The slope for the condition “only social norm” is  $\beta = 17.58$  (SE= 8.798; t value = 1.999; p = 0.049) and that for the condition “only reminder” is  $\beta = 14.72$  (SE= 7.688; t value= 1.916; p= 0.059). However, it should be noted that although the mean differences are statistically significant, the importance of a difference of 15 grams of food (e.g., the equivalent of two cloves of garlic) is negligible for the issue of the study.

#### 4. Conclusions

Customers tend to leave nonnegligible quantities of uneaten food in the plate for whatever reason. In our study, an average of slightly less than 100 grams of leftover was found in the control condition which corresponds, for example, to a typical portion of first dish (e.g., “pasta”). Is there a way to avoid such a food service waste? Yes, but probably not for the reasons we speculated at the start of the study.

Compared to a control condition, the experimental condition where “only the social norm” was displayed is not sufficient to induce more customers to ask for a doggy bag. However, the simple display of a reminder (without any reference to a social norm) is sufficient to induce customers to leave more food in the plate that will be later collected into a doggy bag.

From a theoretical side, the reported finding opens an intriguing interpretation of the several “positive effects” reported in the literature which are attributed to the display of a social norm. As in the case of Giaccherini et al., (2021), it might be that the information about what other people is doing (e.g., the social norm) is mixed together with other types of information (e.g., a reminder; an invitation) that can drive the target behavior. If this is the case, the potential confounding makes it difficult to unambiguously interpret the results. Future research should try to assess the effect of the presence of the social norm in a cleaner experimental setting where other potential variables are controlled for. Also, it should try to assess whether the effectiveness of “simple reminders” generalizes across other pro-environmental behaviours.

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## **BEING A CLIMATE VOLUNTEER IN TURKEY: TURNING ECO-ANXIETY INTO ACTION**

**Meryem Demir Gl**

*Educational Sciences, İstanbul Kltr University (Turkey)*

### **Abstract**

The repercussions of climate change pose a threat not only to physical health but also to psychological well-being. Specifically, an awareness of climate change and its consequences can lead individuals to experience eco-anxiety. Given the current state of climate change and its potential future outcomes, it is normal to feel anxious about it, as this anxiety can serve as a driving force for pro-environmental actions. However, when eco-anxiety becomes overwhelming and people lack effective coping strategies, it can lead to a state of paralysis. In particular, individuals actively involved in climate-related efforts may be more prone to experiencing eco-anxiety due to their heightened awareness of the climate crisis. The objective of this study was to explore the perceptions, emotions, and experiences of individuals engaged as climate volunteers concerning climate change. Data for the research were gathered through semi-structured interviews with seven female climate volunteer participants aged 21-30, residing in different cities in Turkey, and having 6 months to 2 years of climate volunteering experience. The analysis, carried out using phenomenological analysis, revealed that climate volunteers perceive climate change as a human-induced, critical, and inadequately acknowledged crisis in contemporary society. They believe that collective and fair efforts by all individuals can mitigate this crisis. Participants frequently expressed emotions of fear, anxiety, anger, and pessimism related to climate change, although some held onto a sense of hope. Regarding the experience of being a climate volunteer, it was evident that the desire to take meaningful actions against the climate crisis and a positive view of civil society organizations played pivotal roles in motivating participants to engage in voluntary work. Sustaining their voluntary efforts appeared to be closely linked to feelings of accomplishment and belonging to a community with shared values. Taking meaningful actions, preserving hope, and seeking support from the volunteer group were deemed crucial for safeguarding participants' psychological well-being in the face of the climate crisis. In conclusion, eco-anxiety and a favorable perception of civil society can serve as motivating factors for climate volunteer activities. Engaging in actions with a like-minded group may also serve as a purposeful coping strategy in addressing anxiety, thus contributing to individuals' mental well-being.

**Keywords:** *Climate change, eco-anxiety, climate volunteers.*

### **1. Introduction**

Global warming is rapidly increasing, and climate change is affecting human life in various ways. The recognition of climate change as a global threat and the consequent rise in global temperatures due to this climate crisis have led to increasingly prominent consequences such as the escalation of extreme weather events, depletion of resources (clean water sources, food, etc.), and forced migrations caused by climate change. These emerging consequences have a significant impact on individuals' mental health.

It is acknowledged that climate change directly and/or indirectly affects mental health (Berry et al., 2008; Fritze et al., 2008). These effects can result in both acute stress related to disasters and longer-term mental health issues associated with indirect impacts (such as water and food shortages, extreme climate events, etc.), including anxiety disorders, depression, substance use, and an increase in suicidal tendencies (Clayton et al., 2017; Cianconi, Betr & Janiri, 2020).

Furthermore, the adverse impact of the climate crisis on mental health can indirectly occur based on awareness of the crisis (Fritze et al., 2008). Even without encountering the consequences of the threats to our world due to climate change, general awareness of these impending threats can evoke emotional reactions like anxiety, fear, concern, and despair (Fritze et al., 2008). These emotional reactions to climate change are termed eco-anxiety and defined as 'increased emotional, mental, or physical distress in



response to dangerous changes in the environment' (Climate Psychology Alliance, 2022, p.25). The American Psychological Association (APA) defines it as a 'chronic fear of environmental doom' (Clayton et al., 2017).

The uncertain, unpredictable, and uncontrollable nature of the climate crisis is seen as a significant factor influencing eco-anxiety (Pihkala, 2020). While paralyzing forms of eco-anxiety pose a problem, the view that eco-anxiety is a natural response to the climate crisis and encourages environmentally protective behaviors is gaining traction (Barlow, Durand, & Hofmann, 2019; Clayton, 2020; Kurth & Pihkala, 2022; Pihkala, 2020; Wullenkord et al., 2021). Additionally, due to the complexity of information acquired about the climate crisis and the perceived difficulty in solving the problem, individuals might choose to deny or avoid thinking about it as a coping mechanism. This attitude could lead to emotional and mental responses such as indifference, despair, mockery, skepticism, or fatigue with the issue (Fritze et al., 2008). Research findings have indicated that increasing awareness and knowledge about the climate crisis affect anxiety levels (Milfont, 2012; Yılmaz, Can, & Şen, 2018).

Coping with eco-anxiety can involve engaging in voluntary activities aimed at combating climate change. Individuals who recognize the effects of climate change and experience emotions such as anxiety, concern, and anger in response to these changes may actively cope with these changes. Research findings indicate that such voluntary activities can reduce the detrimental effects of eco-anxiety on mental health and support individuals' well-being (Verplanken & Roy, 2013). However, research on the relationship between eco-anxiety and voluntary activities has been conducted in individualistic cultures where awareness of climate change is higher, and voluntary efforts are supported (Coffey et al., 2021). Limited research exists in Turkey, where the expected impact of climate change is moderate. Existing studies suggest that as knowledge about the climate crisis increases, anxiety also increases (Yılmaz, Can, & Şen, 2018), and climate volunteers experience higher levels of eco-anxiety (Ediz & Yanık, 2023).

## **2. Objectives**

The primary objective of this study was to identify the thoughts and experiences of individuals serving as climate volunteers regarding climate change. Specifically, the aim was to determine the perceptions and experiences of climate volunteers concerning climate change. Additionally, the study sought to bring to light the emotions they undergo in response to climate change. The relationship between these thoughts and emotions and the act of volunteering as climate advocates was explored, aiming to understand the motivations behind individuals' voluntary efforts and how these activities impact them.

## **3. Methods**

### **3.1. Research design**

This research was conducted using descriptive phenomenological design, which is a method that allows in-depth determination of the perceptions and experiences of individuals working as climate volunteers about the climate crisis.

### **3.2. Participants**

The research participants are seven female climate volunteer participants aged 21-30, residing in different cities in Turkey, and having 6 months to 2 years of climate volunteering experience.

### **3.3. Data collection and analysis**

Data for the research were gathered through semi-structured interviews. The interviews were carried out in June 2023 and July 2023 via online meetings that lasted about 30 minutes. The data were analyzed using a combination of inductive and deductive qualitative approaches.

## **4. Findings**

### **4.1. Perceptions about climate changes**

When examining the responses of the participants, it is evident that they attribute the climate crisis to human activities, particularly identifying excessive production and consumption as the root cause. Furthermore, participants believe that the climate crisis is currently at a serious level and anticipate it worsening over time. They express concerns that disadvantaged groups will be more prominently affected, envisioning a future threatened by climate-induced migrations, scarcity, floods, and other adverse events. Despite recognizing the severity of the crisis, participants feel that the awareness within

their communities is notably low, and they perceive existing policies as inadequate to address the crisis effectively. While all participants emphasize the importance of individual efforts, they also share the belief in the necessity of collective action, asserting that a joint endeavor can potentially slow down the progression of the climate crisis.

#### **4.2. Emotions about climate changes**

Participants commonly described their emotional responses to the climate crisis as anxiety, fear, and concern. Additionally, they mentioned experiencing anger and pessimism in the face of this crisis. However, some participants also expressed feelings of hope.

#### **4.3. Experiences with climate emotions**

When examining participants' experiences related to their emotions about the climate crisis, two main themes emerged: experiences that increase eco-anxiety and those that decrease it. Experiences that heightened eco-anxiety included encounters with climate insensitivity and the perceived inadequacy of policies. Expressions devaluing the efforts of individuals in the community were identified as significant contributors to increased pessimism. Experiencing the consequences of the climate crisis was also recognized as a crucial factor in elevating anxiety and sadness levels. On the other hand, experiences that reduced eco-anxiety were associated with observing the effects of voluntary activities, learning about the efforts of others coping with the climate crisis, and engaging in climate protection actions in both professional and personal lives. Discussing concerns with volunteer groups and social circles also proved effective in alleviating participants' anxieties.

#### **4.4. Experience of being a climate volunteer**

Findings related to the experience of being a climate volunteer were categorized into two main themes: motivations for becoming a climate volunteer and the consequences of being one. Participants indicated that the desire to take meaningful actions in response to the impacts of the climate crisis was a significant motivation for their participation in volunteer activities. Positive attitudes towards civic engagement, growing up in an environmentally conscious environment, and receiving education about climate change were identified as important factors contributing to participants becoming climate volunteers. The sense of accomplishment derived from the feeling that they were doing something beneficial and the sense of belonging to a group with similar values were described as crucial factors in sustaining their involvement in climate volunteer activities.

### **5. Discussion**

Participants believe that human production and consumption habits are the main contributors to the climate crisis. They emphasize observing the current impacts of the climate crisis directly and anticipate its effects intensifying soon. Participants hold beliefs about the future of the climate crisis that could be described as catastrophic. These views align with research findings conducted in both the same culture (Azizoğlu et al., 2023) and different cultures. These findings suggest that volunteers are confronting the reality of the climate crisis and are not in denial. The majority of participants having received education on the climate crisis during their educational experiences and within the scope of volunteering may have influenced these views.

Most volunteer participants believe that the climate crisis can be slowed down through collective human effort. This belief may drive their engagement in volunteer activities. This finding could be interpreted as evidence of the importance of developing a belief that the climate crisis can be slowed down in the fight against it. There seems to be a need for both experimental and predictive research on the impact of beliefs and behaviors related to the climate crisis.

The emotions of climate volunteer participants intensely encompass feelings of anxiety and fear, as categorized in Pihkala's (2022) climate emotions taxonomy under the dimension of 'Fear, Worry, Anxiety, Powerlessness, Dread.' These emotions are explained by the threat to individuals' security (Pihkala, 2022). Additionally, participants express feelings of anger and hopelessness regarding societal indifference and the inadequacy of policies. While these intense emotions can be paralyzing, they are also seen as motivating individuals to take action in the face of the climate crisis. This research also indicates that anxiety and fears related to the climate crisis motivate individuals to become climate volunteers. The belief among participants that they can slow down the climate crisis through collective human effort may have played a role in directing individuals toward action based on these beliefs about anxiety and fear.

Expressions indicating that taking action both individually and as part of a group reduces eco-anxieties support the importance of activism in coping with eco-anxieties. Furthermore, the statements about reducing eco-anxiety through discussions about the climate crisis both within the involved volunteer group and the social environment support the positive effects of emotion-focused coping.

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# IMPACT OF NATURAL AND URBAN ENVIRONMENTS ON THERMAL PAIN PERCEPTION: EXPERIMENTAL STUDY IN VIRTUAL ENVIRONMENTS

**Anna Mucha, Ewa Wojtyna, & Anita Pollak**

*Faculty of Social Sciences, Institute of Psychology, University of Silesia in Katowice (Poland)*

## Abstract

The environment in which an individual resides and observes may play a meaningful role in well-being and related constructs. Prior investigations have highlighted the positive influence of natural environments on individuals, impacting mood and psychophysical sensations, such as pain relief. Conversely, urban settings, dominated by concrete elements, might lead to mood decline and heightened stress levels. Comparable associations concerning affect arise in the context of perceiving virtual natural and urban environments. Nevertheless, this topic has been insufficiently explored by many researchers, particularly in the context of pain associations. The aforementioned studies inspired and guided the design and implementation of the described experimental research in the field of environmental psychology, utilizing emerging technologies, especially virtual reality (VR), increasingly recognized in mental health. The primary objective was to investigate the impact of a simulated virtual environment, mirroring a natural setting abundant in greenery, on the perception of acute pain induced by thermal stimuli (high temperature) – encompassing intensity, unpleasantness, pain tolerance. Comparative analyses were conducted between the virtual natural environment (constructed in the likeness of a therapeutic garden), virtual urban environment and a control group without virtual projections. Secondary objectives aimed to determine the mutual relationships among variables such as positive and negative emotions, virtual environment preferences, sense of presence and restorative experience in the context of the perception of environments and induced thermal pain. The study involved 126 healthy adults, with 42 individuals in each of the three comparison groups. Oculus Rift VR technology and the TSA-II neurosensory analyzer facilitated the experiment. Alongside demographic data, participants' subjective feelings concerning VR and pain were evaluated using: *Visual Analogue Scale* (VAS), original *Restorative Experience in the Virtual World* questionnaire, an adapted *Slater-Usuh-Steed* (SUS) questionnaire. Results of psychometric analyses (Kruskal-Wallis tests, Wilcoxon tests and contrast analyses) underscored the positive impact of the virtual natural environment on individual pain perception and mood. The virtual natural environment outperformed the virtual urban environment and the control group, particularly in subjective pain components like intensity or unpleasantness. Variables such as restorative experience, sense of presence and virtual environment preference also proved pivotal in pain perception and tolerance threshold alterations, contingent on specific conditions. This suggests significant potential applications of virtual natural environments in various areas of psychology and related fields, including supportive analgesic method and a post-psychotherapeutic session relaxation form.

**Keywords:** *Environmental psychology, nature, acute pain, virtual reality, experiment.*

## 1. Introduction

The environment in which an individual lives and observes can significantly influence their well-being and broadly understood psychophysical health. The type of environment plays a non-trivial role in this regard. Previous studies indicate significant differences in the impact of natural environments, with a preference for natural greenery over typical urban or concrete landscapes (Hartig et al., 2003; Nutsford et al., 2016). Explanations for these differences can be traced to evolutionary psychology and the embeddedness of the human species in nature. Therefore, due to their species affiliation, humans prefer natural environments (Wilson, 1984), perceiving them (subconsciously) as sources of stress reduction (Stress Reduction Theory, Ulrich, 1983). Moreover, the specific properties of natural environments contribute to easy, involuntary attention focusing on non-taxing, soothing stimuli, leading to restoration of affective-cognitive functions (Attention Restoration Theory, Kaplan, 1995).

Previous studies have emphasized the positive impact of natural environments, particularly on an individual's mood, contributing to the reduction of anxiety symptoms and decreasing the intensity of negative emotions (Robinson, 2018). Contact with nature can also be an effective form of stress reduction – not only conscious contemplation but even being in a natural environment (Richardson et al., 2020). However, there are also indications that the perception of natural environments can positively affect psychophysical experiences (Quick et al., 2017), including pain relief (Gungormus et al., 2024) or faster recovery after medical procedures (Ulrich, 1984).

Similar relationships, especially concerning emotions, arise in the context of virtual natural and urban environments (Yin et al., 2019) thanks to the occurrence of phenomena such as effective distraction and a sense of presence (the feeling of actually being in a virtual environment; Tack, 2019) combined with the perception of potentially restorative environments (McAllister et al., 2017). Nevertheless, many studies, especially in the case of impact on pain sensations, have not sufficiently delved into this topic, only pointing to the significant potential of using virtual natural environments in a psychological context (Tanja-Dijkstra et al., 2018).

## 2. Objectives

The above-mentioned studies served as inspiration and guidance for designing and conducting an experimental study in the field of environmental psychology, utilizing modern technologies, specifically virtual reality (VR), increasingly recognized and widely employed in the realm of mental health.

The main goal was to explore how a simulated virtual environment, resembling a nature-rich setting with abundant greenery, influences the perception of acute pain caused by thermal stimuli (high temperature). This involved examining aspects like intensity, unpleasantness, and pain tolerance. Comparative assessments were carried out among three groups: one exposed to a virtual natural environment (resembling a therapeutic garden; VNE), another to a virtual urban environment (VUE), and a control group without any virtual projections. Secondary objectives aimed to establish the interconnections between variables such as mainly positive and negative emotions, but also preferences for virtual environments, sense of presence, and the restorative experience in the context of environment perception and induced thermal pain. The main hypotheses in the study were as follows:

1. VNE has a positive influence on pain experiences induced by thermal stimulation.
2. VNE has a more positive impact on pain experiences than a VUE.
3. VNE has a more positive impact on an individual's emotions than a VUE.

## 3. Methods

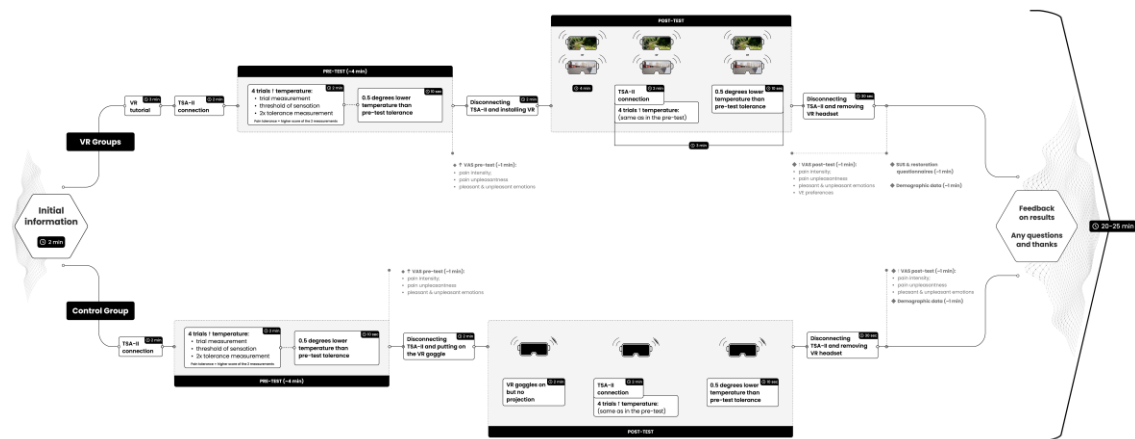
An experimental investigation was designed with the manipulation of the independent variable, aiming to establish causal relationships. The study enlisted 126 healthy adults, with 42 individuals in each of the three comparative groups (VNE group, VUE group and control group – the group wore VR goggles, but were not exposed to a virtual projection). To be eligible for participation, individuals had to fulfill specific criteria e.g., providing informed consent, being of legal age, having no apparent physical conditions, and no prior adverse experiences with VR.

The TSA-II neurosensory analyzer (Medoc) was utilized in an experiment involving Oculus Rift VR technology, enabling pain-related measurements and high temperatures up to 50.5 degrees Celsius. In addition to collecting demographic information, participants' subjective experiences with VR and pain were assessed through tools such as the *Visual Analogue Scale* (VAS), the original 6-item *Restorative Experience in the Virtual World* questionnaire ( $\alpha = 0,78-0,86$ ;  $n = 84$ ), and a linguistically adapted 3-item *Slater-Usch-Steed* (SUS) questionnaire for sense of presence measurement (original Slater et al., 1994; an adapted version:  $\alpha = 0,63-0,80$ ;  $n = 84$ ).

## 4. Procedure

Participants were provided with instructions on using VR equipment, assessing their controller proficiency in a neutral testing environment. They were directed to sit comfortably and shake their non-dominant hands. The thermode of the TSA-II was then applied directly to the skin of the inner forearm. In their other hand, participants held a computer mouse, providing them full control during the examination; pressing the button led to an instant cooling of the thermode. The procedure involved virtual projection, pre- and post-tests measuring pain components and positive and negative emotions, and measurements related to the sense of presence, restorative experience, and preferences for VNE or VUE. Participants also completed a demographic data questionnaire. The study procedure is detailed in Figure 1.

Figure 1. The experimental procedure – diagram.



## 5. Results and discussion

All statistical and psychometric analyses were performed in SPSS v26.0 for Windows. Due to the non-normal distribution of variables in line with the first research hypothesis, the Wilcoxon test for repeated measurements was employed as an alternative to the Student's t-test. To assess hypotheses 2-3, the Kruskal-Wallis test, chosen for its suitability with non-normally distributed data, was utilized as an alternative to one-way ANOVA. Subsequently, a contrast analysis was performed.

### 5.1. Research group

Out of the 216 volunteers who expressed interest in participating, 126 individuals were ultimately included in the final sample ( $M_{age} = 23.28$ ). Within this sample, 71% identified as female, 27% as male, and 2% indicated a different gender identity. 57.1% of participants in the survey had never used VR before, while 92.6% of those who had reported neutral or favorable experiences.

### 5.2. Virtual reality and pain

**5.2.1. Pain intensity.** The Wilcoxon test conducted to assess the repeated measurement of pain intensity in the VNE group (pre-test and post-test) yielded statistically significant results ( $z = 2.23$ ;  $p = .008$ ). The rank-biserial correlation value ( $r_{rb} = .49$ ) suggests a moderate effect size. As suspected, not only actual nature with a predominance of greenery but also its virtual projection can induce psychologically beneficial effects (cf. Léger & Mekari, 2022), including an analgesic effect. Additionally, the Kruskal-Wallis test was performed to assess the variability in pain intensity measurements, specifically the contrast between pre-test and post-test pain intensity across various comparison groups. The findings revealed statistical significance ( $\chi^2(2) = 7.14$ ;  $p = .028$ ), indicating a significant difference among groups in the reduction in perceived pain intensity, supporting Tanja-Dijkstra et al. (2018) results.

Examination of descriptive statistics indicated that the VNE group showed the most substantial decline in pain intensity measurements. In the VNE group, the average reduction in pain intensity was .36 points, whereas in the VUE and the control group, the intensity increased by an average of .21 points. A contrast analysis revealed statistically significant distinctions between both the VNE group and the VUE group ( $t = -2.39$ ;  $p = .018$ ) and the VNE group and the control group ( $t = -2.39$ ;  $p = .018$ ).

**5.2.2. Pain unpleasantness.** The outcome of the Wilcoxon test, performed to assess the recurrent measurement of pain unpleasantness in the VNE group (pre-test and post-test), reached statistical significance ( $z = 2.32$ ;  $p = .001$ ). The rank-to-serial correlation value ( $r_{rb} = .58$ ) signifies a substantial effect size. Being in a natural environment and observing its natural elements may contribute to human psychology and closely related bodily sensations, such as perceiving pain as milder and less unbearable (cf. Quick et al., 2017). The Kruskal-Wallis test was used to compare pre-test and post-test scores of pain unpleasantness across different groups. The results showed statistical significance ( $\chi^2(2) = 10.48$ ;  $p = .005$ ), indicating a significant difference in the reduction of pain unpleasantness among these groups, highlighting the varied impact on pain unpleasantness observed across the studied groups.

Descriptive statistics concerning the variability in pain unpleasantness measurements highlight the most significant reduction in the VNE group. More specifically, the VNE group demonstrated an

average decrease in pain unpleasantness of .88 points. In contrast, the VUE group experienced a minor increase in unpleasantness by .05 points, while the control group recorded a slight increase of .17 points. Consequently, a contrast analysis was conducted, revealing statistically significant differences both between the VNE group and the VUE group ( $t = -2.48$ ;  $p = .014$ ), as well as the VNE group and the control group ( $t = -2.8$ ;  $p = .006$ ).

**5.2.3. Pain tolerance.** Concerning the assessments of pain tolerance thresholds within the VNE group (pre-test and post-test), the outcome of the Wilcoxon test, though nearing significance, did not reach statistical significance ( $z = -1.57$ ;  $p = .059$ ). Furthermore, distinct groups showed no significant differences in pain tolerance threshold measurements, indicating no intergroup variations in the augmentation of pain tolerance, as per the Kruskal-Wallis test ( $\chi^2(2) = 2.44$ ;  $p = .295$ ).

Based on findings from scientific studies (cf. Ho et al., 2022), it was hypothesized that a VNE might contribute to an increase in individual pain tolerance due to distinctive distraction involving attention engagement with a diverse environmental stimulus (cf. Moran, 2019). Importantly, over 25% of participants reached the tolerance level at the maximum allowable value for safety reasons (50.5 degrees Celsius). Therefore, it is likely that if participants were allowed to continue the measurement, some of them could achieve higher readings, potentially revealing differences. Additionally, participants with a strong sense of presence in the VNE group reported an increase in pain tolerance thresholds (similarly to the restorative experience), unlike participants from the VUE group. This may indicate that other variables are also important for this issue.

### 5.3. Virtual reality and emotions

**5.3.1. Negative emotions.** The result of the Kruskal-Wallis test, conducted for the difference in negative emotions measurements (pre-test and post-test) in individual groups, indicates a significant intergroup difference in the reduction of negative emotions ( $\chi^2(2) = 14.16$ ;  $p < .001$ ). Moreover, the analysis of descriptive statistics for the difference in measurements of negative emotions levels suggests its highest decrease in the VNE group among all groups. To examine whether the difference between the VNE group and the other comparative groups is statistically significant, a contrast analysis was performed. Its results indicate statistically significant differences both between the VNE group and the VUE group ( $t = -2.16$ ;  $p = .033$ ), and the VNE group and the control group ( $t = -3.82$ ;  $p < .001$ ). The obtained results, akin to previous publications (cf. Yin et al., 2019; Robinson, 2018), indicate a more favorable impact of contact with nature compared to urban environments concerning emotions.

**5.3.2. Positive emotions.** The result of the Kruskal-Wallis test, conducted for the difference in positive emotions measurements (pre-test and post-test) in individual comparative groups, is statistically significant ( $\chi^2(2) = 19.34$ ;  $p < .001$ ). Descriptive statistics for the difference in measurements of positive emotions levels indicate its highest increase in the VNE group, what is a similar result to McAllister et al. (2017) conclusions. To examine whether the difference between the VNE group and the other groups is statistically significant, a contrast analysis was performed. The obtained results indicate statistically significant differences both between the VNE group and the VUE group ( $t = 2.23$ ;  $p = .028$ ), and the VNE group and the control group ( $t = 4.37$ ;  $p < .001$ ). Moreover, deeper analyses reveal that in the VUE group, increased preference for virtual environments leads to higher positive emotions. This effect is similar, but reversed, to Grahn and Stigsdotter's (2003) study based on real environments, which highlighted the significance of aesthetics in mood mainly in natural environments.

### 5.4. Answers to the hypotheses

The study partially confirmed Hypothesis 1 that VNE positively impacts pain by reducing its intensity and unpleasantness, but not its pain tolerance. Similarly, Hypothesis 2 showed that VNE has a more favorable impact on pain intensity and unpleasantness than VUE, but no significant differences were observed in pain tolerance thresholds. Hypothesis 3 confirmed that VNE has a more positive effect on emotions than VUE, decreasing negative emotions and increasing positive ones.

## 6. Conclusions

The results of the study revealed the positive influence of the VNE on pain perception and perceived emotions. VNE outperformed the VUE and the control group, particularly in subjective pain components like intensity or unpleasantness. Variables such as restorative experience, sense of presence, and virtual environment preference may also play a crucial role in pain perception and tolerance threshold

alterations under specific conditions, which, however, requires further exploration. This suggests significant potential applications of VNE in psychology and related fields, including supportive analgesic methods and post-psychotherapeutic relaxation. In the future, it is worth exploring the possibilities of integrating VR-based therapies with traditional treatment methods, particularly in the context of pain management and the potential of VNE to reduce the need for pain medication.

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# AN EXPLORATION OF ECO-ANXIETY AND ENVIRONMENTAL ENGAGEMENT IN MALTA USING A MIXED-METHODS RESEARCH DESIGN

Claire Bonello, & Mary-Anne Lauri

*Department of Psychology, University of Malta (Malta)*

## Abstract

The ongoing ecological crisis has stirred profound emotional, cognitive, and behavioural responses among individuals worldwide. One emotional response that has entered psychological research is eco-anxiety, which stems from concern over environmental events and the deteriorating state of our planet. Eco-anxiety can manifest in practical or debilitating forms, which can either lead to action or inaction, respectively, with the possibility of eco-anxiety becoming maladaptive. This study examined eco-anxiety, pro-environmental intentions and pro-environmental behaviours within the Maltese population, employing an explanatory sequential mixed methods research design, and adopting appraisal theory and the Campbell Paradigm of Attitudes as theoretical frameworks. The 13-item Hogg Eco-Anxiety Scale was utilised to identify eco-anxiety levels in 243 Maltese adults through an online questionnaire. Furthermore, we explored the relationships of eco-anxiety with pro-environmental intentions and behaviours, and climate change news exposure. Both pro-environmental intentions and behaviours exhibited positive correlations with eco-anxiety, although the latter relationship was less pronounced. Eco-anxiety positively and significantly correlated with climate change news exposure. Subsequently, we conducted four qualitative focus groups as part of the second phase, delving deeper into Maltese individuals' risk perception, efficacy beliefs, environment-related attitudes, and pro-environmental intentions and behaviours. Participants predominantly expressed negative emotions in response to ecological degradation. These negative emotions aligned with participants' perceived lack of environmental efficacy in addressing the crisis through personal and collective actions, despite their desire and intention to act in a pro-environmental manner. Participants discussed perceived costs and barriers to acting pro-environmentally, including inconvenience, cost and time, that frequently outweighed their positive attitudes towards such behaviour. In conclusion, our study highlights the importance of reframing the ecological crisis by promoting facilitators for pro-environmental behaviour, and encouraging active engagement, meaning-focused coping, and biospheric values. Such an approach would transform debilitating eco-anxiety into practical eco-anxiety, eco-hope, and eco-empathy. These findings have implications for both the fields of psychology and environmental conservation, offering insights into Maltese individuals' experiences with eco-anxiety, and promoting pro-environmental action.

**Keywords:** *Eco-anxiety, pro-environmental intentions, pro-environmental behaviours, environmental efficacy.*

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## 1. Introduction

Our world today is confronted with an array of urgent ecological challenges. These issues collectively give rise to what experts call the "triple planetary crisis" (United Nations, 2022). Such a crisis is rooted in three interconnected global predicaments, being: climate change, the loss of nature and biodiversity, and the pervasive issue of pollution and waste. Malta, a small island state with a dense population, is no exception when it comes to environmental challenges (Environment and Resources Authority, 2020). These issues are being caused and perpetuated by human, or anthropogenic, causes, mainly the widespread use of non-renewable fossil fuels, and extraction and abuse of natural resources (United Nations, 2022).

Meanwhile, such anthropogenic behaviours and their effects are posing imminent threats to Earth itself, and its human and non-human inhabitants. Indeed, nearly two-thirds of Maltese individuals acknowledge personal exposure to environmental and climate-related risks, highlighting a growing perception of climate change as a tangible personal threat (European Commission, 2023).

Besides physical threats, such as increased extreme weather and climate events, the ecological crisis also poses new psychological challenges, with eco-anxiety being a widely mentioned and studied phenomenon within the field of environmental psychology (Albrecht, 2011). Despite this, eco-anxiety has not yet been explored within a Maltese context. Therefore, this study aimed to bridge this research and theoretical gap by exploring eco-anxiety among Maltese adults within the frameworks of appraisal theories (Arnold, 1970; Scherer, 2001) and the Campbell Paradigm of Attitudes (Kaiser et al., 2010) using an explanatory sequential mixed methods research design.

### 1.1. Eco-anxiety and its link to environmental engagement

The appraisal of the ecological crisis as being caused by anthropogenic causes, paired with its uncertain outcomes, may lead to eco-anxiety (Albrecht, 2011). Eco-anxiety has been classified as a non-pathological, inherent and natural response to the ecological crisis, rather than a mental health disorder that requires treatment. However, Mathers-Jones and Todd (2023), although pointing towards the motivating effect of eco-anxiety on environmental engagement, propose the possibility of eco-anxiety becoming maladaptive. As an illustration, Hickman et al. (2021) found that nearly half of young individuals thought that their emotions regarding the ecological situation were having and would have an impact on their level of functioning, pointing towards eco-anxiety's potential of becoming severe in its effects (Kurth & Pihkala, 2022).

Kurth and Pihkala (2022) distinguish between practical and paralysing eco-anxiety, that lead to what Andrews and Hoggett (2019) called ecologically adaptive or maladaptive responses, respectively (Andrews & Hoggett, 2019). Practical eco-anxiety is characterised by self-reflection and concern, alongside eventual pro-environmental behaviours (PEBs), such as information-seeking, regulating emotions and connecting with nature (Andrews & Hoggett, 2019). Meanwhile, fear and grief encompass paralysing eco-anxiety, that leads to defensive and withdrawal responses that characterise ecologically maladaptive responses. Indeed, several studies have exposed a positive correlation between eco-anxiety and PEB, suggesting a practical form of eco-anxiety (Mathers-Jones & Todd, 2023; Verplanken et al., 2020). Conversely, Stanley et al. (2021) found that eco-anxiety had no effect on personal environmental engagement, and a negative effect on environmental collective action. These conflicting findings point towards the necessity to explore the effects of eco-anxiety on environmental engagement further. Indeed, this study sought to test the correlation of eco-anxiety with PEB.

Efficacy beliefs have been studied in relation to eco-anxiety and environmental engagement, being termed 'environmental efficacy' (Huang, 2016). Indeed, lack of efficacy in the face of ecological threats have been found to stimulate eco-anxiety (The Lancet Child and Adolescent Health, 2021). On the other hand, appraising one's capabilities to engage in PEB, even when the ecological crisis is appraised as a threat, has been found to produce pro-environmental action, with high environmental self-efficacy also acting as a buffer for eco-anxiety's paralysing form (Mead et al., 2012). Building upon these findings, Innocenti et al. (2023), Maran and Begotti (2021) and Shao and Yu (2023) found that media and information on the ecological crisis was positively associated with both eco-anxiety, and individual and collective self-efficacy, pointing to the role of media in instigating practical eco-anxiety and subsequent environmental engagement.

### 1.2. Theoretical framework

This study was framed within Magda Arnold's four-step Appraisal Theory of Emotion (Arnold, 1960, 1970), Scherer's Sequential Check Theory of Emotion (Scherer, 2001) and the Campbell Paradigm of Attitudes (Kaiser et al., 2010). Arnold (1970) proposed a four-step sequential process of responses triggered by exposure to a situation, which in the case of this study, is the ecological crisis. This process unfolds in the following sequence: 1) Situation, 2) Appraisal, 3) Emotion, and 4) Action. Meanwhile, Scherer (2001) breaks Arnold's 'appraisal' step into four dimensions, being the appraisal of a situation's relevance, implications, normative significance and one's coping potential. The outcomes of the appraisal of the ecological crisis influences the resulting emotion and action taken, which can be both ecologically adaptive and maladaptive in nature.

The last step of Arnold's Appraisal Theory of Emotion, being 'Action', can be framed within the Campbell Paradigm of Attitudes that distinguishes between pro-environmental intentions (PEIs) and pro-environmental behaviours. (Kaiser et al., 2010). This paradigm contends that whether one's PEIs translate into behaviour depends on their attitudes towards the ecological crisis, their mitigating actions, and the appraised costs of behaving pro-environmentally (Kaiser et al., 2010). Therefore, having PEIs does not necessitate PEBs. As an example, the Special Eurobarometer survey found that the majority of Maltese respondents are willing to adopt lifestyle changes for environmental improvement, suggesting the presence of pro-environmental intentions (PEIs) that are supported by positive attitudes (European Commission, 2023; Kaiser et al., 2010). Conversely, considering one's carbon footprint when planning vacations was the

least performed PEB in Malta, suggesting perceived difficulty of and a lack of positive attitudes towards this PEB and its environmental effects (European Commission, 2023; Kaiser et al., 2010).

Considering the above, this research aimed to explore eco-anxiety and its link to environmental engagement, being operationalised as pro-environmental intentions and behavior, within the Maltese context through the collection and analysis of both quantitative and qualitative data within an explanatory sequential mixed methods research design.

## 2. Design

Coffey et al. (2021) highlighted the need for research using mixed methods to study eco-anxiety. Hence, this study employed an explanatory sequential mixed methods research design (Creswell & Clark, 2010). Specifically, quantitative and qualitative results were synthesised to enable an exploration of eco-anxiety and environmental engagement within the Maltese context.

## 3. Objectives

The objectives of this study, enabled through its mixed methods design, were: 1) to identify the correlation of eco-anxiety with pro-environmental intentions and behaviours in a Maltese sample, 2) to gather Maltese adult's appraisals of and attitudes regarding the ecological crisis and experiences with eco-anxiety, together with the pro-environmental intentions they have and behaviours they perform, and 3) to gather Maltese adult's perspectives on the barriers to environmental engagement they encounter.

## 4. Methods

This study employed an explanatory sequential mixed methods design (Creswell & Clark, 2010), with participants of both the quantitative and qualitative phase comprising of Maltese adults aged 18 years and above recruited via convenience and snowball sampling methods.

### 4.1. Quantitative phase

The first, quantitative phase involved the administration of a questionnaire to 243 Maltese adults to gauge eco-anxiety utilising the Hogg Eco-Anxiety Scale (Hogg et al., 2021). This scale was chosen due to its ease of administration, brevity, and established validation across diverse populations (Hogg et al., 2021; Uzun et al., 2022).

Environmental engagement was assessed through two variables: PEIs, measured via the Willingness to Mitigate questionnaire (Evans et al., 2014), and PEBs, assessed using the Ecological Behaviour Scale (Casey & Scott, 2006). Additionally, a self-constructed item gauging exposure to climate change news was included.

### 4.2. Qualitative phase

Four qualitative focus groups were conducted, with two groups comprising Maltese participants aged 18-45 and the remaining two groups consisting of individuals aged over 45. Group composition was purposively determined to allow for potential age-related differences to surface.

The focus group guide was shaped by the theoretical framework, and informed by quantitative data results. Qualitative findings were analysed utilising abductive thematic analysis, enabling themes to be both guided by the theoretical framework and open to emerging insights (Thompson, 2022)

### 4.3. Ethics and verification strategies

Ethical clearance was obtained from the University of Malta Faculty Research Ethics Committee, and informed consent was secured from all participants.

Validity, reliability and trustworthiness were ensured through the utilisation of standardised scales aligned with research objectives, reflexivity, audit trails, and triangulation of data, theory, and methodology (Creswell & Clark, 2010).

## 5. Results and discussion

Eco-anxiety scores, measured through Likert scales between 1 (rarely/not at all) and 4 (almost always), were relatively low among the quantitative sample ( $M=1.56$ ,  $SD=0.52$ ). Nonetheless, focus group participants expressed predominantly negative emotions in response to the ecological crisis, stemming from uncertainty, urgency, lack of environment efficacy beliefs, negativity of the media, and the need for change paired with a lack of or uncertainty about proposed solutions. Such appraisals, together with other factors,

such as convenience, comfort, efficiency, money and time, were proposed as barriers to behaving pro-environmentally despite having PEIs. Indeed, the quantitative phase exposed a moderately significant positive correlation between eco-anxiety and PEIs ( $r(238) = .413, p < .001$ ), coinciding with findings of Gao et al. (2019). Meanwhile, a very weak positive correlation between eco-anxiety and PEB was found ( $r(236) = .190, p = .003$ ), contrasting to the stronger correlation found by Verplanken et al. (2020). However, the construct which Verplanken et al.'s (2020) studied slightly differs in their conceptualisation compared to eco-anxiety, given that global warming is just one environmental issue encompassing the ecological crisis that eco-anxiety refers to, and the use of different scales.

The weaker relationships of eco-anxiety with PEB may suggest a paralysing form of eco-anxiety that trumps environmental engagement, as proposed by Kurth & Pihkala (2022). More so, Mathers-Jones & Todd (2023) found that attention to climate change impacts predicts less PEB. This brings forth a potential moderating factor that may have indirectly influenced the weak relationship between eco-anxiety and PEB, also prompting the need for further exploration to identify the influence of attention to climate change impacts on paralysing eco-anxiety.

Paralysing eco-anxiety may stem from low environmental efficacy, with the latter factor moderating the effect between risk perception and ecologically adaptive behaviour performance (Innocenti et al., 2023; Mead et al., 2012). The impact of low environmental efficacy on PEIs was evident when one focus group participant who appraised the urgency of the ecological crisis expressed their intention to adopt a vegetarian diet, only to later abandon the idea due to low self-efficacy and the belief that this individual action would have little impact. The appraisal of PEBs as ineffective was considered another barrier to environmental engagement. Such barriers can both reduce the likelihood of environmental engagement and contribute to the continuation of maladaptive responses that harm the environment, while possibly contributing to eco-anxiety's anxiety-oriented response and resulting defence mechanisms that further fuel paralysing eco-anxiety (Andrews & Hoggett, 2019; Kurth & Pihkala, 2022).

Additionally, an increase in eco-anxiety levels significantly and positively correlated with increased climate change news exposure through news coverage mainly on social media ( $H(4) = 43.466, p < .001$ ). This finding coincides with those of Innocenti et al., (2023), Shao and Yu (2023), and Maran and Begotti (2021). However, focus group participants raised concerns about the media's negativity and lack of reporting of 'good' news. Interestingly, this tendency was identified as a factor reinforcing participants' belief in the futility of individual actions, leading to feelings of hopelessness and eco-anxiety, and acting as a barrier to environmental engagement. Therefore, these qualitative accounts contradict the positive and significant association found between information exposure, eco-anxiety and PEB (Shao and Yu, 2023; Maran and Begotti, 2021).

In the case of participants proclaimed pro-environmental intentions and behaviours, focus group participants professed their desire to use public transportation, but their actual use of their private car given the high costs of more environmentally-friendly transport means (Kaiser et al., 2010). However, quantitative participants reported being more likely to carpool, walk, cycle or use public transportation, than avoiding eating meat or cutting down on flying, suggesting the relative easiness of more environmentally-friendly means of transportation when compared to changing one's diet and travel plans. Similarly, the Special Eurobarometer Survey found that considering one's carbon footprint of one's transport when planning a holiday was the least performed PEB in both the Maltese and general EU sample (European Commission, 2023). On the other hand, the vast majority of respondents in the Environmental Attitude Survey stated that they were willing to change their lifestyle in order to help improve the environment (Environment and Resources Authority, 2020), pointing towards the need for a more nuanced understanding of the changes Maltese individuals are willing to make, perceived barriers to and costs of making such changes, and ways of facilitating environmental engagement and making it less costly.

## 6. Conclusion

The aim of this study was to explore the link between eco-anxiety and environmental engagement in a Maltese sample using a mixed methods research design, exposing a positive and significant correlation of eco-anxiety with PEI, PEB and climate change news exposure. The media was perceived as a barrier to environmental engagement. These findings both coincide (e.g., Verplanken et al., 2020) and contradict (e.g., Shao & Yu, 2023) existing literature.

Despite valuable insights, the study's limitations, such as the use of a convenience sample, limit the generalisability of results to the broader Maltese population. Nevertheless, this research adds to the understanding of eco-anxiety and environmental engagement and sets the stage for future investigations in Malta. By identifying facilitators of environmental engagement and promoting optimistic narratives in the media, transformative eco-anxiety can inspire hopeful action and meaningful participation in addressing environmental crises and fostering restoration efforts.

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## **CO-LIVING AS A CHOICE FOR INDEPENDENT RETIRED WOMEN: HOPE FOR SOCIAL TRANSFORMATION**

**Marie J. Myers**

*Faculty of Education, Queen's University (Canada)*

### **Abstract**

In this paper we present the results of a study of a successful co-living project for independent retired women. As our societies are increasingly concerned with sustainable living, we see that aging populations are often overlooked. Yet there is going to be an increase on these populations. During COVID in the Canadian context, some grave concerns were raised around retirement homes. For instance, by not allowing visitors the aging, already feeling lonely, were further cut-off from needed family social contact. Living close together in their common space increased major health issues with higher percentages of death. There were also increasing numbers of fires with significant numbers of deaths. Moreover, retirement homes are costly. With increasing financial constraints in many countries, older people feel financial burdens and there is a need to reconsider the conditions in which older people are finding themselves. Spontaneous groupings and living together experiments have generally failed. Even friends living in a house together usually experience issues after a few years. We investigated the successful Babayaga House co-living model in Paris that has been successful for over 12 years to uncover characteristics that are favorable for such projects to continue to thrive. Through the analysis of journals and other documents found in the public domain we uncovered desirable attitudes and qualities to help identify social factors that can lead to such a sustainable governance model. The method used was qualitative. To understand the complexity of the underpinnings of the system we recruited volunteers to make regular journal entries over six months. We also carried out a literature search to identify recognized questionnaire models that could be useful to map out the criteria for our study. The journal entries and additional documentation from the public domain were analyzed for emergent themes. Then these were paired with relevant entries from the existing well-being questionnaires identified in the literature search. We discuss our findings and present an articulation of the main concepts behind the successful functioning of the French model, also taking into account some of the major issues identified. Among major themes uncovered were autonomy, collaboration, accountability, the need for a number of positive traits like positive emotions, positive relationships and positive thinking with a total of 33 themes.

*Keywords: Identifying characteristics, senior autonomous living in co-housing, wellness.*

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## **1. Background**

### **1.1. Co-living**

Co-living as a formula for a more sustainable way of life is garnering increasing interest. Many projects of a more cooperative nature have been reviewed in the document entitled Europe ICE-11 describing many successful formulas that show a renewed interest in co-housing and commitment by a number of actors including architects. This included creating more user-friendly spaces. Many of these European projects are inter-generational, and in some cases the young people leave the co-housing arrangement. Of almost 500 projects been investigated, very few are dedicated to aging populations, only two of them were expended upon, one being the Babayagas House in Paris which was highlighted and received much praise. The idea of each having their own separate small apartment yet working together as a collective supporting one another as in the Babyagas House has much appeal. These retired independent women see to their own governance. There is a long waiting list for an apartment in this co-living building. Altogether there are 25 rental units but only 22 for the women. There are three different types of these units, different orientations, and some larger than the others, yet all rather small. For equity reasons the government had also allowed a young family, a handicapped person and two young men to also rent in the building. Each apartment consists of an open concept kitchen living room, a bathroom with accessible shower, a bedroom and each has a balcony. They pay rent, not based on apartment size but rather on their

income. It is based on the known formula for French HLM (Habitat à Loyer Modéré, i.e., Moderate Rent Housing), although in HLM buildings all apartments are identical. They also do not get a bigger apartment if they pay more rent, it is based on whatever is available when their turn comes up to move in. They can decline but then have to wait longer. They can also put their name on the waiting list for a larger apartment. In the building there are also some common spaces. The women bought a washer and dryer together to have a laundry room on the first floor. There are two larger meeting rooms overseen by the city of Montreuil. One of these is for the exclusive use of the women, where they hold monthly dinners, conferences, view films, organize workshops, dances etc. The other one is kept by the city but can also be rented out to the women if they ask. There are two garden spaces with in addition a small green space in front of the building where they can plant what they wish.

## **1.2. Aging**

Aging populations are faced with increasing challenges. The idea is to live well and be serene throughout retirement. As our societies are increasingly concerned with sustainable living, we see that aging populations are often overlooked. Yet there is going to be an increase of these populations. Groups of seniors in North America, Korea and China are also getting together in order to create co-living spaces. Few have been lasting or included people with more moderate incomes. In Canada new attempts are being made but financial constraints add to the burden. In addition, retirement homes are costly, usually over \$3,000 per month and often do not meet the needs of more independent people. With the additional issues during the flu season, especially recently, seniors find themselves even more isolated and vulnerable.

During the pandemic in the Canadian context, some grave concerns were raised around retirement homes. For instance, by not allowing visitors to the aging, who already feel lonely, they were further cut-off from needed family and social contacts. Living close together in their common space increased major health issues with higher percentages of death. There were also increasing numbers of fires with additional deaths due to the fact that the seniors had to be rescued from individual rooms during the quarantine. Living alone in aging has also become fraught with issues. However, studies have shown that people living together while also keeping independent enjoy longer healthier lives. Hence it is worthwhile investigating co-living possibilities, looking at human behavior as impacted by organizational aspects as well as human factors. Thérèse Clerc, Babayagas Founder said in a radio interview, "Old age isn't about being shipwrecked. It isn't an illness. It can be beautiful, and I plan to live it that way, with my friends and colleagues here".

## **2. The research**

### **2.1. The method**

This study aims at providing a questionnaire to ensure more reliable characteristics for people to be able to live together in the long term in Canada. The Babayagas House in Paris has received many accolades and was identified as a good source for our research. To carry this out, we first investigated retired independent women living in this government subsidized rental co-living building in Paris, in order to establish desirable criteria to adopt or adapt the formula in Canada. At present there are no such arrangements that have lasted, despite some examples of friends living together. Co-living as a choice for independent retired women. The model arrived at in Paris gives hope for social transformations.

The method used is qualitative in nature (Creswell, 2002; Creswell & Poth, 2018; Lincoln & Guba, 1985; Patton, 2015). The first step was to have members of a successful co-living model make regular journal entries so as to identify desirable traits and attitudes through their ways of being and doing. We collected five journals with almost daily entries over several months. Other documents were also analyzed to provide for triangulation, there were interviews by journalists as well as other magazine and newspaper articles and including the list of responsibilities from the House Charter each member was expected to sign and abide by. First, through the analysis of personal journals, we aimed at uncovering characteristics for the creation of a survey to identify seniors who would best qualify for co-living arrangements.

The participants who carried out almost daily journal entries were tenants in the Babayagas House in Montreuil, a suburb of Paris, as described above. The average age of these women living independently is 75 years. All the apartments are totally accessible.

### **2.2. Data analysis**

All the data were carefully analyzed. The journals were analyzed along with data found in the public domain on the group as mentioned just above. Identified categories were grouped into themes. In parallel, we researched known well-being questionnaires to tease out corresponding questions to the categories we had uncovered and grouped into themes. This enabled to avoid field testing the questions and in addition we already were ensured that these questionnaire items had worked in widely used

well-established questionnaires. Any repetition was eliminated, and as well, themes were regrouped in order to reduce the number of questions. We reduced the questions to the lowest possible number while still staying true to our objective.

We gleaned some general information that could facilitate the situational context such as presented below. With each identified theme we associated a question or a series of questions in order to uncover characteristics that were deemed desirable in the selection of future participative co-housing partners. These items appeared to be of great relevance in the hope of circumventing half-truths as identified from among co-housing dwellers.

### 2.3. Questionnaire items

From the findings, the items referring to qualities, coded as identified in journal entries, then placed in categories before grouping them into themes, were matched to relevant questions in existing well-being questionnaires.

We further developed questions related more specifically to general items gleaned from the Babayagas House Charter and information available in the public domain, as for instance, resulting from interviews. There were entries in the journals of conversations about general items as well. The difference between these items and the qualities uncovered as mentioned above is the fact that they are not necessarily connected to well-being and therefore simple questions we created would deem to be acceptable without further research.

## 3. Findings

The themes were explored and discussed in light of our findings and their relevance, and overall yielded a wide array of possibilities for items for the planned inventory questionnaire. The qualities identified after analysing the participants' journals are the following: 1. Honesty, 2. Collaboration, 3. Genuineness, 4. Supportive 5. Balanced life, 6. Being responsible, 7. Positive thinking, 8. Politeness, 9. Willing to engage, 10. Nonjudgmental, 11. Inquisitive, 12. Sharing knowledge, 13. Advise others in life situations, 14. Openness, 15. Taking charge of own life, 16. Consistently engaged with the outside/local community, 17. Willing to run/organize workshops and activities, 18. Explore/learn new things/engaged mind, 19. Activism/agreeing to volunteer, 20. Stick to initial commitment/enduring, 21. Feminism, 22. No pettiness, 23. Fair/generous/not selfish, 24. Willingness to share for the common good, 25. Interest oriented towards rich intellectual pursuits, not gossiping, 26. Looking to bring something positive to the community, 27. Evenness/steadiness/keep up interest in the community. From the above, the items referring to qualities, were coded as identified in journal entries, then placed in categories before grouping them into themes, and matched to relevant questions in existing well-being questionnaires. As a result, the tentative inventory includes 24 items with 167 questions. These items include accountability, autonomy, collaboration, emotional intelligence, engagement, fairness, feminism, forgiveness, good listener, gratitude, honesty, kindness, love of learning, modesty, openness, persistence, pragmatic politeness, positive emotions, positive relationships, positive thinking, satisfaction, self-acceptance, sense of humour and sociability. We also included questions of a more practical nature. Although the immediate objective for these is not compatibility for co-housing, it was deemed important to also glean information on the set-up of the actual building if such a concept with its own building were to be subsidized in Canada. First, we were interested in knowing what could be regarded as the ideal number of people to share co-living. Considering that there are 25 units in the Babayagas House, it seemed important to know if that would be a reasonable number. One person thought that 11 people sharing would be best, clearly concerned about people getting along and having a number of affinities. Another co-living member suggested "more than 12 but fewer than 22", which seems to refer in particular to that person's experience. It is interesting to note that 11 and 12 are close numbers. However, this person suggested a building with fewer than 22 units, which could also mean that this co-living member is obviously not happy about the additional dwellers in the building who are not part of the Babayagas group and not sharing responsibilities. Thus, this person was pointing to 25 units, the present number of apartments at the Babayagas House, as perhaps not desirable.

In addition, some questionnaire items were mostly based on the House Charter and having to do with more practical questions, as these too, seemed to constitute bones of contention, as for instance, tending to the garden, helping organizing activities and attending organized events etc. In the context of the House Charter which includes a commitment to activism, to sustainability and so on, it appeared that levels of accepted responsibilities were unequal and a concern was expressed as regards verifying that each and every person had indeed signed the Charter so that a commitment to it could be reinforced. First, there appeared to be conflicts due to very diverging backgrounds. The criteria for joining the Babayagas House were low income in aging due to a variety of factors at the present time, with no bearing on previous



socio-economic status nor background and the commitment of being supportive to the others. Hence, we thought that getting a general background idea might be useful, especially because a lack of commitment to the community was identified in a number of cases. In general, there was a lot of openness and tolerance, however according to the living arrangements for the Babayaga women specifically, there was an issue about men not being able to move in, only visit for short stays. The same applies to relatives. All in all, the Babayagas women can live autonomous lives and, as well, are supported by the co-living members around them. They were especially thankful for the many deep friendships they were able to acquire in their co-living community.

#### 4. Discussion

The idea was to identify characteristics to permit harmonious co-living arrangements for retired independent women to alleviate the impact of the dire circumstances in which some find themselves, and this by using a selection questionnaire also keeping in mind the impact of the pandemic on the women and we managed to arrive at a very interesting list. The context in the co-housing is participative co-living in aging. In most cases communication played out according to Luhmann's (1995) thinking that negotiations oscillate between agreement and opposition. The process moves on with constant changes between asymmetry and remaking symmetrical (p.125). Luhmann's theory about systems complexity points to unavoidable reciprocal adaptation of organisms to each other, and makes our questions for co-living all the more relevant. This appears to be so in the case of the groups of women coming together and they have indeed gelled into cohesive groups as I observed when invited to an outdoor dinner with approximately 15 people present. There are however some members who do not partake and hence lack the contact in a participative way in the co-housing model. Overall, the co-housing collective can be likened to a community of practice (Lave & Wenger, 1991; Wenger, 1998). It was also uncovered that there were true friendships and people helping one another in a very supportive way, sharing information, knowledge and prepared food. The backgrounds of the women are very diverse because although they lived in France for a long time their cultures of origin are not necessarily French, so it was reasonable to request information on their attitude toward participation. It was noted that closer friends often shared similar cultural backgrounds, as it appears that cultural aspects allow for reflective co-orientation (Siegrist, 1970), although that was not necessarily always the case. Self-governance and autonomy are deemed to be desirable qualities and study results show that these women are independent, although some to the point of not mixing with the group as mentioned earlier and hence the questionnaire has to take these aspects into scrutiny. Luhmann also mentions the notion of attempts at aligning paths and it is clear that a number of the co-housing members put effort into doing so and find joy in the realization that they develop new friendships. However, these feelings are also somewhat mixed as for example the fact that some of the women do not contribute to the maintenance of the garden but enjoy reaping its fruit is frustrating these who put effort into gardening. Hence questioning their willingness to participate and their propensity for sharing seems relevant. To create more interest in gardening they managed to invite a group of students to teach them new techniques and more sustainable methods. Self-space management as an entry on the questionnaire seemed to be important as they all have their own space varying from very small studios to more spacious ones with only three models available. Each however has a balcony which also allows cultivation. Plants on balconies included mostly flowers according to our findings, so it seemed appropriate to question notions on space management. Regular meetings of the group enabled them to reach conclusions together and make the best decisions as regards group interests. These decisions were not always well received and having like-minded co-housing partners would alleviate some difficulties related to consensual decision making which is a feature in the House Charter. However, according to the finding there have not been any major controversies requiring outside mediation despite differences of opinion been identified. As far as the notions of co-operation, or competition are concerned, regarding the common spaces like in their garden, cooperation left much to be desired. As identified, it appeared that only a handful of people actually carried out the work while everyone liked to reap the benefits. Concerning exchanging knowledge and learning from one another, we have uncovered this to be one of the most successful aspects among co-housing members. It was identified how they helped each other with special phone features. They conducted workshops, encouraged critical reviews of films followed by discussions, providing a stimulating intellectual climate. They invited journalists and students to lunch. This was cited in the magazine *Elle* (2023), reporting also that the journalists visited them several times (Briquet-Moreno, 2023). On one of the days of my visit, a research group from Geneva came to interview them about their co-living arrangements in order to adapt it to a project in Switzerland. As well, a parallel women's group had sent a representative to investigate their day-to-day arrangements more specifically in order to adapt them to their group. To expand on the use of the questionnaire, it appears that adaptation to diverse populations would be welcomed, if not using the same questionnaire where also relevant. As for the use of the questionnaire

findings, perhaps it could also mean that different groups of people with similar types of affinities could also constitute a co-living group, not necessarily tending towards the positive end of selection of items but rather ranking similarly as regards the questionnaire items.

## 5. Conclusion

We were particularly interested in the communication among the co-housing members to uncover what features would work best in a similar co-housing unit and we have to acknowledge that because of the pandemic there are extenuating circumstances to be taken into account. These women are still trying to get back their pre-pandemic footing and it has not been easy. The data uncovered is very rich and we were able to match items from established well-being questionnaires to specific qualities uncovered in the participants' personal journals. An interesting feature uncovered through the news media is that the Municipality might have tried to create more diversity, by also renting an apartment to two single men, one to a disabled person as all apartments featured accessibility, as well as one to a young family with two children. Although this added some social balance, we also found out that it created fear among the women over a possible take-over of the women's house by infiltrating other groups to this house dedicated to the women. Finally, we have noted that all the interactions among the actively participating women were very positive. They often mentioned the close-knit friendships they developed on the co-housing unit. The following step was to submit the questionnaire for annotation in the Canadian context to allow for further refinement of the articulation of the specifics for a sustainable economy of means in co-living in the Canadian context. We noted that although stemming from a study of aging women, the questionnaire could also be used for any group of seniors thinking of making co-living arrangements and as well could probably also be used by intergenerational groups. Just to remind us of the important social impact of the Babayagas House model we see it fit to report Briquet-Moreno's (2023) quote of words a long-term resident exchanged with her best friend in the housing unit before their interview, "You didn't forget that we will be talking about our friendship in solitude in old age. Friendships that are forged through solidarity, sharing and loyalty...and beyond death".

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## A SOCIO-TECHNICAL SYSTEMS APPROACH FOR THE PREVENTION OF RETAINED FOREIGN OBJECTS (RFOs) IN HEALTHCARE

**Siobhán Corrigan, Alison Kay, Sam Cromie, & Katie O. Byrne**

*Centre for Innovative Human Systems, School of Psychology, Trinity College Dublin (Ireland)*

### Abstract

'Never events', like Retained Foreign Objects (RFOs) are typically rare but can lead to serious outcomes in healthcare. These can cause significant physical and psychological impact on the patient, financial cost to the state and personal cost and reputational damage to the medical practitioners who are often considered to be the 'second victim' of RFOs. While the rate and impact of RFO's is recognised there is little understanding of the human and organisational factors leading to RFO's or how to effectively manage them. The specific objectives of the research were as follows: (i) to analyse the problem and current practice in surgical and maternity settings; (ii) to develop hospital-specific RFO's interventions; (iii) pilot implementation and evaluation and (iv) consolidate an overall implementation roadmap for implementation of proposed interventions. A Socio-Technical Systems (STS) Approach (Corrigan et al., 2018; McDonald et al., 2021) was deployed as a key framework for data gathering and analysis. This model examined the socio-technical system from the current state of RFOs – the "As is" picture and how it could be in the future – the "To-be" picture. The overall research design involved a qualitative, multi-phase, multi-disciplinary approach actively involving core clinical and managerial staff at two pilot hospital sites. A range of methods were used including semi-structured interviews; focus groups and observations across two hospital sites. Several critical issues were identified, such as lack of alignment in goals related to preserving the accuracy of the count, different approaches to formally approving the count, and the impact on patient transfers between locations. There was also a lack of common reporting of count discrepancies and insufficient feedback when such discrepancies were reported. Furthermore, there was a lack of an open culture where staff felt comfortable speaking up, and challenges related to interacting with formidable personalities. The socio-technical approach was very effective in identifying the key facilitators and challenges to managing RFO's and this paper presents high level recommendations based on an STS approach.

**Keywords:** *Retained Foreign Objects, socio-technical systems, human factors, patient safety.*

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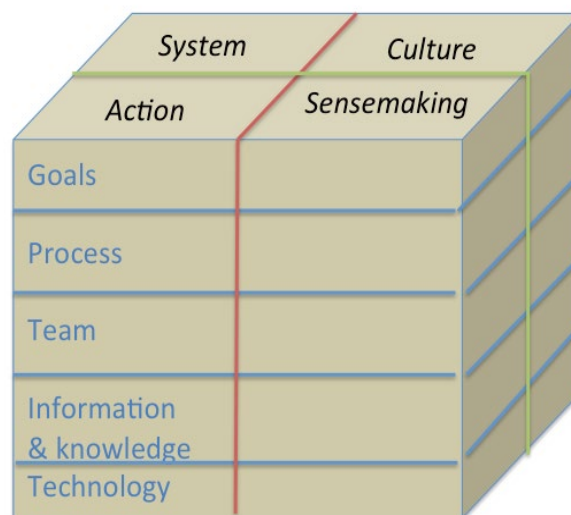
### 1. Introduction

A retained foreign object or RFO occurs when an item is unintentionally left behind inside the patient following any invasive procedure (Health Service Executive, 2015). Although RFOs are relatively uncommon (Chen et al., 2011), they come with significant costs to patient health, as well as to the reputation of healthcare professionals and institutions and potentially to the state through legal claims. Regarded as a preventable event, RFOs continue to be a pressing concern for patient safety (Mehtsun et al., 2012; Patial et al., 2018). The literature reports varying incidence rates ranging from 1 per 1000 procedures to 1 per 19,000 procedures (Fencl, 2016). These figures are often underestimated due to the under reporting (Lincourt et al., 2007), which may be due to hospitals reluctance to disclose such incidents, given their sensitive nature and concerns about reputational damage (Lincourt et al., 2007). Moreover, differences in reporting classifications further complicate the issue. For instance, in Ireland, RFOs are classified as Serious Reportable Events (SRE) necessitating mandatory reporting. However, this requirement applies solely to unintentionally RFOs involving an enclosed body cavity (HSE, 2015). In maternity services, incidents of RFOs in unenclosed body cavities (i.e., vagina) are considered adverse event but are not categorised as SRE's.

Counting of supplies and instruments is a routine task conducted by nurses, midwives and obstetricians to mitigate RFOs. Incorrect counts following surgical and delivery procedures can lead to stress, prolonged procedures, and confusion among operating and delivery room staff (Rowlands & Steeves, 2010). Due to the absence of a standardised national policy, counting practices aimed at preventing RFOs vary among healthcare institutions and lack consistency and uniformity. Despite being the primary method to prevent RFOs in patients, these counting practices have proven to be unreliable, particularly as the complexity of patient needs and healthcare have evolved (Stawicki et al., 2013).

The rising interest in the Socio-Technical Systems (STS) approach to understanding complex safety systems, particularly in healthcare, suggests a growing acknowledgement that numerous safety aspects are emergent properties of such systems (Carayon et al., 2015; Geary et al., 2022). An STS entails the 'synergetic interaction and integration of humans, processes, information and knowledge flows, technology, structures and the external environment in the workplace' (Corrigan et al 2018). Interactions play a pivotal role in the STS approach and recognising the broad STS and the respective interactions between the different levels contributes to a more comprehensive and integrated analysis of the current operational practice (Robertson et al., 2015) and prioritising what needs to be changed (Geary et al., 2022). The CUBE – A Socio-Technical Functional Model (Geary et al 2022; McDonald et al 2021; Corrigan, et al 2018) was utilised as the primary model for both data gathering and analysis in the project. This model (depicted in figure 1) examined the socio-technical system regarding the current state of RFO'S in Irish Healthcare – the “As is” picture and envisioned its potential future – the “To-be” picture. It examined the crucial interdependencies of goals, processes, team, information/knowledge, technology and culture.

Figure 1. The Cube – a model adapted from Corrigan et al 2018; Mc Donald, 2021.



## 2. Methods

The overall research design involved a qualitative, multi-phase, multi-disciplinary approach actively involving core operational and managerial staff at two pilot hospital sites. Two hospital sites were selected to ensure that the research covered both surgical and maternity services. Phase 1 of the research involved conducting semi-structured interviews and observations. A standardised approach was applied to the sampling strategy for the semi-structured interviews across both hospital sites. The target participant sampling focused on key operational, managerial and support staff both for maternity and surgical processes. In the surgical based hospital site eighteen interviews were conducted and sixteen interviews were conducted in the maternity based. Each of the interviews followed a validated interview schedule and lasted between thirty and sixty minutes. All interviews were recorded, fully transcribed and a thematic analysis was carried out.

Observations were conducted to provide greater insight into the current processes and preventative practices. Focus of the observations were placed on the physical setting, social cohesion, teamwork, communication pathways, information and knowledge flows, constraints, and facilitators in normal operational practice. Observations were completed (across multiple specialties) in the operating theatre at the surgical site by two observers (one with a clinical background and one with a background in human factors). Observations were conducted in the maternity setting across two areas (the operating

theatre and the delivery suite) with 1-2 observers present. Due to constraints of space in the delivery suite, consent was granted for 1 observer to be present. At least two observers would be required for inter-researcher reliability, however, the research team were not permitted more than one as the ethics board felt it to be too intrusive for the patient given the size of the delivery suite. The results take this into consideration.

Phase 2 involved validation of the findings from the previous phase and selection of the agreed interventions. Four validation workshops (two in each hospital site) were conducted, and Phase 3 involved the pilot implementation and evaluation of the proposed interventions in each hospital site. The focus of this paper is on phase 1 and phase 2 and does not report on the pilot implementation phase.

### **3. Findings**

The focus of this paper is on the analysis of the high-level recommendations categorised within the CUBE framework (McDonald et al., 2021; Corrigan et al., 2018). By systematically addressing these perspectives under the categories of goals, process, team, information & knowledge, technology and culture this provided a valuable insight into and understanding the challenges with RFO' in healthcare and provided a solid foundation for phase 3 of the research and the pilot implementation of key interventions.

#### **Goals**

- Emphasis the importance of raising awareness and fostering a sense of shared responsibility about RFO's among all members of surgical, midwifery and obstetrics teams and their supporting roles.
- Prioritise maintaining the integrity of the count to ensure its continued use as a key practice.

#### **Process**

- Develop procedures for the safe transfer and handover of patients between hospital locations.
- Incorporate 'Quiet' for the count, Time-Out and Surgical Safety Checklists (SSCs) into training at all levels of medical education.
- Implement a two-person sign-out for the formal confirmation of the count outcome, with corresponding updates to relevant documentation.

#### **Information and Knowledge**

- Ensure verbal communication and acknowledgement of the count outcome to enhance procedural adherence and mutual respect.
- Consider advocates for patient liaison with various representatives, recognising the importance reported by patients.
- Encourage reporting of count inconsistencies as routine practice to capture valuable information or near-misses.
- Integrate lessons from near-misses in healthcare and from other safety-critical industries into RFO training at all levels.

#### **Team**

- Provide multi-disciplinary team training at RFO prevention and management from postgraduate level onwards and through continuous professional development.

#### **Technology**

- Conduct further research on the potential of technologies (e.g., bar coding, RFID, AI) in preventing and detecting RFOs.
- Design databases within relevant hospitals and agencies to facilitate anonymised patient record reporting in line with GDPR guidelines.

#### **Culture**

- Advocate for respectful treatment of staff following RFO incidents, recognising the significance similar to never-events in healthcare.
- Foster an open and supportive culture that encourages healthcare staff to speak up and ensure psychological safety.
- Offer essential support for staff immediately after RFO incidents, throughout investigations, and in the long term to safeguard their well-being and performance.
- Ensure comprehensive support and communication within the team where the RFO has occurred, emphasising a just culture.

#### 4. Discussion

A consistent finding in articles on quality improvement in healthcare is that change is difficult to achieve (Gillespie & Marshall, 2015; Moffatt-Bruce et al., 2014). Much of the weakness in the research literature is due to a failure to develop the interventions systematically, using best available evidence and appropriate theory. While there are many examples of successful interventions, there are also numerous safety and quality improvement interventions that have failed to have an impact—particularly in terms of bringing about long-term behavioural change and improvements in patient safety. Through a systematic application of the STS approach focusing on goals, process, team, information & knowledge, and technology, an assessment of the current provided a basis for targeted change interventions to address the key risk factors and guide the key change interventions. Critical issues such as goal misalignment, varied approval processes, count discrepancies, insufficient feedback and challenges related to patients transfer were identified. Furthermore, a lack of an open culture was reported as staff didn't always feel comfortable speaking up, coupled with difficulties in dealing with staff with formidable personalities. To address the concerns identified, interventions were developed and implemented in the pilot phase of the research project. These interventions included the introduction of a requirements for two staff members to be present during baseline, final and count sign-off processes, the establishment of protocols for patient transfers and their relation to the count, the creation of a pathway for preventing RFOs, and providing training to address these issues. The pilot implementation phase was also guided by the STS CUBE which helped prioritise the most effective strategies both preventing and continually managing RFOs.

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## PSYCHOLOGICAL BURDEN IN ATOPIC DERMATITIS PATIENTS

Valentina Cafaro<sup>1</sup>, Massimo Giuliani<sup>1</sup>, Norma Cameli<sup>2</sup>, Alessandra Latini<sup>1</sup>,  
Eugenia Giuliani<sup>1</sup>, & Maria Mariano<sup>2</sup>

<sup>1</sup>STI/HIV Unit, San Gallicano Dermatological Institute IRCCS, Rome (Italy)

<sup>2</sup>Clinical Dermatology, San Gallicano Dermatological Institute IRCCS, Rome (Italy)

### Abstract

**Background:** Atopic dermatitis (AD) patients present a high prevalence of psychological distress. They experience discomfort due to visible erythema and intense pruritus affecting sleep, mood and relationship quality. Patients need both medical and psychological assistance to improve symptoms and stress coping. Psychodermatological approach implies the presence of both psychologist and dermatologist in the patient's care process.

**Objective:** Given the anxiety and depression prevalence in AD patients and their possible influence on treatment adherence, the present ongoing study investigates the relationship between different treatments (i.e., standard vs. biological drugs) and both dermatological and psychological outcomes.

**Methods:** AD patients attending at the San Gallicano Dermatological Institute in Rome, Italy, between November 2022 and December 2023, were enrolled. Primary outcomes included the Hospital Anxiety and Depression Scale (HADS, range: 0-42), and its dimensions, i.e. depression and anxiety (range: 0-21). Dermatological Life Quality Index (DLQI, range: 0-30), Peak Pruritus Numerical Rating Scale (NRS, range: 0-10) and Eczema Area and Severity Index (EASI, range: 0-72) were also measured.

**Results:** Of the 112 AD patients enrolled 62 were female (55.4%), mean age was 29.4 years, ( $SD=13.6$ ). Most were students ( $N=45$ ; 40.2%). The majority were receiving biological therapy ( $N=63$ ; 56.3%), followed by topical ( $N=33$ ; 29.5%), or standard systemic treatment ( $N=8$ ; 7.1%). Outcomes' mean scores were: HADS,  $M=11.5$  ( $SD=6.6$ ); anxiety,  $M=7.5$  ( $SD=4.1$ ); depression,  $M=3.4$  ( $SD=3.03$ ); DLQI,  $M=6.14$  ( $SD=6.3$ ); NRS,  $M=4.4$  ( $SD=3.2$ ); EASI,  $M=8.7$  ( $SD=11.1$ ). Over half of the participants ( $N=57$ , 50.9%) had an anxiety level above the cut-off. Biological therapy showed a positive effect on dermatological and psychological outcomes with a lower disease severity, lower mean level of anxiety, depression and pruritus compared to standard treatments. There were significant correlations between time on biological therapy, EASI ( $r=-0.38$   $p<0.05$ ), NRS ( $r=-0.42$ ,  $p<0.01$ ) and DLQI ( $r=-0.044$ ,  $p<0.01$ ). No correlation emerged between time on biological therapy and anxiety.

**Discussion:** Preliminary data show that clinically relevant anxiety level is high in AD patients. Although recent biological therapies seem to be effective in reducing dermatological symptoms and improving quality of life in this population, greater attention should be given to AD distressed patients. In the next study phase, participants with an anxiety and/or depression score above the HADS cut-off ( $\geq 8$ ) will be offered psychological support. The clinical impact of this intervention will be also evaluated.

**Keywords:** Atopic dermatitis, anxiety, depression, quality of life, psychodermatology.

### 1. Introduction

Atopic dermatitis patients are children, adolescents and adults who suffer from a chronic, relapsing, inflammatory skin disease characterized by visible, itching eczemas and several other comorbidities. These often include all the typical manifestation of the so called "atopic march" namely food allergy, allergic asthma and allergic rhinitis (Yang, Fu, & Zhou, 2020). Dermatological treatments for atopic patients include topical (emollients, corticosteroids, topical calcineurin inhibitors), systemic drugs (conventional immunosuppressants, biologics and small molecules) and phototherapy according to the severity of the disease and the impairment of patients' quality of life (Wollenberg et al., 2022).

Atopic dermatitis (AD) is the disease that causes the highest psychological burden compared to other dermatological conditions (Fasseeh et al., 2022); in fact, affected patients often suffer from anxiety, depression and sleep disturbance given the severe itch that often intensify at nighttime. The AD is characterized by periodic relapses distinguished by inflamed, dry, itchy skin that affect the emotional



resilience of patients and their psychological vulnerability. The uncontrollable urgency to scratch together with the presence of eczemas on the visible areas of body (i.e.; face, neck and hands) can also represent solid barriers to relationship, particularly among children and adolescents who might react with stigmatization and social isolation. Moreover, adults with atopic dermatitis are often those adolescents who have had the mentioned psychosocial difficulties and consequently might have developed low self-esteem, scarce relational skills and lower social productivity than dermatological healthy counterparts.

Focusing on environmental factors, psychosocial stressors can represent relevant correlates of exacerbation, worsening and relapses. Thus, AD exacerbation and psychological distress are often associated. Several studies focus on atopic dermatitis patients' distress manifestation reporting psychosocial comorbidities like depression, anxiety, sleep disorders, suicidal ideation (Kage, Simon, & Treudler, 2020; Kage, Zarnowski, Simon, & Treudler, 2020; Kwatra, Gruben, Fung, & Di Bonaventura, 2021). Other authors report the impaired psychosocial function of atopic dermatitis patients as a consequence of the dermatological manifestation of the disease (e.g., Tuckman, 2017; Iida et al., 2023). Distress and anxiety are associated with the release of neuromediators which have the function of regulating neurocutaneous inflammation, immune response and skin barrier functions (Suárez, Feramisco, John, & Steinhoff, 2012). Although the understanding of the link between genetic, environmental and psychological factors in AD is not yet known, it is crucial to provide a multidisciplinary approach to the patients in the care settings. Within this model of care, the present study is aimed to assess the psychological burden of the AD among consecutive outpatients attending the Unit for AD of the San Gallicano Dermatological Institute of Rome, Italy, and its relationships with different pharmacological treatments and prognosis.

## 2. Methods

This is an ongoing observational, longitudinal study enrolling atopic patients in different stages of the disease. The present paper reports preliminary findings collected during the enrollment phase of the study.

All AD patients attending at regular follow-up visits were proposed to participate in this study. No selection criteria were used beyond the diagnosis of atopic dermatitis and the ability to speak and read in Italian. Patients were recruited between November 2022 and December 2023. After informed consent to participate in the study was given, a psychologist administered the psychometric instruments to measure psychological outcomes within the dermatological visits. Demographic information and clinical data about ongoing pharmacological treatments and dermatological outcomes were also collected through both patients' reports and medical records.

### 2.1. Assessment of clinical outcomes

Current emotional vulnerability was screened using the Hospital Anxiety and Depression Scale (HADS) (Costantini et al., 1999; Zigmond & Snaith, 1983). The scale includes 14 items rated on a 4-point choice (0 to 4) and two subscales to assess anxiety and depression vulnerability, each one with a score ranging between 0 and 21. The clinical cut-off for the two subscales is 8 points, scores between 8 and 11 could identify patients at risk of developing the two mental disorders. A score above 11 in a subscale indicates a clinical presence of the specific disorder (Zigmond & Snaith, 1983). Quality of life was measured using the Dermatological Life Quality Index (DLQI) (Finlay & Khan, 1994; Mazzotti, Barbaranelli, Picardi, Abeni, & Pasquini, 2005) which includes 10 items rated on a 4-point scale (0 to 3). Total score ranges between 0 and 30. Scores between 6 and 10 indicate a moderate effect of the dermatological condition on the patients' quality of life, a score between 11 and 20 identifies patients whose dermatological condition has a very large effect on their quality of life. Finally, scores between 21 and 30 indicate an extremely large effect of the illness on the person's quality of life. Pruritus and disease severity were measured using the Peak Pruritus Numerical Rating Scale (NRS) and the Eczema Area and Severity Index (EASI), respectively. The Peak Pruritus Numerical Rating Scale (NRS) (Yosipovitch et al., 2019), is a single-item patient reported outcome (PRO) that measures the most severe level of itch perceived by the patient during the previous 24 hours. The Eczema Area and Severity Index (EASI) was routinely used in dermatological wards to assess extension and severity of the eczema, it ranges between 0 and 72 (Hanifin et al., 2001). Further information collected during clinical consultation or extracted from medical records included: age, occupation, atopic dermatitis family history, age of atopic dermatitis onset, type of current pharmacological therapy (biological drugs vs. topical/standard treatments), duration of therapy and visible or sensitive body's area affected (i.e.; face, neck, hands).

## 2.2. Statistical analysis

Demographic and clinical characteristics of the sample were summarized through descriptive statistics which include frequencies, means and proportions. After that, in order to compare patients undergoing biological drugs with patients on traditional therapies (topical or systemic) on every dermatological and psychological outcome assessed, independent samples *t*-tests were performed. Measures of association were calculated in order to explore the relationship between length of time patients were on biological therapy, clinical outcomes and PROs.

## 3. Results

From 1 November 2022 to 31 December 2023, 112 participants accepted to participate in the study. Just above the half of them were female ( $N=62$ , 55.4%), the mean age was 29.4 years ( $SD=13.6$ ) and most of them were students ( $N=45$ , 40.2%). The majority of patients had no AD family history ( $N=65$ , 58%) and a disease onset within the 12 years of age ( $N=81$ , 72.3%). A relevant part of the sample had eczemas on visible or sensitive areas of the body (i.e. face, neck or hands) ( $N=49$ , 43.8%) and 64 patients (57.1%) reported a pruritus NRS equal or above the score of 4. Most of them had a mild level of AD ( $N=35$ , 31.25%) or were clear from eczema ( $N=35$ , 31.25%), 24 patients (21.43%) had a moderate AD level and a minority had severe ( $N=18$ , 16.7%) or very severe ( $N=1$ , 0.89%) AD manifestation. Almost all patients were included in a treatment protocol at the time of enrollment. Most ( $N=63$ , 56.3%) were on therapy with biological drugs, 33 (29.5%) were using traditional topical therapy, 8 (7.1%), were under standard systemic treatment and 3 patients were not on therapy (first diagnosis). Therapy information about 5 patients (4.5%) could not be retrieved.

The HADS mean total score of the entire sample was 11.5 ( $SD=6.6$ ), the anxiety subscale mean score was 7.5 ( $SD=4.1$ ) and the depression subscale mean score was 3.4 ( $SD=3.03$ ). The DLQI mean score was 6.14 ( $SD=6.3$ ) and the NRS scored in average 4.4 ( $SD=3.2$ ). Mean score for the EASI was 8.7 ( $SD=11.1$ ). Just over half of the sample ( $N=57$ , 50.9%) reached a score above the cut-off of 8 at the HADS anxiety subscale, while a score above the cut-off for depression was reached by 15 patients (13.4%).

When comparing patients in biological therapy with patients in topical and standard systemic therapies together, a significant difference between groups was found in disease severity as measured by the EASI,  $t(99)=5.103$ ,  $p<0.001$ . Mean scores of the two groups show this difference (biological:  $M=4.52$ ,  $SD=6.12$ ; vs. topical/standard therapies:  $M=14.92$ ,  $SD=14.05$ ). Data from the PROs showed lower level of distress, anxiety and pruritus among patients on biological therapy than patients on topical/standard therapies. Data showed a significant difference in the anxiety subscale  $t(102)=3.12$ ,  $p=0.002$ ; mean scores of the two groups reveal the difference (biological:  $M=6.53$ ,  $SD=4.21$  vs. topical/standard therapies:  $M=9$ ,  $SD=3.52$ ). Finally, a significant difference emerged in pruritus,  $t(101)=4.56$ ,  $p<0.001$  with a NRS mean scores of 3.21 ( $SD=2.78$ ) and 5.88 ( $SD=3.07$ ) respectively for patients in biological and in topical/standard therapies. No significant differences between groups were found for depression. Moreover, a significant inverse correlation emerged between time on biological therapy and EASI score ( $r=-0.38$ ,  $p<0.05$ ), NRS score ( $r=-0.42$ ;  $p<0.05$ ) and with DLQI ( $r=-0.044$ ,  $p<0.01$ ), but not with level of anxiety measured by the HADS.

## 4. Discussion

Our study reports on the real-world experience of the atopic dermatitis Unit of the San Gallicano Dermatological Institute of Rome where both a dermatological and a psychological assessment were performed in order to shed light on the patients' level of burden according to the type of treatment undergone. Specifically, traditional systemic or topical treatments and more recent biological drugs.

Results show that most of patients are undergoing a biological therapy and that distress level is high in this population. In particular, anxiety level is generally high, also it is alarming for a great number of patients who overcome the clinical cut-off. Surprisingly depression do not appear to characterize this sample. Comparisons between biological therapy and standard systemic and topical treatments taken together, show that patients in the former group have less severe disease, lower overall distress and anxiety and less pruritus compared to the latter.

Notwithstanding the important impact that the biological drugs seems to have on both dermatological and psychological health, it is crucial to give psychological support to patients with a clinically relevant anxiety level. Indeed, psychological support for these patients is planned for the next face of the study and the impact of the intervention will be evaluated.

Although these results deriving from a single institute are not generalizable, they show the important impact that biological treatments could have on both dermatological and psychological outcomes. Moreover, this model of care with dermatologists and psychologists working together for AD patients'

assessment and management, could be a global approach able to detect and take care of the patients' global burden.

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## EXPERIENCES ACCESSING HEALTHCARE AMONG 2SLGBTQIA+ PEOPLE IN CANADA AND THE UNITED STATES

Patrick Hickey<sup>1</sup>, Lisa A. Best<sup>2</sup>, & David Speed<sup>2</sup>

<sup>1</sup>Psychology and Neuroscience, Dalhousie University (Canada)

<sup>2</sup>Psychology, University of New Brunswick Saint John (Canada)

### Abstract

Members of 2SLGBTQIA+ communities experience pervasive barriers to accessing healthcare services, including discrimination, care providers lacking knowledge or training, and limited specialized care compared to the general population (Comeau et al., 2023; Tami et al., 2022). An online questionnaire was administered to 534 participants across Canada and the United States to assess experiences of healthcare access between 2SLGBTQIA+ and non-2SLGBTQIA+ respondents. The final sample was composed of 296 2SLGBTQIA+ participants and 238 non-2SLGBTQIA+ respondents. A series of Chi-square tests and t-tests were used to identify differences across the two groups. 2SLGBTQIA+ participants reported worse overall access to health services, difficulties affording, and were more likely to have unmet health needs compared to non-2SLGBTQIA+ respondents. Further, 2SLGBTQIA+ individuals were significantly more likely to experience a delay in receiving care and a negative impact on access due to the distance to healthcare. Interestingly, 2SLGBTQIA+ individuals were more likely to report having a mental healthcare provider, while also reporting significantly greater difficulty affording such care compared to non-2SLGBTQIA+. Importantly, no significant differences were found between the two groups on access to a primary healthcare provider and wait-times for health services. Results demonstrate the disparities in access to healthcare experienced by 2SLGBTQIA+ individuals and identified key barriers including distance and affordability. The results of this study highlight the unique health service needs of 2SLGBTQIA+ individuals and can be used to address key barriers to accessing care for marginalized communities.

**Keywords:** *Healthcare, access, sexual minority, gender minority, 2SLGBTQIA+.*

### 1. Introduction

In both Canada and the United States, people face barriers to accessing healthcare, including not having a primary care provider, long wait-times for services, and difficulty affording components of care (Gunja et al., 2023; Statistics Canada, 2021). Results from a nationally representative survey found that more than a quarter of Canadians report difficulties accessing care when needed (Clarke, 2016; Statistics Canada, 2016a). Long wait times and difficulty getting appointments were the most reported obstacles to care (Clarke, 2016; Statistics Canada, 2016a). In the United States, the most significant barrier is being able to afford healthcare (Coombs et al., 2021).

In addition to common barriers to accessing healthcare, 2SLGBTQIA+ populations face unique and pervasive barriers, including discrimination, a lack of knowledge or training among care providers, and limited specialized services (Comeau et al., 2023; Tami et al., 2022). Discrimination and marginalization negatively impact the use of healthcare services for 2SLGBTQIA+ people (Bjorkman & Malterud, 2009). In the United States, 2SLGBTQIA+ people report being denied care, the use of harsh language, and blaming the cause of the illness or disease on their sexual orientation or gender identity by their health provider (Kates et al., 2018).

Nationally representative research in Canada has shown that despite heterosexual and lesbian, gay, and bisexual (LGB) individuals reporting the same number of visits with a family physician or specialist, LGB people were less likely to have a family physician (Statistics Canada, 2016a). Further, LGB individuals were more likely to report not receiving healthcare when they felt they needed it compared to heterosexual Canadians (Statistics Canada, 2016a). Some research has shown that LGB Canadians report similar overall access to healthcare compared to the general population but continue to

experience more unmet health needs and more frequent contact with a range of healthcare providers (Hickey et al., 2023).

Barriers to care appear worse when specifically examining the experiences of transgender and non-binary populations. Approximately 12 percent of transgender and non-binary Canadians in a national survey reported avoiding the emergency room when it was needed due to their identity (Trans PULSE Canada Team, 2020). In the United States, research identified fear and mistrust of providers, inconsistency in access to care, disrespect from providers, and mistreatment from intersecting identities as the most common barriers to healthcare for transgender and gender diverse populations (Johnson et al., 2019). Overall, many barriers exist to access healthcare in both Canada and the United States, however compounding barriers make access more challenging for 2SLGBTQIA+ people, especially transgender and gender diverse individuals.

Mental health services are an important component of overall healthcare. Over two-thirds of 2SLGBTQIA+ people report needing a mental health service, compared to only 39 percent of heterosexual and cisgender individuals (Dawson et al., 2023). Further, only half of 2SLGBTQIA+ individuals who reported needing mental health services were able to receive care (Dawson et al., 2023). Common barriers for 2SLGBTQIA+ people include knowledge of mental healthcare provider, long wait-times, and insurance coverage (Dawson et al., 2023; Moagi et al., 2021). In a Canadian nationally representative sample, individuals who identified as homosexual or bisexual were more likely to report having had a consultation with a psychologist during the past year compared to the general population (Statistics Canada, 2016a). Significant barriers prevent adequate access to health and mental health services for 2SLGBTQIA+ people, which needs to be further understood.

### **1.1. Current study**

The aim of this study was to examine differences in access to healthcare between 2SLGBTQIA+ and non-2SLGBTQIA+ individuals across Canada and the United States. The current study used data collected from an online questionnaire administered to members of the 2SLGBTQIA+ population and members of the general population in Canada and the United States.

## **2. Methods**

### **2.1. Participants**

The sample size consisted of 534 participants ( $Mean_{Age} = 26.70$  years,  $SD = 9.22$ ); 318 Canadians and 216 Americans participated. All participants were categorized as 2SLGBTQIA+ (non-heterosexual and/or non-cisgender;  $n = 296$ ) or non-2SLGBTQIA+ (straight and cisgender;  $n = 238$ ). The 2SLGBTQIA+ group was composed of 139 sexual minority (non-heterosexual and cisgender), 24 gender minority (heterosexual and non-cisgender), and 133 participants who identified as both non-heterosexual and non-cisgender participants.

### **2.2. Measures**

A series of questions were used to assess the level of access a respondent has to health care services, the issues creating barriers to receiving efficient care, and if they have unmet health care needs. Questions from the multiple versions of the Canadian Community Health Survey (CCHS), including the 2021, 2018, and 2016 versions, and from the European Patients Forum Survey (EPF, 2016; Statistics Canada, 2016b) were adapted for use in the current study. Questions include level of difficulty accessing care, whether or not the participant has a primary healthcare provider, what type of healthcare provider, the impact of wait times, financial limitations, cost of healthcare, significant delays in care, and unmet health needs. All measures of healthcare access were coded such that low scores represent worse access, and higher scores indicate better access to care or fewer barriers to care.

### **2.3. Procedure**

This project was reviewed by the University of New Brunswick Research Ethics Board. Participants were recruited from social media sites and private online groups. The sample included undergraduate students from the University of New Brunswick Saint John Department of Psychology Participant Pool. After providing informed consent, participants completed a demographic questionnaire, followed by a series of questions to measure barriers and access to health services.

### 3. Results

A series of t-tests were used to identify differences across the two groups on the measures of overall access to care, being able to afford healthcare, and wait-times for health services (see table 1). 2SLGBTQIA+ participants reported worse overall access to services and difficulties affording care. No significant differences were observed between the two groups on wait-times for health services.

Table 1. Differences in overall access, being able to afford care, and wait-times between 2SLGBTQIA+ and non-2SLGBTQIA+ participants.

| Variable       | Non-2SLGBTQIA+<br>M (SD) | 2SLGBTQIA+<br>M (SD) | t        | Effect Size (Cohen's d) |
|----------------|--------------------------|----------------------|----------|-------------------------|
| Overall Access | 3.34 (1.10)              | 2.90 (1.11)          | -4.51*** | .40                     |
| Afford Care    | 4.24 (0.95)              | 3.78 (1.04)          | -5.20*** | .46                     |
| Wait-Time      | 4.00 (1.54)              | 3.84 (1.59)          | -1.12    | .10                     |

A series of Chi-square tests found that 2SLGBTQIA+ participants were more likely to have unmet health needs ( $\chi^2(1, N = 479) = 42.96, p < .001$ ), experience a delay in receiving care ( $\chi^2(1, N = 497) = 10.05, p = .002$ ), and report a negative impact on access due to the distance to healthcare facilities ( $\chi^2(1, N = 523) = 30.81, p < .001$ ) compared to their heterosexual and cisgender counterparts (see table 2). Interestingly, 2SLGBTQIA+ individuals were more likely to report having a mental healthcare provider ( $\chi^2(1, N = 524) = 29.80, p < .001$ ), while also reporting significantly greater difficulty affording such care ( $\chi^2(1, N = 500) = 49.22, p < .001$ ) compared to non-2SLGBTQIA+. Importantly, no significant differences were found between the two groups on having access to a primary healthcare provider.

Table 2. Frequencies of responses on binary measures of healthcare access across 2SLGBTQIA+ and non-2SLGBTQIA+ groups.

| Variable                                 | Response | Non-2SLGBTQIA+   |       | 2SLGBTQIA+       |       |
|--|----------|------------------|-------|------------------|-------|
|  |          | n                | %     | n                | %     |
| Unmet Needs                              | Yes      | 92 <sub>a</sub>  | 43.40 | 194 <sub>b</sub> | 72.66 |
|  | No       | 120 <sub>a</sub> | 56.60 | 73 <sub>b</sub>  | 27.34 |
| Healthcare Provider                      | Yes      | 193 <sub>a</sub> | 82.48 | 218 <sub>a</sub> | 76.49 |
|  | No       | 41 <sub>a</sub>  | 17.52 | 67 <sub>a</sub>  | 23.51 |
| Delay                                    | Yes      | 95 <sub>a</sub>  | 42.79 | 157 <sub>b</sub> | 57.09 |
|  | No       | 127 <sub>a</sub> | 57.21 | 118 <sub>b</sub> | 42.91 |
| Distance                                 | Yes      | 43 <sub>a</sub>  | 18.45 | 119 <sub>b</sub> | 41.03 |
|  | No       | 190 <sub>a</sub> | 81.55 | 171 <sub>b</sub> | 58.97 |
| Mental Health Provider                   | Yes      | 65 <sub>a</sub>  | 27.66 | 148 <sub>b</sub> | 51.21 |
|  | No       | 170 <sub>a</sub> | 72.34 | 141 <sub>b</sub> | 48.79 |
| Difficulty Afford Mental Health Provider | Yes      | 68 <sub>a</sub>  | 30.91 | 175 <sub>b</sub> | 62.50 |
|  | No       | 152 <sub>a</sub> | 69.09 | 105 <sub>b</sub> | 37.50 |

Note. Means with different subscripts differ at a minimum of  $p = .05$  using Chi-square tests.

### 4. Discussion

2SLGBTQIA+ participants reported significantly worse overall access, greater difficulty affording healthcare, more unmet health needs, more delays in care, and distance impacting access to services compared to non-2SLGBTQIA+. Research on the overall access to care for LGB individuals appears mixed, some have shown that LGB individuals are more likely to not receive care when it was needed (Statistics Canada, 2016a) and others have found limited differences when comparing to the general population (Hickey, 2023). Mixed findings may be the result of a changing healthcare landscape or inconsistencies in the methodologies used to measure perceived healthcare access. It is important to note that in the current study, transgender and gender diverse participants were included unlike previous research, therefore their experiences may have provided a more accurate representation of the broader 2SLGBTQIA+ community. Further, greater unmet needs among the 2SLGBTQIA+ population are commonly reported in the literature and consistent with results from the current study (Fish et al., 2021; Hickey, 2023; Macapagal et al., 2016).

In the present study, 2SLGBTQIA+ respondents reported distance to care as a significant barrier more frequently than non-2SLGBTQIA+ participants. Previous research has shown that transgender people living in the United States have to travel further distances to access a care provider who had

knowledge and training in transgender health care (Kattari et al., 2020). More research is needed to better understand how distance to care facilities or specialized services for 2SLGBTQIA+ populations impact ability to receive care, especially for those living in rural or remote regions. 2SLGBTQIA+ participants also experienced financial difficulties associated with health care costs at significantly higher rates than non-2SLGBTQIA+ participants. Consistently, LGB individuals in the United States have been shown to be more likely to forego care due to the cost, even if they had health insurance, compared to the heterosexual population (Nguyen et al., 2018). Additionally, financial barriers to receiving care is associated with fewer visits to health providers, which results in increased negative health outcomes (Nguyen et al., 2018; Parikh et al., 2014). Affordability of healthcare is a significant barrier to accessing care, especially for the 2SLGBTQIA+ population, which may impact access to needed services and health outcomes.

Consistent with previous research (Hickey et al., 2023), 2SLGBTQIA+ and non-2SLGBTQIA+ participants reported almost equal access to a primary healthcare provider. Given that previous research often only included LGB individuals, the current results expanded previous findings to the broader 2SLGBTQIA+ population. Changes in reporting of having healthcare providers may be the result of improving healthcare systems for 2SLGBTQIA+ patients or changes in societal acceptance (Poushter & Kent, 2020). The current results also indicated that the wait-times associated with accessing care were similar for 2SLGBTQIA+ and non-2SLGBTQIA+ respondents. Despite non-significant differences between samples, wait-times for specialized care has been shown to be significant, especially during the pandemic (Ontario Medical Association, 2022). Research in the United States found that more than half of 2SLGBTQIA+ people have been denied care (Kates et al., 2018). Future research should analyze specific 2SLGBTQIA+ group differences to better understand wait-time for more specialized services, such as gender affirming care.

Interestingly, in the current study, 2SLGBTQIA+ respondents were significantly more likely to have a mental healthcare provider. These results may be indicative of either a greater need for mental health services or better access to mental healthcare relative to non-2SLGBTQIA+ individuals. Despite being more likely to have a mental healthcare provider, 2SLGBTQIA+ individuals reported more difficulty affording mental health services. Similarly, Dawson and colleagues (2021) reported that individuals who identified as 2SLGBTQIA+ reported higher rates of accessing mental healthcare but faced greater financial barriers to care. Further, compared to cisgender individuals, individuals who identify as a gender minority have been shown to be more likely to report that they would like help addressing a mental health concern (Rutherford et al., 2021). Therefore, it may be difficult to determine whether 2SLGBTQIA+ participants are more likely to have a mental health provider as a result of better access or because of a significantly increased demand among this population.

## 5. Conclusion

Results demonstrate the disparities in access to healthcare experienced by 2SLGBTQIA+ individuals in Canada and the United States and identified key barriers including distance and affordability. The results of this study highlight the unique health service needs of 2SLGBTQIA+ individuals and can be used to address key barriers to accessing care for marginalized communities.

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# AN INVESTIGATION OF THE PSYCHODYNAMIC CONCEPTUALISATION AND TREATMENT OF MORAL MASOCHISM IN SUBSTANCE USE DISORDER

**Kyle Muscat, & Greta Darmanin Kissaun**  
*Department of Psychology, University of Malta (Malta)*

## Abstract

The current study aimed at investigating the manner in which psychodynamic therapists conceptualise and treat moral masochism in patients suffering from substance use. Therapists' perceptions of the possible role moral masochism play in the cause and perpetuation of substance use and its implications for treatment were explored. Psychodynamic therapists' diverse ways of conceptualising moral masochism were compared and contrasted, and the manner in which they deal with the particular transference challenges faced when treating such patients was investigated. A qualitative methodology was adopted, in which five in-depth, semi-structured interviews with psychodynamic psychotherapists, whose work is informed by diverse psychodynamic theories and who have experience working with Substance Use Disorder, were conducted. Data was analysed by means of Reflexive Thematic Analysis (RTA), in accordance with the guidelines provided by Braun and Clarke (2006, 2016, 2021). The study yielded several key findings, including the existence of common factors linking moral masochism and substance use-related behaviours. Some of these common factors include dependency and feelings of inadequacy, the presence of aggression towards the self and others and the presence of a sense of disconnection and emptiness. Possible motives underlying the behaviours of patients suffering from moral masochism and engaging in substance use were also elicited as themes from the data, which shed light on how patients use such behaviours as coping strategies, defence mechanisms and as ways of achieving a temporary sense of control. Results also elucidate patients' need to expiate guilt, including religious guilt, which participants believed contributes to this behaviour. Essential considerations for therapists treating this patient group were also highlighted, including the relevance of recognising the self-sustaining cyclical nature of morally masochistic and substance use-related behaviours within patients. The key role of considering patients' full biopsychosocial context and how this may be feeding into their behaviours was also highlighted. Implications for treatment of this patient group included helping patients to develop ego strength and an internal locus of control, addressing guilt and helping patients relationally reconnect to themselves and others by encouraging personal growth and helping them to find meaning in their lives. The importance of reflexive practice in order to help navigate specific issues of transference and countertransference was also emphasised.

**Keywords:** *Substance Use Disorder, moral masochism, psychodynamic psychotherapists, reflexive thematic analysis.*

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## 1. Introduction

This study aims to investigate the way psychodynamic psychotherapists conceptualise and treat moral masochism in people suffering from Substance Use Disorder (SUD). It aims to shed light on psychodynamic psychotherapists' understanding of the phenomenon and the forms in which they encounter it in their patients who use substances. It also seeks to explore the manner in which they manage it. The study also endeavours to meet several objectives through this research question. One of these objectives is to compare and contrast the various perspectives of psychodynamic therapists, who subscribe to diverse schools of psychodynamic psychotherapy, on moral masochism. Another objective is the exploration of the particular transference/countertransference-related challenges encountered by psychotherapists within this particular kind of therapeutic relationship. The possible role moral masochism may play in the aetiology and perpetuation of SUD from the perspective of psychodynamic therapists and the implications this may have for treatment is also investigated.

The concept of moral masochism was first conceptualised by Sigmund Freud in his 1924 paper "The Economic Problem of Masochism", in which he described moral masochists as individuals who

experience extreme sensitivity of conscience and moral inhibition that they themselves are not conscious of. Gavin (2010) describes how moral masochists, in effect, become confused victims of both their external environment and their own repetitive behaviour that is causing them to self-sabotage and act against their own better interests. Within this particular study, this phenomenon will be explored when it comes to individuals suffering from Substance Use Disorder, which is defined by the Diagnostic and Statistical Manual of mental disorders (DSM 5-TR, 2022) as “a cluster of cognitive, behavioural and physiological symptoms indicating that an individual continues using a particular substance despite significant substance-related problems” (p. 483). This concept of moral masochism is relevant to study in the context of SUD due to the fact that existing literature has often implicitly linked moral masochism to excessive substance use without the nexus being studied in great detail. For instance, Gavin (2010) discussed the appearance of early relational trauma in the aetiology of both conditions, while Rizzolo (2017) mentioned how people suffering from moral masochism may engage in addictive behaviour due to disavowed narcissistic needs. The goal of studying moral masochism within the context of SUD is to help uncover a deeper meaning and further clarify dynamics behind these individuals’ substance use problems and the relationship that they have with themselves, as observed by the professionals that help them. By attempting to add a layer of depth to professionals’ understanding of the patient-therapist relationship with these particular patients, this study aims to help therapists treat these patients in a more holistic way, leading to more profound and longer-lasting positive change.

## 2. Method

A qualitative research design was deemed the most suitable option for this study due to its focus on eliciting the experience, meaning and perspectives of participants (Hammarberg et al., 2016). Five psychotherapists or psychologists with a background in psychodynamic theory and who have worked with patients who suffer from SUD were recruited for this study via convenience sampling. The rationale behind choosing to investigate this particular research topic from a psychodynamic perspective is due to the fact that moral masochism is a term that was initially coined by the psychoanalytic school of thought, which tends to engage in a more in-depth analysis of the phenomenon. The chosen participants included therapists specialised in different psychodynamic schools, including the object relations and Jungian/depth psychology schools, with two of the participants preferring to take an integrative approach towards therapeutic practice. Each participant took part in an in-depth semi-structured interview which lasted between 60-90 minutes. The method of data analysis chosen for this study was Reflexive Thematic analysis (RTA) as proposed by Braun and Clarke (2006, 2016, 2021). RTA can be defined as a method of analysis and interpretation of patterns across a qualitative dataset through engagement in the process of data coding for the purpose of developing themes (Braun & Clarke, 2021). Following data analysis, the authors elicited six main themes from the data, each theme containing within it its own unique set of sub-themes. These themes and sub-themes are presented in the table hereunder and will be discussed in more detail in the following section of this paper.

## 3. Findings and discussion

*Table 1. Table showing the themes and subthemes elicited from the data.*

| Themes                    | Subthemes   |
|---------------------------|---|
| The ego and the self      | Dependency  |
|                           | Splitting   |
|                           | An inadequate self                                  |
| Aggression in and out     | Rejection of love                                   |
|                           | Punishment towards self and other                   |
|                           | Envy  |
| A sense of disconnection  | Dissociation  |
|                           | Existential emptiness                               |
| Underlying motives        | Coping strategy                                     |
|                           | Mechanism of defence                                |
|                           | The quest for control                               |
|                           | Guilt and reparation                                |
|                           | The shadow self                                     |
|                           | Religion as fuel for moral masochism                |
| Essentials for therapists | Recognising the self-sustaining cycle               |
|                           | The importance of personal life history and context |

|                          |   |
|--------------------------|---|
|                          | Different transference-related dynamics within the therapeutic relationship |
| Growth and transcendence | Mourning as growth  |
|                          | Strengthening the ego   |
|                          | Religion as a support system  |

### 3.1. The ego and the self

Throughout several of the interviews conducted, it became increasingly clear that the ego, its mechanisms and its level of strength play a central role in the origin and perpetuation of moral masochism and substance use in individuals. Low ego strength exhibited by these patients was discussed, together with their tendency towards dependence, the term ego strength referring to one’s capacity for successful psychological adaptation (Karush et al., 1964). Participants mentioned how in certain patients, the ego becomes dependent on “turning against the self” and/or on its drug of choice “to maintain its stability”. This fits well with Gordon’s (1987) and Gavin’s (2010) descriptions of people who engage in moral masochism as compliant, passive, helpless and dependent. Participants who work from an object relations perspective also mentioned how these patients tend to engage in “excessive and aggressive” splitting mechanisms. This brings to mind Klein’s view that during excessive substance use, the substance being used represents good external objects in the absence of good internal objects (Klein, 1946). Participants mentioned how patients suffering from moral masochism and SUD often feel inadequate and “not good enough”, in line with Punzi and Lindgren (2018) and Sigalas’ (2020) reference to the presence of self-contempt and a sense of worthlessness in individuals suffering from substance use.

### 3.2. Aggression in and out

The concept of aggression towards the self or others was often mentioned, echoing Freud’s (1924/1961) view that moral masochism results from the turning inwards of destructive instinct. Love is rejected in both moral masochism and in substance use, with one participant mentioning a notable “twist between Eros and Thanatos, love but painful” in these patients. Another aspect of the presentation of moral masochism and SUD that was discussed was punishment towards self and others. This sub-theme corresponds with Sigala’s (2020) statement that the seemingly compulsive drive towards self-destruction of the person engaging in substance use may indeed be fuelled by a need for self-punishment. When conceptualising these phenomena from an object relations perspective during interviews, the presence of envy was considered an important aspect, especially when discussing the nature of the therapeutic relationship that can arise with such patients. Participants revealed how sometimes patients attempt to damage the therapeutic relationship out of vindictiveness, bringing to light the therapeutic dynamic mentioned by Klein (1957/1975), who postulates that an envious attack might be carried out by the patient against the analysts when their interpretations provide them with relief.

### 3.3. A sense of disconnection

Participants referred to a sense of disconnection in patients, denoted by descriptions such as “detachment from reality”, “derealisation” and “almost like entering a trance state”. There was an emphasis on the importance of clinically assessing these patients’ level of “control”, capacity for “inner reflection” and ability to “remain responsible” during emotionally stressful situations. Existential emptiness was another aspect of disconnection that was discussed as a “primary common trait” between substance use and moral masochism by one participant. They stated how this emptiness has to do with “satisfaction or meaningfulness”, bringing to mind Stein’s (2015) assertion that one way of replacing loss of meaning was to resort to substances.

### 3.4. Underlying motives

The possible motivations behind morally masochistic behaviour and substance use discussed during interviews may provide some indication of aetiology, thus informing the approach that needs to be taken in treatment. The use of moral masochism as a long-term maladaptive coping strategy and defence mechanism was discussed, such as the use of turning against the self “to, consciously or unconsciously, gain pity or privileges” or to “escape and sweep pain under the rug”. Moral masochism and substance use were also explored as attempts for gaining control, resonating with Klein’s idea of the morally masochistic individual employing projection and introjection as a way of attempting to control external aggression and frustration (Socarides, 1958). Guilt and its expiation were also discussed as drivers for both SUD and moral masochism, corresponding with Freud’s (1924/1961) discussion about how excessive ego and superego conflict may give rise to guilt and masochistic pathology, especially in cases where there is a cultural suppression of instincts. This has implications for the Maltese cultural context where the Catholic Religion is often practiced as a means of glorifying turning against the self as a “virtue” by certain scrupulous individuals. In fact, Gordon (1989) and Stein (2015) discuss the manner in which masochism can be seen

as a misfired attempt to fulfil the archetypal need to worship and venerate. This archetypal Jungian shadow aspect was mentioned during interviews with therapists taking a Jungian perspective, with roles such as the “helpless victim” being often observed during therapeutic encounters with both morally masochistic individuals and substance users.

### **3.5. Essentials for therapists**

Throughout the interviews, several issues were discussed that act as important pointers for therapists who work with and treat moral masochism and SUD. One of these is the importance of recognizing the self-sustaining cycle of moral masochism and addiction, which is characterised by maladaptive repetitive patterns of behaviour that often feed off each other, with addiction leading to self-sabotage and self-sabotage leading to addiction as a way of seeking relief. This highly correlates with what Freud termed the repetition compulsion, a term referring to patients’ compulsive, repeated exposure to situations resembling their original trauma (Gavin, 2010). Fear of or the unwillingness to change were also discussed as factors that can keep people stuck in this vicious cycle. The different kinds of transference-related dynamics that arise in the therapeutic relationship and their relevance when it comes to helping these particular patients was also discussed, together with the ways in which different participants dealt with these kinds of therapeutic challenges. Transference-related issues that were discussed during interviews include the arising of anger within the countertransference and the arising of helper-victim dynamics within the therapeutic relationship, both of which could potentially impede therapeutic progress.

### **3.6. Growth and transcendence**

Throughout the interviews, therapists explained the various ways in which they attempt to help individuals transcend and relinquish SUD and morally masochistic behaviours, informed by their own theoretical background and clinical experience. Helping patients learn how to mourn and deal with loss emerged as a possible path towards growth, as this may help patients learn from experience and change their undesirable patterns of doing and being. A focus was also placed on the importance of assessing and strengthening the ego of these patients as participants stressed that the depth of what can be approached in therapy without harming the patient greatly depends on how “essential turning against the self is for the survival of the ego”. Leading patients towards gaining awareness into their own difficulties, helping them have more successes in life and pointing out to the patients any of their unacknowledged personality strengths within the context of a safe, strong and respectful therapeutic relationship were all discussed as possible ways of increasing ego strength. Religion was seen to once again be a relevant consideration here as the support that could be offered by a religious community and also the meaning arising from spirituality itself were both discussed as possible healing avenues for people suffering from moral masochism and excessive substance use. This observation echoes Carl Jung’s conceptualisation of the craving towards a substance being a misfired equivalent to a spiritual thirst for wholeness (Jung, 1963).

## **4. Implications for practice**

The main implications of the findings elicited from this study are concerned with direct individual psychotherapy with this patient group, within the context of a therapeutic relationship. One of the main implications that emerged from the study is the importance of helping patients suffering from moral masochism and SUD find meaning and connection in their lives. Despite this not being a direct aim of psychodynamic psychotherapy, this implication places further emphasis on the need to address this element in treatment. The importance of addressing psychological homeostasis also emerged from the research, with an emphasis on helping patients gain ego strength through several interventions, together with helping them gain a more internal, rather than external, locus of control. This is significant as both SUD and moral masochism emerged in this study as two different or coexisting and interlinked forms of an attempt to gain temporary control within patients. The importance of considering patients’ life history, personality, issues of impulsivity, childhood trauma, societal and cultural backgrounds, adverse social conditions (e.g. bullying, social rejection and isolation resulting from neurodivergence) was also emphasised. Another therapeutic implication that emerged from this study is the importance of addressing any guilt patients may be experiencing in therapy. This is particularly significant given that in the research findings, guilt emerges as a bridging factor between moral masochism and excessive substance use. Helping patients deal with guilt may help decrease the vicious cycle of aggression against the self and the need to seek relief through substance use. Finally, appropriately addressing any transference-countertransference dynamics also emerged as an important determinant of the quality of treatment received by these patients. Therapists’ sufficient awareness of their own personal issues and blind spots, attained through personal therapy, supervision and appropriate reflexivity, together with a commitment to maintaining constant sensitivity and genuine, appropriate curiosity when working with patients, were considered crucial in helping them avoid

becoming mired in any undesirable transference-countertransference dyads that would impede therapeutic progress with these patients.

## 5. Conclusion

The key findings yielded from this study include a number of common factors linking moral masochism and SUD and a number of motivations underlying these patients' behaviours. These findings also highlighted certain important issues that therapists must keep in mind regarding the transference-countertransference relationship with such patients. The rich tapestry of complex, coexisting factors offered by these findings may be useful when it comes to helping provide psychodynamic psychotherapists with a deeper understanding and clearer direction when treating substance use sufferers who present with elements of moral masochism. A number of these factors also offer some interesting possible directions for future research. These include the possibility of a more specific qualitative exploration into the sense of existential emptiness that participants tended to agree is found in people suffering from SUD and people who engage in moral masochism. Another avenue for future research could be the exploration of patients' actual experience of psychodynamic therapy. Comparisons between what patients believe helped them and what their therapists deem therapeutic would also shed further light on the treatment of moral masochism and substance use.

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## ANAIS NIN'S JOURNAL OF INCEST

**Michelle Morin-Odic**

*Dr, Psychosomatic (IPSO), Psychoanalysis(SPP) (France)*

### Abstract

Anaïs Nin, thirty three old, meets again with her beloved father, the pianist and composer Joachin Nin. She did not see him since the age of eleven. She then started to write a diary. I want to show that you can interpret the material of her diary like the material of a psychoanalysis. When they meet again, he behaves like an incestual father and commit incest. Through the Journal of the Incest and the Youth Journal, I will try to understand how such an incest can happen.

**Keywords:** *Incest, borderline state, psychosis.*

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### 1. Introduction

I will treat Anaïs Nin like a clinical case. She died in 1977 and left a diary in which she relates the incest between her father and her.

For Racamier incest is a violence done to the body and the mind, with both a traumatism and a disqualification. (Racamier is a very well-known French psychiatrist and psychoanalyst). Incest is acted by an incestuous father or mother giving to their child the role of a sexual partner and considering him or her like a spouse. There is no recognition of difference between generations, breaking the incest taboo. It is a violence done to a child who can't rebel against. The parent should be there to protect the child, instead he breaks into an immature sexuality with the consequences we know. Incest is a "mind killer", "a pleasure killer" says Racamier. It damages the capacity to fantasize, not on the side of life but on the side of death!

What can we think about the incest between Anais Nin at age thirty and her father fifty-four years old? Anais seems to agree... Reading her "Journal of Incest" I wanted to understand how such breaking could happen.

### 2. Journal of incest

The material she brings in her diary can be treated like associations in a psychoanalysis. She has a lot of insight on her own. I worked with the Youth Journal 1914-1919 and the Journal of incest 1932-1934.

#### 2.1. The incest

In May 1933, she finds again her father the pianist and composer Joachin Nin, she did not see since the age of eleven when he left his wife and children to rejoin his mistress, a rich heiress. Anais is married, without children, and her life is quite free with several lovers, the writer Henry Miller and her psychoanalyst Allendy. This is what she writes in her diary:

"I found again my father, the God, only to discover that I don't need him anymore".

"When he comes to me, after having such influence on my childhood, I am a woman and I don't need any more a father or a god...He becomes again a man and a child in the same time".

"My father comes back when I have gotten rid of my cruel and blind instinct of punishing him".

"He isn't anymore the intellectual master I dreamed of (it is Henry now), the father I implored, the protector on which could count the child in me"

You can understand here the aggressiveness against her father who left her at age eleven and her desire to punish him and the way she considers him like a child.

## 2.2. An incestual father

For Racamier “incestual” means creating the climate of incest, “incestuous” committing incest.

When they meet again, Joaquin Nin acts like an incestual father before acting as an incestuous father. Since Anais sent a photo of her at age sixteen, he calls her his “fiancée”. She looks very much physically like him (a Spanish origin, a Catalan father and a Cuban mother). He is going to tell her his love affairs with his mistresses and his sexual life with Anais’ mother: she is deeply shocked and is able to have a sane critical opinion. Then he relates an incestuous dream with her, his daughter, and tells her he is in love with her!!! He will behave like a lover until the consummate incest. Anais seems to be ambivalent, then agrees. She feels desire and fear, and will resist to pleasure. I will spare you the crude details ...

When a little girl of three or four says to her father: “I want to marry you”, the father says: “This is not possible” you will marry your Charming Prince... Here no taboo of the incest. He treats his daughter like a narcissistic object.

How can we explain this incest accepted by an adult woman who seems to agree more or less? The father seems to have a loving feeling for his daughter, the result of a non-resolved Oedipus complex but we can imagine that there was a narcissistic seduction between his mother and himself. She must have treated him like a narcissistic object and gave him the place of his father.... He was a lonely child.

He is a handsome man, a celebrated pianist, and a repentant seducer who did not give up narcissistic seduction with a double of himself. He has incestuous fantasies for his daughter, acts them in a dream and tells her. It is a crude dream without any elaboration. He behaves as an exciting father and manipulator, telling her about the intimate relations with his mistresses and his private sexual life with Anais’s mother. Then he acts his incestuous fantasies, breaking the incest’s taboo with no respect for the difference of generations. For Racamier: “The incestual is a climate where blows the wind of incest”.

When the sexual drives arise, incest occurs. The fathers’ sexual desire appears in the dream and incest is going to happen. Narcissistic seduction is allied to incestuous manipulation. The father will violate his daughter’s body intimacy. It is a breaking in and his pleasure exploded in her (the interdiction increased his pleasure).

The father does not feel guilty. The incest taboo doesn’t exist for him. He wants to pursue this incestuous relation and is sorry not to be able to marry his daughter!!! Her father says: “When you were a child your body was so marvelous, had so perfect shapes. You had such a beautiful arched back. I loved to take picture of you.” This is not the way a father looks at his daughter, he looks at her like a lover. Her father was certainly an incestual father in her childhood.

## 2.3. Consequences of the incest

Anais feels guilty and responsible for this incest, just like the children victims of incest. She is ambivalent, feels desire and fear but also disgust. She has the impression to be poisoned by this union. Anais seems to remain this little girl of eleven, in love with her father, and feeling betrayed and abandoned by him for another woman, Marie-Louise his mistress. At eleven was she preferred to her mother, taking her mother’s place, when the parents were fighting together? What is repeated in this family where incestual reigns? Thanks to her diary, Anais can liberate herself of the traumatism of this incest. Anais had to promise her father the secret but she tells her lover Henry Miller and “confesses” to her ex psychoanalyst Allendy.

Two weeks later, she feels intense heart beats and anxiety, thinks she is going to die (somatic and psychical symptoms) “My life stopped... I am restless... during the travel, I expected to die... I was crying... I can’t stop dreaming... I lost my joy”. She has anxiety dreams: “Henry leaves her and she runs in the forest sobbing”. Anais Nin is an adult and her mind is already structured. She has a hysterical personality with seduction but her capacity to think, fantasize and dream is not touched. Her sexual life, arrived to maturity, looks like her father’s: a spouse and lovers with an identification to him. She acts like a female Don Juan who was preferred by the father and her hypersexuality increases after the incest. The revelations on her parents’ sexuality seem to have an impact. Anais thinks that her father is the best lover she ever had!!! Anxiety and fears of death will disappear. When her possessive and jealous father wants her to quite Henry, she breaks up with him and gives up the acting of her incestuous fantasies.

## 3. Acting in and out: Incestuous equivalence

### 3.1. Acting in during her psychoanalysis with Allendy

Listen to Anais in her Journal of Incest :“The role I play to possess Allendy, I let him believe that analysis put an end to my masochistic devotion for Henry. I settled the story of this breaking with much care... My capacity to lie to Allendy the psychologist.” This testify to her desire of influence on Allendy, with much pleasure!! The capacity to seduce, manipulate and lie evokes the narcissistic perversion

described by Alberto Eiguer. Acting in during a psychoanalysis is a breaking of the rules on both sides, the patient and the psychoanalyst. Anais transferred on her psychoanalyst Allendy her incestuous fantasies for her father and acted them. The incest with her father will repeat the acting in. Did the acting in make the incest easier?

The acting in during a psychoanalysis is an incest equivalence. The fantasy of seduction of an hysteria becomes an acting of transference (René Roussillon). When the transference is too intense, there is release of drives, release into acting. The acting in happens during the session, the acting out after the session. For Freud this is an acting of the transference with a shifting of affectors on the person of the analyst. Janine Chasseguet-Smirgel stresses the absence of psychical elaboration, of mental work (which can go with a normal intelligence).

### 3.2. Acting out with Otto Rank

Anais writes on November the 7<sup>th</sup> 1933: “I go to see him to confess myself... I am preparing a false comedy like with Allendy... but I was sincere as I am in front of my diary.” She wants to confess like with a priest, because she feels guilty! Rank ask her to give up her diary, to break with everybody and to live alone!!! She understands that she wrote her journal to replace her father. Unconsciously she imitated her father, her double. She has been a child, a spouse, a lover but not a woman.

It was not a psychoanalysis but a psychoanalytic therapy which lasted only three months. We don't know how many sessions a week. Otto Rank is an Austrian psychoanalyst, considered as Freud's spiritual son, secretary of the psychoanalytic Society of Vienna. His book “The traumatism of birth” hasten the breaking up with Freud. Anais admires Rank. She is fascinated by his fineness, his liveliness, his curiosity and his spontaneity. It is an intellectual adventure unique for her. The acting will occur after the end of her psychotherapy. She misses Rank, writes to him and visit him. She dreams that she makes love with him. She invites him and his wife with her husband. Then she will seduce him offering her lips and five days later they will make love. They will go through a big passion. She finds him sensual, voluptuous, instinctive. She can in the same day have sexual intercourse with Henry in the morning, Rank in the afternoon and her husband in the evening!!! How can we understand her hypersexuality?

## 4. Youth journal

### 4.1. A traumatic separation at eleven

The incestual climate started certainly in her childhood. I hoped to find in her Youth Journal 1914-1919 elements about her relationship with her father but unfortunately, they are very few. Anais don't talk about the past before her eleven years.

We have to go back to the moment when the father leaves his family in Arcachon in May 1914. Anais starts her diary at the end of July just before the beginning of the war. After a stay in Barcelona with her paternal grandmother, Anais mother's and her three children sail to New York where aunts and cousins greet them at their arrival, a large, loving, lively and warm family. Anais *idealizes* her father “the greatest pianist in the world”. She receives a letter from her dear father and hopes he will come for Christmas or for her birthday in February but she will be disappointed. She misses her father and often cries, take refuge in her diary and hides her sadness to the family. About communion in church at Mass, she says: “*During the Communion I feel rather kissing my father and receiving him than receiving God*”. Is this a fantasy of incorporation or an incestuous kiss? She learns that a mistress retains him: Marie-Louise. Anais will then dress in black. She feels his absence as a treason. She started then the mourning of her father's love and of her incestuous oedipal desires for him.

In New York, her mother will give her a maternal role, heavy to bear for an eleven years old girl, yet very mature. When she has to leave, she asks Anais to take care of her two younger brothers, do the cooking and the housework. I make a link between Anais' somatic symptoms (pain in the legs and in the back) and this heavy maternal role. In a repetitive way, during a year and a half she will complain in her diary about the lack of a father and her sadness. Anais finds refuge in writing a diary, poems, short stories and reading and is excellent in French essay. Writing is a need, a passion. Little by little, she will come out of her depression, go out with friends, visit her cousins, go to the movie, the theater, ride horse and have a life rich in friendship and leisure. She will take care of her look, get interested in boys and go to dances and balls. This testify the mourning process related to her father: she gives up her oedipal and incestuous desires and get interested in boys of her age and house holding with an identification to maternal substitutes. She says she is the “maid” of her mother who is in the same time mother and father.

Here some confidences of her mother: “Your father never loved his house, always with friends, strangers. Life was miserable because he was very brutal. He locked me in a room to be able to beat the children. He came home to criticize, to scold; One day in Arcachon, he wrote a letter and left... Do you



remember those brutal scenes? No answer from Anais... Anais seems to have repressed that! The image of a brutal father who beats his children appear, not only a seducer and a manipulator. He seems to fluctuate between psychosis and narcissistic perversion. We can ask ourselves if the distance with her father and the good influence of the maternal family was not positive for Anais who was able to renounce to this excessive attachment to her father.

## 5. Conclusion

Racamier conceived of the idea of “incestual” for psychotic patients and psychotic symptoms without evident psychosis. Anais seems to be very sensitive to object loss and separation. Her hysterical personality, separation anxiety, psychosomatic and pervert symptoms shows a patchwork you can find in borderline state. She is good too at manipulating and lying to her psychoanalyst Allendy and her lovers and husband. Incest had an impact on her: heart palpitations, death anxiety, tears and loss of joy.

The father oscillates between psychosis without symptoms and narcissistic perversion. He certainly created an incestual climate in her childhood and preferred her to her mother and put her in her place. He is an incestual and incestuous father who seduce and manipulate his daughter. The dream where he makes love with his daughter is crude and raw, with no elaboration, no mental work, no symbolization. The taboo of the incest, and the difference of generation doesn't exist for him. He has no respect for the body and intimacy of Anais and treats her like a narcissistic object. When he has sexual drives for his daughter, he acts them. He asks her to keep the incest secret. Fortunately, she doesn't and write in her journal and tells to her lover Henry Miller and “confess” to her ex psychoanalyst and lover Allendy. Anais seems to consent. She is ambivalent, she feels fear and desire, and also disgust. She feels guilty and responsible like would be a child. Is she again the little girl of eleven years in love with her father? We understand that Anais has been seduced and manipulated by her father in her childhood and that the painful and traumatic separation may have been beneficial for Anais and also the sane attitude of her mother's family.

Incest is a manifestation of sexual perversion. It leads for a child to destruction and havoc of the psychism. The impact is not as serious for an adult.

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The background features a teal, textured surface with visible brushstrokes and some cracking. On the left side, there are large, expressive brushstrokes in shades of orange and red. A white square frame is partially visible, overlapping the orange brushstrokes and the teal background. The word "Posters" is centered in the white space of the frame.

# Posters





# FLEXIBLE EXPRESSION OF EMOTIONS IN RELATION TO SYMPTOMS OF DEPRESSION AND ANXIETY IN EMERGING ADULTHOOD

**Jakub Ladecký<sup>1</sup>, & Lubor Pilárik<sup>2</sup>**

<sup>1</sup>*Department of Psychology, University of Ss. Cyril and Methodius (Slovakia)*

<sup>2</sup>*Department of Pedagogy, Matej Bel University (Slovakia)*

## Abstract

In the realm of mental health research, understanding the interplay between emotion expression and psychological well-being remains a crucial endeavor. The theory suggests that suppression of emotion expression is generally a maladaptive emotion regulation strategy, but empirical studies are ambiguous about this claim. Recently, the concept of flexibility in emotion expression has been studied to overcome the limitations of rigidity connected with the concept of suppression of emotion expression. The purpose of this study was to explore associations between suppression of emotion expression, flexible emotion expression and symptoms of depression and anxiety. We administered self-report scales to participants (N = 836) in emerging adulthood to measure suppression of emotion expression, flexible expression and suppression of emotion, and the presence of symptoms of depression and anxiety. We found that the presence of depression and anxiety symptoms was weakly positively related to suppression of emotion expression, but weakly negatively related to flexible suppression of emotion expression. We discuss the results in terms of assessing the adaptive nature of emotion regulation strategies.

**Keywords:** *Flexibility, expression of emotions, depression, anxiety, emerging adulthood.*

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## 1. Introduction

The current subject of clinical research is the possibility of utilizing difficulties in emotion regulation within a transdiagnostic approach (Aldao & Nolen-Hoeksema, 2010). Learning adaptive forms of emotion regulation is a critical aspect for healthy psychological development in children and adolescents, whereas maladaptive regulation is fundamental in the onset of mental disorders such as anxiety or depressive disorders.

Within the process model of emotion regulation, Gross & John (2003) identifies two fundamental strategies: cognitive reappraisal and suppression of expression. Growing evidence suggests that maladaptive forms of emotion regulation are associated with a wide range of psychopathological manifestations in both children and adults (Bohnert et al., 2003; Silk et al., 2003). McLaughlin et al. (2011) suggest that maladaptive emotion regulation predicts anxiety, aggression, and eating disorders but is not associated with depressive symptomatology. However, current studies indicate negative relationships between emotion suppression and depressive symptoms (Fearey et al., 2021). Corral-Frías, (2022) claims there is a negative relationship between depression, anxiety, and cognitive reappraisal, while there are positive relationships between emotion suppression and these emotional difficulties.

In the field of research on the adaptiveness of emotion regulation strategies, uncertainties arose, leading researchers to explore the phenomenon from the perspective of emotional flexibility. Models of emotional flexibility define adaptive forms of emotion regulation as the flexible use of different strategies depending on the current situation. According to Burton & Bonanno (2016), emotion regulation strategies are not exclusively effective and adaptive or ineffective and maladaptive. Flexibility in emotion regulation is related to manifestations of psychopathology (Aldao et al., 2015). The ability to flexibly enhance suppression of emotions as well as flexibility in enhancing expression in emotions negatively correlates with anxiety and depression (Burton & Bonanno, 2016). According to Gonzales-Escamilla et al. (2022), there is a negative relationship between enhanced flexible emotional expression and depression and anxiety. The results contradict Chen et al. (2018), according to whom only the ability to flexibly enhance suppression negatively correlates with anxiety, thus requiring further exploration of the phenomenon. The aim of the present research is to elucidate the relationships between emotion suppression, flexibility in emotional expression, and indicators of mental health such as anxiety and depression symptoms.

## 2. Method

### 2.1. Participants

The research sample consisted of N=836 respondents from the Slovak Republic, of which n=490 identified as women and n=346 identified as men. The sample comprised respondents in the emerging adulthood period, with an average age of M=19.58. Respondents diagnosed with mental disorders were excluded from the original sample.

### 2.2. Measurement

The data were collected in May 2023 using pencil-and-paper format across all regions of the Slovak Republic. The questionnaire battery included the General Anxiety Disorder Scale (GAD-7; Spitzer et al., 2006; Cronbach's  $\alpha = .85$ ), the Patient Health Questionnaire-9 (PHQ-9; Kroenke et al., 2001; Cronbach's  $\alpha = .84$ ) for assessing depressive symptoms, the Emotion Regulation Questionnaire (ERQ; Gross & John, 2003; Cronbach's  $\alpha$  for emotion suppression = .67; Cronbach's  $\alpha$  for cognitive reappraisal = .77) measuring two basic emotion regulation strategies - emotion suppression and cognitive reappraisal, and the Flexible Regulation of Emotional Expression Scale (FREE; Burton & Bonanno, 2016; Cronbach's  $\alpha$  for flexible enhancement of emotion expression = .71; Cronbach's  $\alpha$  for flexible enhancement of emotion suppression = .62).

## 3. Results

In Table 1, the results of statistical analyses aimed at determining relationships between variables are recorded. Correlational analysis revealed several relationships among the raw scores of individual variables, specifically between indicators of mental health, emotion regulation, and flexibility in emotional expression. A statistically significant weak negative correlation was found between depression (PHQ-9) and cognitive reappraisal (ERQ-CR) ( $r=-0.193$ ;  $p<0.001$ ). Cognitive reappraisal also negatively correlated with anxiety (GAD-7) ( $r=-0.186$ ;  $p<0.001$ ). Conversely, emotion suppression (ERQ-ES) positively correlated with depression ( $r=0.141$ ;  $p<0.001$ ) and anxiety ( $r=0.152$ ;  $p<0.001$ ). Flexibility in emotional expression (FREE-EE) showed a statistically significant positive correlation with anxiety ( $r=0.076$ ;  $p<0.03$ ). Flexibility in emotion suppression negatively correlated with depression ( $r=-0.089$ ;  $p<0.011$ ) and anxiety ( $r=-0.087$ ;  $p<0.012$ ).

Table 1. Correlation between depression, anxiety, emotion regulation and flexible regulation of emotion expression.

| Variable | ERQ-CR    | ERQ-ES   | FREE-EE | FREE-ES |
|----------|-----------|----------|---------|---------|
| PHQ-9    | -0.193*** | 0.141*** | 0.039   | -0.089* |
| GAD-7    | -0.186*** | 0.152*** | 0.076*  | -0.087* |

ERQ-CR – cognitive reappraisal, ERQ-ES – emotion suppression, FREE-EE – flexibility in expression of emotions, FREE-ES – flexibility in emotion suppression.

## 4. Discussion

Currently, emotion regulation is being examined within the context of a transdiagnostic approach in diagnosing emotional disorders. Within the present study, the existence of relationships between indicators of emotional health, emotion regulation, and flexibility in emotional expression was investigated. The results of our research supported the existence of relationships between these variables; however, the relationships were not sufficiently strong, and these constructs require further empirical investigation.

In our study, the claims by authors regarding the associations between psychopathology symptoms and emotion regulation were supported (Aldao & Nolen-Hoeksema, 2010; Bohnert et al., 2003; Silk et al., 2003). As hypothesized, the utilization of cognitive reappraisal leads to lower levels of depression and anxiety, whereas the use of suppression leads to increased levels of depressive and anxious symptomatology. However, only weak relationships were found between these constructs.

Regarding the evaluation of relationships between emotional flexibility and indicators of emotional health, weak positive relationships were found between flexibility in emotional expression and anxiety, contradicting the claim by Gonzales-Escamilia et al. (2022) that individuals who can flexibly enhance emotional expression have lower levels of depression and anxiety. Inconsistencies in the results

suggest the need for further exploration in future research endeavours. Conversely, in line with previous studies, it was found that enhancing flexible emotion suppression leads to reduced levels of depressive and anxious symptomatology (Burton & Bonanno, 2016; Gonzales-Escamilla et al., 2022).

Based on the results, we can assume that the constructs of emotion regulation and emotional flexibility are related to psychopathology, and focusing on these constructs may lead to more targeted diagnosis or treatment of emotional difficulties.

A limitation of the study is the deliberate sampling method employed, as randomizing the research sample allows for data generalization. Another limitation of the research is the selection of methods that are not standardized in our population and involve self-report scales, which may prompt respondents to provide socially desirable responses.

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# EVALUATING CHATGPT'S DIAGNOSTIC CAPABILITIES FOR MENTAL HEALTH DISORDERS

Asaf Wishnia<sup>1</sup>, Eyal Rosenstreich<sup>1,2</sup>, & Uzi Levi<sup>1</sup>

<sup>1</sup>*Department of Behavioral Sciences, Peres Academic Center (Israel)*

<sup>2</sup>*School of Human Movement & Sport, Levinsky-Wingate Academic Center (Israel)*

## Abstract

The field of artificial intelligence (AI) has seen significant advancements in recent years, making it a notable technological achievement in various aspects of daily life. In this study, we sought to investigate the feasibility of employing AI in the realm of mental health. Specifically, we assessed the efficacy of ChatGPT as a diagnostic tool for mental health disorders. To this end, 25 vignettes depicting common mental disorders were presented to ChatGPT, and its diagnostic accuracy was evaluated across three experimental conditions (the original vignette, the vignette with gender switch, and a shortened version of the vignette). The results showed high accuracy rate, surpassing random guessing, and highlighted ChatGPT's adherence to specific diagnostic criteria. This accuracy persisted even when the vignettes depicted rare mental disorders. These findings are discussed with an emphasis on potential gender biases, the risks tied to self-diagnosis, and the pressing need for further validation and ethical considerations. The study concludes by addressing the potential for incorporating ChatGPT into the broader realm of mental health in the future.

**Keywords:** *ChatGPT, mental health, self-diagnose, artificial intelligence.*

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## 1. Introduction and objectives

The internet has become a pivotal source for diagnosing physical and mental health conditions. It offers rapid access to medical information but also poses risks like misdiagnosis and increased anxiety (Bessiere et al., 2010). This dual nature is exemplified by the mixed accuracy of online symptom checkers, with Semigran et al. (2015) reporting an average correctness rate of around 49.67%.

In mental health, the challenge is more pronounced due to the subjective nature of diagnoses and lack of standardization (cf. Lupton, 2014). To address this, AI technologies like ChatGPT are being explored for their potential in improving diagnosis accuracy and efficiency. Since its 2022 release, ChatGPT has shown promise in various fields, suggesting its utility in standardizing mental health diagnoses.

The present study assesses ChatGPT's efficacy as a tool for mental health professionals and for individual self-diagnosis. We aim to evaluate its diagnostic accuracy across a spectrum of mental disorders and its ability to consider gender-specific symptoms and interpret brief symptom descriptions. This research is significant in understanding ChatGPT's potential and limitations as a mental health diagnostic aid.

## 2. Method

### 2.1. Materials and procedure

This study utilized 25 vignettes depicting four common mental disorders: Depression, Anxiety, PTSD, and OCD, sourced from scholarly literature, mainly case studies with diagnoses by mental health professionals. Resources included Google Scholar and PubMed, focusing on studies in reputable academic journals with specific diagnoses and patient-reported symptoms. The Psychodynamic Diagnostic Manual (PDM) aided in identifying relevant studies, emphasizing patient experiences over professional opinions. Due to ChatGPT's limitations, vignette quotations were adapted into first-person narratives. Additionally, four rare disorders (Cotard's Syndrome, Capgras Syndrome, Alien Hand Syndrome, and Pica) were included to test ChatGPT's diagnostic range, defining rarity as less than 1% diagnosis rate by professionals.

Conducted from February to April 2023, the study involved ChatGPT V3.5 and V4, and consisted of three conditions. The first condition involved submitting the adjusted original vignettes into ChatGPT V3 to assess its diagnostic accuracy. The second condition altered patient genders in the vignettes to explore

ChatGPT's gender-sensitive diagnostic capability. The third condition, coinciding with ChatGPT-4's release, involved recalibrating the same vignettes with critical symptoms removed, aligning with the DSM-V, to test diagnostic accuracy with incomplete information. A separate, fourth, condition focused on rare mental health cases, utilizing ChatGPT-4 exclusively, with cases sourced from research on PubMed, to evaluate ChatGPT's detection capabilities in rare disorders.

### 3. Results

In the first condition, ChatGPT achieved a 96% accuracy in diagnosing 25 original vignettes,  $\chi^2(1) = 21.160$ ,  $p < .001$ , indicating significantly better performance than chance. In the second condition (gender-switched vignettes), ChatGPT maintained a high accuracy of 95.23% on 21 vignettes,  $\chi^2(1) = 17.190$ ,  $p < .001$ . In the third condition (shortened vignettes), accuracy was 86.95%,  $\chi^2(1) = 12.565$ ,  $p < .001$ .

ChatGPT also correctly identified all rare mental health conditions, but no statistical analysis was conducted due to the small sample size. Chi-square tests comparing accuracy in the original and the altered vignettes, revealed no significant differences for the gender switched vignettes,  $\chi^2(1) = .053$ ,  $p = .819$ , as well as for the shortened vignettes,  $\chi^2(1) = 1.57$ ,  $p = .692$ .

### 4. Discussion and conclusions

The study aimed to evaluate ChatGPT as a diagnostic tool for mental health disorders across different scenarios. ChatGPT showed high diagnostic accuracy across the three experimental conditions: original, gender-switch, and symptom elaboration. This aligns with previous research on AI in mental health (e.g., Davenport & Kalakota, 2019), highlighting AI's potential but also the need for validation and ethical considerations. The study also examined gender biases in diagnoses, revealing discrepancies such as in Autism Spectrum Disorder diagnoses between genders, reflecting biases in clinical practice. Additionally, the study tested ChatGPT on rare mental illnesses like Cotard's and Capgras Syndromes, where it correctly diagnosed all cases. However, the study is limited by the small sample size and potential biases from using vignettes from research articles. Future research should focus on broader number of vignettes collected from various sources.

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## THE COMPUTERIZATION OF THE ABSTRACT AND SPATIAL REASONING TEST (ASRT)

Alessandra Fonseca<sup>1</sup>, & Larissa Gabardo-Martins<sup>2</sup>

<sup>1</sup>Vassouras University (Brazil)

<sup>2</sup>Postgraduate Program in Psychology, Salgado de Oliveira University (Brazil)

### Abstract

The study aimed to adapt the Abstract and Spatial Reasoning Test (ASRT) for computerized administration while maintaining its original psychometric characteristics. Two samples were utilized: one to assess the latent structure in 540 eighth and ninth-grade students and another to evaluate the factorial structure and item parameters equivalence between the computerized and paper-and-pencil versions in 318 eighth and ninth-grade students. ASRT was computerized using Java, and Structural Equation Modeling indicated a unifactorial model's adequacy for the computerized version. Results partially confirmed the original instrument's bifactorial structure. Multigroup Confirmatory Factor Analysis demonstrated model invariance across different groups. In conclusion, the computerized ASRT showed evidence of satisfactory internal structure validity and equivalence to the theoretical model, with invariant item parameters between computerized and paper-and-pencil versions.

**Keywords:** *Intelligence, computerized testing, abstract reasoning, space reasoning.*

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### 1. Introduction

Research in Psychology has, for decades, addressed the complexity of intelligence, with different perspectives on reasoning (Carroll, 1993; McGrew & Flanagan, 1998; McGrew & Wendling, 2010; van der Maas et al., 2006). Psychometric models have been widely used to understand intelligence, based on factor analyzes and correlations between subtests of assessment instruments (Carroll, 1993). These models seek to identify how many and which dimensions would be necessary to understand specific intellectual abilities, from the theories of Spearman and Thurstone to the Cattell-Horn-Carroll (CHC) model, which postulates a general dimension capable of aggregating several specific cognitive abilities (McGrew, 2005; Primi, 2003).

Despite the development of several instruments for assessing intelligence, the availability of computerized versions is still limited. However, the advantages of digital versions, such as greater participant sincerity and reduced costs, have driven their adoption (Olea & Hontangas, 1999; Kingsbury & Houser, 1999). Given this scenario, this dissertation aims to adapt the Abstract and Spatial Reasoning Test (TRAE) to a digital platform and evaluate the stability of the parameters between its versions (ITC, 2005).

### 2. Abstract and Spatial Reasoning Test

Valentini (2013) developed the Abstract and Spatial Reasoning Test (TRAE) to quickly assess specific intelligence skills. Divided into two subtests, the TRAE aims to assess Abstract Reasoning (AR), related to solving intellectual problems, and Spatial Reasoning (RE), which assesses visuospatial skills and orientation in 3D space.

The AR subtest contains 12 multiple-choice questions, where participants need to discover principles of transformation between figures and apply them. On the other hand, the RE subtest seeks to assess visuospatial and orientation skills in 3D space. Although the two versions of the TRAE are only available in traditional paper and pencil format, Valentini (2013) highlights the need for research to evaluate a possible computerized version of the test, which could significantly contribute to the area of psychological assessment in Brazil.

### 3. Study 1: Latent structure of the computerized version of ASRT

The study aimed to evaluate the latent structure of the computerized version of the Abstract and Spatial Reasoning Test (TRAE), investigating whether its best structure is one-dimensional, two-factor or two-factor. The sample consisted of 540 eighth and ninth year students from public and private institutions in Rio de Janeiro, aged between 13 and 18 years old. TRAE, divided into Abstract Reasoning (RA) and Spatial Reasoning (RE), was applied in a computerized way, adapted for clearer instructions and time control. The procedures included test administration in computer laboratories, followed by structural analysis using Structural Equation Modeling.

The results indicated that the single-factor model presented the best fit, showing a dominant general dimension, with significant factor loadings. Despite the limitations of the regional sample, the study contributes to psychometrics by providing an efficient and paper-free assessment tool, reducing application errors and saving time. Considerations for future research include validating the instrument in different contexts.

### 4. Study 2: Invariance of item parameters

This study investigated the equivalence between the computerized and traditional paper versions of the Test of Abstract and Spatial Reasoning (TRAE), using a repeated measures design. The sample consisted of 318 students in the eighth and ninth years of basic education in São Gonçalo, RJ, aged between 12 and 21 years old (mean = 14.69; SD = 1.27), 55% of whom were female. Both versions of TRAE were applied one week apart, in public and private schools. The procedures involved analysis using Structural Equation Modeling, with the data adjusted to a long format to allow analysis of invariance between applications.

The results indicated invariance in item parameters between versions, allowing the use of the computerized version without group bias. The more restricted analysis, with factor loadings and fixed thresholds between versions, showed the best fit to the data, confirming the study hypotheses. However, it is important to consider that the long format of the database may violate the independence of observations, suggesting a reanalysis of the data with invariance models at the item level.

### 5. Conclusions

This study's main objective was to adapt an intelligence scale for a computerized application, maintaining its original psychometric characteristics. Two studies were conducted to achieve this objective: the first evaluated the latent structure of the computerized version of the Test of Abstract and Spatial Reasoning (TRAE), while the second investigated the equivalence between the factor structure and item parameters in the computerized and paper versions. from TRAE.

The initial study sought to develop a computerized version of the TRAE to assess fluid intelligence quickly and collectively. The results showed that the tested models, with the exception of the bifactor model, presented a general dimension, indicating similarity in fit indices. Furthermore, balance was observed in the distribution of item difficulty parameters, confirming evidence of satisfactory internal structure validity.

The second study demonstrated the invariance between item parameters in the different versions of the TRAE (computerized and paper-based), supporting the equivalence of the two forms of the instrument. This finding is relevant in the context of the increasing computerization of psychological and educational assessment, providing an efficient tool to measure Abstract and Spatial Reasoning, without the need for paper, saving time and reducing measurement errors.

However, it is important to consider that this research has limitations, such as the sample restricted to a Brazilian region and the need for future studies to validate the instrument in different contexts and compare it with other already established tools. These additional efforts can enrich our understanding of intelligence and learning processes, especially in the school context.

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# THE SITUATIONAL TEST OF EMOTIONAL FLEXIBILITY: THE EXPERT'S CONSENSUS ON THE EMOTION REGULATION STRATEGY EFFECTIVENESS

**Eubor Pilárik, Eva Virostková Nábělková, Zuzana Heinzová, & Lada Kaliská**  
*Department of Psychology, Matej Bel University (Slovakia)*

## Abstract

The ability to effectively regulate emotions has emerged as an important protective factor for mental health. Current research provides insights into the maladaptive/adaptive nature of the selected emotion regulation strategies (e.g., cognitive reappraisal, suppression of emotion expression). The ambiguity of these findings suggests a protective factor of mental health may be an individual's ability to flexibly use different emotion regulation strategies depending on the situation evoking this emotion. However, measuring the flexibility of emotion regulation strategies is problematic due to the lack of measurements. The Situational Test of Emotional Flexibility (STEF) was created by the authors of the study, containing twelve pairs of situation scenarios eliciting three negative emotions (fear, sadness, and anger). Each pair of scenarios takes place in the same situation, changing only one aspect of the situation (e.g., the presence of other people). Participants are asked to consider six emotion regulation strategy effectiveness (acceptance, cognitive reappraisal, rumination, expression of emotion, ignoring, self-compassion) to regulate the evoked emotion for each scenario. STEF allows the assessment of the emotion regulation strategy flexibility in each scenario and also the assessment of the preferred emotion regulation strategy. This paper presents the results of an expert consensus on the effectiveness of six emotion regulation strategies via 24 scenarios. The research sample consisted of 19 experts (4 psychotherapists, 10 counselling/school psychologists, and 5 clinical psychologists) requiring at least five years of practice ( $M = 11.4$  years) who assessed the effectiveness of using six emotion regulation strategies in 24 scenarios evoking fear, sadness, and anger. The results show that from the experts' perspective, self-compassion, expression of emotion, and cognitive reappraisal were the most effective emotion regulation strategies for all negative emotions. Ignoring emotion and rumination were the least effective strategies for all of them. The rank order of the effectiveness of the strategies showed slight differences separately for each emotion: anger, sadness, and fear. We discuss the results regarding the adaptive nature of emotion regulation strategies.

**Keywords:** *Flexibility, emotion regulation strategies, measurement, expert assessment.*

## 1. Introduction

Emotions are fundamental to human experience and behaviour, influencing mental health, thinking processes, and social interactions. Therefore, understanding how to regulate emotions effectively is essential for individuals to cope with various life situations. Over the past two decades, research has shown that difficulties in emotion regulation (ER) are central to developing and maintaining well-being and psychopathology (e.g., Kraiss et al., 2020). Gross' (1999) process model of ER stands out as a highly influential conceptual framework. This model comprehensively defines ER as a set of strategies individuals use to increase, maintain, or decrease their affective experience, including the feelings, behaviours, or physiological responses that make up a given emotion (Gross, 1999).

So far, a wider range of ER strategies have been identified, and researchers have sought to validate their adaptive capacity. For example, the adaptive impact of cognitive reappraisal, acceptance, and self-compassion has been demonstrated in clinical psychology. On the other hand, rumination, suppression, and avoidance are maladaptive RE strategies (e.g., Aldao et al., 2010; Sloan et al., 2017; Dietrich et al., 2014). Challenges to the distinction between adaptive and maladaptive emotion regulation strategies have emerged with introducing the concepts of ER flexibility. In this context, maladaptive strategies are characterized by rigid utilization or strategies hindering goal achievement (Aldao et al.,

2015). However, measuring the flexibility of emotion regulation strategies is problematic due to the lack of measurements.

The study authors have created the Situational Test of Emotional Flexibility (STEF), which contains situation scenarios eliciting three negative emotions (fear, sadness, and anger) to measure ER flexibility. In this paper, we present the first results from the initial phase of STEF creation. We aimed to investigate how experts judge the effectiveness of six RE strategies (acceptance, cognitive reappraisal, rumination, expression of emotion, ignoring, and self-compassion) in scenarios evoking negative emotions.

## 2. Methods

### 2.1. Sample

The research sample consisted of 19 experts (4 psychotherapists, 10 counselling/school psychologists, and 5 clinical psychologists) with minimum five years of practice ( $M = 11.4$  years). 15 of the experts were female. A convenience sampling procedure combined with the snowball sampling method was used to select the research sample.

### 2.2. Measurements

The Situational Test of Emotional Flexibility (STEF) was used to assess the effectiveness of six ER strategies being developed and validated by the study authors. The first version of the STEF consisted of 12 pairs of scenarios (24 scenarios in total). Scenarios were used to evoke three negative emotions (four for each emotion of fear, sadness and anger). The pairs of scenarios have the same content but differ in the context in which they are set (e.g., the presence of another person). One example of two scenarios (scenarios 1 and 13) differs as follows: “You're driving in the rain, and you get a flat tyre. Even though you have the tools to change the wheel, something gets stuck, and you can't do it. You're already frustrated and angry when a car pulls up next to you. *Your old friend (scenario 1) / Two policemen (scenario 13)* get out, asking what happened. What will you do with your emotion at that moment?”. Experts judged the effectiveness of RE strategies on a 4-point scale (0 = ineffective, 3 = very effective). The following six RE strategies were considered and were the same for each scenario: a) I accept my emotion and have no need to change it (*acceptation*); b) I decide to see the situation from a broader perspective (*cognitive reappraisal*); c) I think over and over about my emotion and its causes (*rumination*); d) I openly express my emotion. (express it) (*expression of emotion*); e) I ignore my emotion (push it out) (*ignoring*); f) I have a kind understanding of my emotion (*self-compassion*). The summary score for each RE strategy was calculated as the average of the effectiveness across all 24 scenarios (or for the corresponding eight scenarios when considering the effectiveness of each negative emotion).

### 2.3. Statistical analysis

Data were analysed using the ANOVA test for repeated measures using the statistical software SPSS ver. 19. Prior to analysis, the normality of the data distribution was assessed, and the sphericity of the data was verified using Mauchly's test of sphericity. Post-hoc comparisons were analysed using Bonferroni confidence interval adjustment.

## 3. Results

Analysis of variance for repeated measures found significant differences in the sum effectiveness of six RE strategies with a large effect size ( $F_{(5, 90)} = 27.134$ ,  $p < .001$ ,  $\eta^2 = .601$ ). Experts rated self-compassion, expression, and cognitive reappraisal as the most effective, and the difference between them was not statistically significant. Acceptance was judged to be less effective compared to self-compassion ( $p < .01$ ) but more effective compared to rumination ( $p < .01$ ) and ignoring ( $p < .01$ ). Rumination and ignoring were judged to be the least effective RE strategies compared to all other RE strategies ( $p < .001$ ).

Next, we focused on comparing the effectiveness of each RE strategy for the three negative emotions. We found that acceptance ( $F_{(1.338, 24.082)} = 3.927$ ,  $p < .05$ ,  $\eta^2 = .179$ ) and emotion expression ( $F_{(2, 36)} = 4.036$ ,  $p < .05$ ,  $\eta^2 = .183$ ) were considered more effective for sadness than for fear. Self-compassion was also more effective for sadness than for both fear and anger ( $F_{(1.449, 26.081)} = 7.006$ ,  $p < .01$ ,  $\eta^2 = .282$ ). On the other hand, ignoring the fear was considered more effective for fear than for sadness ( $F_{(2, 36)} = 5.017$ ,  $p < .05$ ,  $\eta^2 = .218$ ). No significant differences of effectiveness in cognitive reappraisal ( $F_{(1.426, 25.661)} = 1.995$ ,  $p > .05$ ) and rumination ( $F_{(2, 36)} = .874$ ,  $p > .05$ ) were found (see Table 1).

Table 1. Means and standard deviations of measured variables.

| ER strategies | sum  |     | anger |     | sadness |     | fear |     |
|---------------|------|-----|-------|-----|---------|-----|------|-----|
|               | Mean | SD  | Mean  | SD  | Mean    | SD  | Mean | SD  |
| Acc           | 1,51 | ,68 | 1,50  | ,70 | 1,62    | ,73 | 1,42 | ,69 |
| CogR          | 1,97 | ,51 | 2,02  | ,55 | 1,87    | ,59 | 2,02 | ,53 |
| Rum           | ,73  | ,53 | ,72   | ,53 | ,71     | ,55 | ,77  | ,56 |
| Exp           | 2,06 | ,41 | 1,99  | ,41 | 2,20    | ,43 | 2,00 | ,54 |
| Ign           | ,67  | ,58 | ,68   | ,51 | ,54     | ,61 | ,80  | ,72 |
| SelfC         | 2,29 | ,71 | 2,17  | ,77 | 2,43    | ,68 | 2,25 | ,73 |

Note: Acc – acceptance, CogR – cognitive reappraisal, Rum – rumination, Exp – expression of emotion, Ign – ignoring, SelfC – self-compassion, SD – standard deviation

#### 4. Discussion

RE strategies are currently being investigated as a possible transdiagnostic construct predictive of psychopathology and well-being. Self-report questionnaires and scales, e.g., the Emotion Regulation Questionnaire (Gross & John, 2003) are the most widely used ways of researching and measuring ER strategies, but they have several limitations. The authors of this study are currently developing the STEF, which is based on real-life scenarios to get closer to respondents' experiences.

Our pilot study yielded that experts considered three RE strategies most effective across all scenarios - self-compassion, cognitive reappraisal, and expressing emotions. On the other hand, experts considered ignoring emotions and rumination to be the least effective. These findings are consistent with previous research using self-report questionnaires (e.g., Aldao et al., 2010; Sloan et al., 2017; Dietrich et al., 2014). However, we also found that judgments of the effectiveness of some strategies varied in relation to the emotion evoked. This suggests that some RE strategies may be more or less adaptive, regardless of the context in which they are used, such as the cognitive reappraisal strategy and rumination. On the other hand, the effectiveness of emotion expression and acceptance may depend more on the specifics of the emotion evoked and the context.

The study's main limitations are a pilot application of the STEF, and a limited number of the experts used. Future research needs to be directed toward validating the STEF's psychometric properties and individual flexibility scores in ER strategies that opens up to the interest of foreign researchers, and later on to practitioners.

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## DEPRESSION AND HIV INFECTION AMONG MSM: THE PERFECT STORM TOWARD CHEMSEX

**Stella Capodieci, Mauro Zaccarelli, Alessandra Latini, Christof Stingone,  
Maria Gabriella Doná, & Massimo Giuliani**

*STI/HIV Unit, San Gallicano Dermatological Institute IRCCS, Rome (Italy)*

### Abstract

**Introduction:** The chemsex represent a new phenomenon of sexualized-drug-use, mainly observed among European and North American communities of men who have sex with men (MSM). A chemsex session differs to the use of recreational drugs to promote sex by type of drugs utilized (i.e., GHB, crystal n-methylamphetamine and 4-methylmethacathinone), length (i.e., from several hour to some days), number and characteristics of participants (i.e., multiple partners, persons living with HIV-PLWH) and risks for health (i.e., sexually transmitted infections-STI, drug-addiction, overdose, and death).

**Objectives:** An in-depth survey was conducted to assess the prevalence, characteristics, and correlates of chemsex in MSM at risk for STIs.

**Methods:** A validated anonymous self-administered questionnaire, was proposed to consecutive MSM attending at the STI Center of San Gallicano Dermatological Institute in Rome, Italy. After informed consent, all participants were asked to fill out the questionnaire and to place it in a ballot box before leaving the center. The questionnaire was designed to investigate demographic, sexual, substance dependence and preventive behaviors in the participants. Also, the vulnerability for anxiety and depression was investigated in participants using the items of the PHQ-2 and of the GAD-2.

**Results:** From 1st to 30 November 2023, 129 MSM have accepted to fill out the questionnaire. Of the participants, 121 (93.8%) questionnaires were collected and validated. Eight questionnaires were excluded due to errors in filling out, multiple missing responses and cancellations. The median age between PLWH and non-PLWH was 45.5 (IQR=40-57) years and 45.0 (IQR=32-50) years, respectively. Fifty-six out 118 (47.5%) MSM tested for HIV, were PLWH. Chemsex was referred to by 25 (20.7%, C.I. 95%: 14.4-28.7) participants; 15 (26.8%, C.I. 95%: 17.0-39.6) PLWH and 10 (16.1%, C.I. 95%: 0.1-27.2) non-PLWH. MSM who have showed score above threshold ( $\geq 3$ ) to PHQ-2 were 17 (27.4%) and 15 (28.8%) between PLWH and non-PLWH, respectively. Scores above threshold to GAD-2 were measured in 28 (45.2%) and 20 (35.7%) PLWH and non-PLWH, respectively. Multistrata-analysis, using HIV status and scores to PHQ2 and GAD2, showed an association between to be above threshold to PHQ-2 and chemsex, at limit of the statistical significance (AOR= 1.65; 95% CI: 0.98-2.78).

**Conclusions:** Preliminary findings from the survey suggest that a high proportion of MSM at risk for STIs engaged in chemsex, particularly if PLWH. Moreover, depression seems to contribute to making MSM prone to chemsex behavior, despite these results should be reevaluated overtime on the expected larger study population.

**Keywords:** *HIV infection, MSM, chemsex, anxiety, depression.*

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### 1. Introduction

The term “chemsex” commonly refers to the intended use of chemical drugs (i.e. “chems”) during sex to prolong, empower, and intensify sexual experience. This practice is more common among Men who have Sex with Men (MSM) and consists of group sex sessions that could last from hours to days (Maxwell, Shahmanesh, & Gafos, 2019). Chemsex has been traditionally defined as using specific drugs (i.e., methamphetamine MDMA, GHB/GBL, crystal n-methylamphetamine, and 4-methylmethacathinone and ketamine). Nevertheless, the European MSM Internet Survey (EMIS) showed that the use of drugs for sex among MSM could considerably vary across European cities due to the different socio-cultural traditions and habits, various drug legalization policies, and substance availability across the countries (Schmidt et al., 2016). New synthetic cathinones like  $\alpha$ -pyrrolidinophenone ( $\alpha$ -PHP) and the 3,4-methylenedioxy-pyrovalerone (MDPV) are also linked to chemsex practices nowadays (European Drug

Report, 2023). Additionally, other substances, not defined as “chems”, like cocaine, poppers, marijuana, amyl-nitrates, and Erectile Dysfunction Agents (EDA) are reported in many countries as part of recreational drug use for sex contexts (Latini et al., 2019; Strong et al., 2022). The evolving phenomenon of chemsex is a focus of interest in the international scientific scenario because of its relevance in public health. Indeed, recent research calls attention to the association between chemsex and high risk of HIV infection, other sexually transmitted infections (STI) and drug addiction (Tomkins, George, & Kliner, 2019). A large observational study conducted in a pre-pandemic era in Italy (Latini et al., 2019) displays that recreational drugs use for sex seems to be associated with at-risk sexual behaviors (i.e., group sex, condomless sex, online multiple partners searching) that could increase incidence rates of some STI, like syphilis, gonorrhea and viral hepatitis among MSM. Further, according to recent literature reviews, People Living with HIV (PLWH) have a high risk for chemsex behaviors and HIV status seems to play a crucial role in engaging in condomless sex during chemsex practice (Maxwell, et al., 2019). Furthermore, some studies focus on psychological issues in MSM practicing chemsex behaviors; anxiety and depression seem to be important topics among MSM who practice chemsex, combined with psychotic experiences and cognitive impairment (Tomkins, et al., 2019; Bohn et al., 2020). However, despite this current evidence, still few studies exploring characteristics and correlates about mental health among those who practice chemsex (Maxwell, et al., 2019; Field, de Wit, Davoren, O'Reilly, & Den Daas, 2023).

The current study aims to estimate the prevalence, characteristics, and principal correlates of chemsex in MSM at risk for STIs to understand the current changes involved in these conducts. In addition, this survey is intended to screen the psychological vulnerability for anxiety and depression among MSM attending an STIs center in Rome. In this paper, preliminary data from the study collected during the pilot phase was presented.

## 2. Methods

An anonymous self-administered questionnaire was proposed to MSM attendees of the STI/HIV Center of San Gallicano Dermatological Institute in Rome, Italy, between October and November 2023. Inclusion criteria were age at least 18 years old and reading and understanding the Italian language. The questionnaire consisted of nine sections that investigated demographic characteristics, substance use, sexual habits, and STIs history. In addition, the vulnerability for anxiety and depression was investigated in participants using the Italian versions of the Patient Health Questionnaire-2 (PHQ-2) and the Generalized Anxiety Disorder -2 (GAD-2). For this preliminary survey, we used the free Italian versions of both questionnaires can be derived by selecting the first two items of the extended translated versions (PHQ Website, <http://www.phqscreeners.com>). These questionnaires assess the frequency of core depression and anxiety symptoms respectively over the past two weeks (Kroenke, Spitzer, & Williams, 2003; Kroenke, Spitzer, Williams, Monahan, & Lowe, 2007).

Once completed, the participants deposited questionnaires directly in a locked ballot box put outside the consultation room. The study obtained the authorization by the Institutional Ethics Committee.

## 3. Results

From 1st to 30 November 2023, 129 MSM have accepted to fill out the questionnaire and 121 (93.8%) were validated for the data analysis. Eight questionnaires were excluded due to errors in filling out, multiple missing responses, and cancellations. The median age between PLWH and non-PLWH was 45.5 (IQR=40-57) years and 45.0 (IQR=32-50) years, respectively. Fifty-six of 118 (47.5%) MSM tested for HIV, were PLWH. Chemsex was referred to by 25 (20.7%, C.I. 95%: 14.4-28.7) participants; 15 (26.8%, C.I. 95%: 17.0-39.6) PLWH and 10 (16.1%, C.I. 95%: 0.1-27.2) non-PLWH. MSM who have shown scores above the threshold ( $\geq 3$ ) to PHQ-2 were 17 (27.4%) and 15 (28.8%) between PLWH and non-PLWH, respectively. Scores above the threshold to GAD-2 were measured in 28 (45.2%) and 20 (35.7%) PLWH and non-PLWH, respectively. Multistrata-analysis, using HIV status and scores to PHQ-2 and GAD-2, showed an association between being above the threshold to PHQ-2 and chemsex, at the limit of the statistical significance (AOR= 1.65; 95% CI: 0.98-2.78).

## 4. Discussion

This survey aimed to investigate the main characteristics and the prevalence of chemsex-behaviors and drugs use for sex in a clinical sample of MSM also to understand potential changes involved in this widespread scenario. Preliminary findings from the survey suggest that a high proportion of MSM at risk for STIs engaged in chemsex, particularly if PLWH. Our data are consistent with recent reviews of the literature that report a prevalence of MSM engaged in chemsex at 17-27% (Maxwell, et al., 2019). Moreover, in our sample, the most part of chemsexers live with an HIV diagnosis and almost half of PLWH



shown high vulnerability for anxiety. These initial findings confirm what we already know from more studies across Europe. Rosas Cancio-Suárez and colleagues in 2023 show that drug use and chemsex are more frequent among MSM living with HIV in Spain; additionally, Amundsen and colleagues found that in a Netherlands cohort, MSM living with HIV have a three-time higher odds ratio of chemsex engagement (Amundsen, Haugstvedt, Skogen, & Berg, 2022; Rosas, Cancio-Suárez, et al., 2023). The PLWH involvement in chemsex practices is a public health issue due to the impact that this behavior could have on antiretroviral therapy (ART) adherence and immunological parameters control (Strong et al., 2022).

Even though the direction of the association between HIV status and chemsex is still unknown, according to some authors, chemsex and the recreational substances use for sex may be behavioral strategies to relieve anxiety and to cope with the psychological distress due to living with HIV (Tomkins et al., 2019; Strong et al., 2022). In fact, to our knowledge, PLWH are more likely to experience anxiety and depression compared to the general population (Chaudhury, Bakhla, & Saini, 2016). In our sample depression in MSM living with HIV appears to contribute to their involvement in chemsex practices according to previous studies that linked chemsex behaviors with high levels of depression (Maxwell, et al., 2019; Tomkins, et al., 2019; Field, et al., 2023).

## 5. Conclusions

Although the need to extend our sample size to make results more statistically relevant, the preliminary trends observed in this study, highlight the importance of psychological screening in MSM with a special focus on PLWH. Moreover, it seems to be crucial to collect routinely more information about sexual habits, sexual drugs use and chemsex behaviors from MSM attendees STIs centers. Further studies would investigate the intricate interconnection between HIV status, mental health, and chemsex to understand the mechanisms underlying high-risk behaviors and plan public health intervention programs to improve mental health in this population.

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## GREATER POSITIVE FACIAL RESPONSES TO VIOLENCE IN HIGHLY-SEXIST PERPETRATORS: IMPACT ON IPVAW PREVALENCE

**Javier Comes-Fayos<sup>1,3</sup>, Isabel Rodríguez Moreno<sup>1</sup>, Sara Bressanutti<sup>1</sup>,  
Carolina Sarrate Costa<sup>1</sup>, Marisol Lila Murillo<sup>2</sup>, Ángel Romero-Martínez<sup>1</sup>,  
& Luis Moya-Albiol<sup>1</sup>**

<sup>1</sup>*Department of Psychobiology, University of Valencia (Spain)*

<sup>2</sup>*Department of Social Psychology, University of Valencia (Spain)*

<sup>3</sup>*Faculty of Health Science, International University of Valencia (Spain)*

### Abstract

Facial expressions have been posited as biologically primed responses to external emotional stimuli. It has been argued that a facial response aligned with the emotions of others would evidence good empathic functioning, predisposing adaptive social interactions. Previous research suggests that intimate partner violence against women (IPVAW) perpetrators display a misaligned expression pattern when facing women suffering (increased happy expressions, reduced sad expressions). However, the influence of significant IPVAW risk factors, such as sexism, on the emotional facial response of IPVAW perpetrators, as well as their impact on IPVAW prevalence, remains unclear. Our primary objective was to examine the emotional facial responses of two groups of IPVAW perpetrators (highly-sexist vs. less-sexist) when witnessing violence against women. Furthermore, we assessed the predictive capacity of their emotional facial response on the IPVAW prevalence. The present study included 55 IPV perpetrators from the IPVAW CONTEXTO program. The Ambivalent Sexism Inventory was employed to classify the offenders based on their sexist attitudes, resulting in two groups: 28 highly-sexist perpetrators and 27 less-sexist perpetrators. For the emotional induction task, two IPVAW scenes were selected from a validated battery of emotion-eliciting videos. Facial recognition was conducted using the 'Noldus FaceReader Software,' capable of detecting Ekman's six basic emotions: sadness, anger, disgust, fear, surprise, and happiness. Finally, prevalence of IPVAW psychological aggression, physical aggression, and severe violence was obtained through the Revised-Conflict Tactic Scale. Independent t-tests were performed to compare the registered facial responses between groups. Additionally, a linear regression model was constructed with emotional facial responses as the independent variables and IPVAW prevalence as the dependent variable. As a result, a greater facial expression of happiness was registered in highly-sexist perpetrators following the IPVAW emotional induction task in comparison to less-sexist perpetrators. Remarkably, a greater facial expression of happiness during the task predicted an increased prevalence of IPVAW physical aggression and severe violence. There was no other significant outcome. Our findings suggest a greater tendency among highly-sexist perpetrators to express positive emotions in response to women's suffering. Furthermore, a happy facial response to IPVAW scenes predicted the prevalence of IPVAW severe violence across all perpetrators. This result holds particular significance, as it implies that maladjusted socio-affective response patterns may stem from hostile cognitive patterns, such as derogatory attitudes towards women. Considering this, IPVAW interventions could benefit from approaches that emphasize addressing both sexism and emotional responses.

**Keywords:** *IPVAW, emotional response, facial expressions, sexism, violence.*

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### 1. Introduction

The affective domain has been recognized as a pivotal factor in Intimate Partner Violence Against Women (IPVAW) and its diverse manifestations. Many IPVAW perpetrators report difficulties in identifying and expressing their own and others' emotions. Notably, these difficulties in emotional processing have been associated with deficiencies in empathy, a deficit that has been linked to misadjusted behavioral regulation (Romero-Martínez et al., 2021). In this regard, the pattern of emotional facial response to the emotions of others could be of special interest for the study of IPVAW, as it plays an important role in social cognition (Hess & Fischer, 2022). Emotional facial expressions are conceived as biologically primed automatic responses to external emotional cues (Ekman, 1993). It has been

postulated that individuals emotionally mimic when engaged in others' emotions, suggesting that facial expressions may reflect individual affective response (Holland et al., 2021). Notably, the literature has suggested that individuals with a higher prevalence of violent behaviors may exhibit reduced emotional mimicry when exposed to others experiencing negative emotions (de Wied et al., 2012). Expanding on this research, Fanti et al. (2017) assessed the emotional facial response pattern among violent individuals using the FaceReader software, a facial coding program that categorizes individuals' facial expressions into six basic emotions. As a result, they observed that violent individuals displayed reduced facial reactions of sadness in response to violent films. These authors linked the restricted display of negative facial responses to a low concern towards the negative feelings of victims. However, to the best of our knowledge, no study has addressed emotional facial expressions in IPVAW perpetrators in the context of witnessing women's suffering. In this regard, the influence of significant risk factors for IPVAW, such as demeaning attitudes toward women (i.e., sexism), on emotional facial processing and IPVAW prevalence remains unclear. Hence, the objective of this study was twofold. First, our primary goal was to examine the emotional facial responses of two groups of IPVAW perpetrators (highly sexist vs. less sexist) when witnessing violence against women. Sexism has been related to reduced empathy towards women suffering (Garaigordobil, 2014). Therefore, we expected highly sexist IPVAW perpetrators to exhibit reduced facial expressions of negative emotions when exposed to IPVAW. Furthermore, we assessed the predictive capacity of their emotional facial response on IPVAW prevalence. We anticipate that maladjusted emotional facial expressions will predict IPVAW prevalence (Fanti et al., 2017).

## 2. Methods

### 2.1. Participants

The sample consisted of 55 IPVAW perpetrators. The Ambivalent Sexism Inventory (Glick & Fiske, 1997) was employed to categorize the offenders based on their sexist attitudes, resulting in two groups: 28 highly sexist perpetrators and 27 less sexist perpetrators. IPVAW perpetrators were recruited from the CONTEXTO Program at the University of Valencia, a community-based intervention program for men convicted of gender-based violence for up to 2 years (suspended under mandatory program attendance). Recruitment was completed before the intervention program. Inclusion criteria for all participants included: having been sentenced for IPVAW, the absence of mental or neurological disorders, and proficiency in both written and spoken Spanish.

### 2.2. Procedure

First, the Revised Conflict Tactics Scale (Straus et al., 1996) was administered to assess the prevalence of IPVAW. Then, the Noldus FaceReader 6.1 software (Noldus Information Technology, 2015) was programmed and calibrated for the online recording of participants' facial expressions. FaceReader 6.1 is a program for facial analysis that can detect the emotional valence and identify Ekman's six basic emotions: sadness, anger, disgust, fear, surprise and happiness. Once calibrated, a Spanish-validated battery of emotion-inducing videos (Fernández-Megías et al., 2011) was employed for the empathic induction task. From this battery, two IPVAW-focused clips were selected based on their high negative affect. Prior to visualization, participants were instructed to actively empathize with the victim in each scene. After visualization, participants had to relax for one minute before viewing the next scene.

### 2.3. Data analysis

*T*-tests were performed to assess group differences between highly-sexist perpetrators and less-sexist perpetrators for registered emotional facial expressions. Additionally, a linear regression model was constructed using the total scores of the registered facial expressions as independent variables and the CTS-2 as the dependent variable. Data analyses were conducted using IBM SPSS Statistics for Windows, version 28.0 (Armonk, NY). Values of  $p < .05$  were considered statistically significant.

## 3. Results

The analysis performed for emotional facial expressions revealed that highly-sexist IPVAW perpetrators reported higher registration of happy facial expression compared to less-sexist IPVAW perpetrators (highly-sexist IPVAW perpetrators,  $M = 1.64$ ,  $SE = 2.66$ ; less-sexist IPVAW perpetrators,  $M = 0.13$ ,  $SE = 0.67$ ;  $t(30.6) = -2.903$ ,  $p = .007$ ). No other significant difference between groups was found.

Regarding the regression analysis, the registration of happy facial expression predicted the 11.8% of the variance for physical IPVAW prevalence ( $adj R^2 = .079$ ,  $F(1, 54) = 5.626$ ,  $p = .021$ ,  $\beta = .310$ ). Additionally, the registration happy facial expression also predicted 11.8% of the variance for severe IPVAW violence ( $adj R^2 = .060$ ,  $F(1, 54) = 4.422$ ,  $p = .040$ ,  $\beta = .277$ ). No other significant model was found.

## 4. Discussion

Current research indicates that challenges in emotional processing have significant implications for IPVAW behaviors. In this context, it has been demonstrated that cognitive patterns favorable to violence, such as sexism, influence the emotional processing of individuals. Accordingly, our results reveal that highly-sexist IPVAW perpetrators also exhibited a distinct facial emotion response pattern compared to a less-sexist IPVAW perpetrators when observing IPVAW. Specifically, those perpetrators who scored high in sexism were characterized by a greater display of happiness in their facial expressions when witnessing IPVAW victims. Furthermore, a higher facial display of happiness predicted a higher prevalence of physical and severe violence in this population.

According to Holland et al., (2021), individuals engage in automatic facial mimicry when observing the expressions of others, and adjusted facial mimicry is positively associated with affective empathy. Nevertheless, sexism has consistently predicted negative evaluations of women, resulting in a maladjusted emotional response to them (Bosson et al., 2010). Indeed, current findings have exposed that individuals integrating hostile sexism score low in the global capacity for empathy, both cognitive and affective empathy (Garaigordobil, 2014). In conclusion, our results suggest that highly-sexist IPVAW perpetrators display a misaligned facial expression pattern (i.e., a higher prevalence of happiness facial expression) when viewing women suffering, and it is related to IPVAW prevalence. Considering this, the variation in their facial expressions could be relevant when adapting interventions. For example, IPVAW perpetrators could benefit from interventions that emphasize emotional processing, focusing on adjusting their cognitive schemas toward women. Ultimately, enhancing socioaffective functioning may serve as a mechanism to reduce IPVAW.

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## EXPRESSIVE WRITING AND MEDITATION ON TEST ANXIETY AND ACADEMIC PERFORMANCE

Hung Nguyen

*Division of Social Sciences, Duke Kunshan University (China)*

### Abstract

Test anxiety, the emotional fear and wariness over performance that often occurs in specific evaluative situations, causes students to underperform relative to their actual ability, and hence interferes with the test's main objective of assessing students' academic progress and understanding level.

One intervention that has been documented to reduce general anxiety, depression symptoms and ruminative thoughts is expressive writing, a paradigm whereby writers freely write about their feelings and experiences associated with an undesirable situation. Experimented in classroom settings, a short period of expressive writing could help students reduce anxiety level and put up a better performance. However, in recent literature, effects of expressive writing are being challenged as it may not produce the desired effect size, and its impacts on students' performance and anxiety level tend to vary across different population. Therefore, the present study aims to account for underexplored individual characteristics, namely emotional expressiveness and suppression, in a real-stake testing conditions, while comparing expressive writing to another popular emotional regulation intervention: meditation.

Adopting a within-subjects design, the study finds preliminary results that students' ambivalence over emotional expressiveness and emotional suppression are positively correlated with test anxiety level. Treatment effects, although not significant, showed that participants felt less emotionally aroused after doing expressive writing, while their worry levels decreased after a breathing exercise. Moving forward, we aim to replicate the current design and conduct an online survey experiment to further investigate the effectiveness of meditation and expressive writing and the role of emotional suppression on test anxiety.

**Keywords:** *Test anxiety, expressive writing, emotional regulation, meditation, clinical psychology.*

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### 1. Background

Test, quizzes and exams are ubiquitous in education settings nowadays. They account for a significant part of students' education journey, serving as a means of assessing students' knowledge and progress. However, in an increasingly competitive environment where grades can give an advantage, many students find themselves become stressful, anxious and experience "test anxiety" before and during exams, which correlates with lower standardized test score (e.g., SAT, GRE), school GPAs and other educational performance outcomes (e.g., Cassidy & Johnson, 2002; Chapell et al., 2005).

Unlike general anxiety which typically refers to an unpleasant emotional state without a specific context/object or trigger, test anxiety involves the emotional fear, failure, and wariness over performance that often occurs in specific evaluative situations (Zeidner, 2007). In the present study, we study anxiety as constructed by emotionality and worry: While the former refers to the heightened physiological arousal or emotional activation, the latter concerns participants' cognitive evaluation of performance, failure and anxiety and lower self-confidence level (Zeidner, 2007).

Expressive writing is a paradigm that encourages writers to freely write about their concerns, feelings or experiences associated with an undesirable situation in a specific amount of time (Pennebaker, 1997). The intervention has been documented to have positive impacts on both physiological and mental health, such as reducing general anxiety, depression symptoms and ruminative thoughts (e.g. Chung & Pennebaker, 2008). In classroom settings, even one short period of expressive writing before taking tests/quizzes can help students reduce their test anxiety level and hence produce better performance (e.g. Park et al., 2014; Ramirez & Beilock, 2011). The effects are often attributed to two different pathways of mechanisms: First, expressive writing helps writers get habituated to ruminative thoughts, unpack the stressful experiences and change their interpretation of the feelings; second, writers are allowed to offload their worries onto papers, hence saving cognitive load when doing things that take lots of cognitive resources like doing exams (e.g. Pennebaker, 1997).

However, results in the literature are mixed. As Myers et al. (2021) and Travagin et al. (2015) point out, expressive writing does not produce the desired effect size; its impacts on students' performance and anxiety level tend to vary. They call for more research on who is going to benefit the most from expressive writing, and the present study responds to that call.

The purpose of the current study is threefold. It first aims to replicate and test the impact of expressive writing in a real stake testing condition. Second, we account for underexplored individual characteristics, namely emotional expressiveness and emotional suppression in Asian population. It is recorded that Asian students oftentimes reported higher level of test anxiety as they suppress negative emotions to greater degree and hence are more ambivalent over their feelings than other ethnic groups (e.g. Lu & Stanton, 2010). Emotional disclosure intervention like expressive writing therefore may benefit this group students more. Third, we also aim to compare expressive writing to meditation, a popular acceptance-based emotional regulation method, to make recommendations for brief interventions in educational contexts. Mindfulness meditation, defined as attending to and observing one's present moment experience in a nonjudgmental and non-elaborative way, has been shown to calm down the mind, increase sustained attention and decrease mind-wandering: A brief 5-minute meditation session can help students focus attention, resolve jumbled thought, reduce anxiety level and ultimately improve their academic performance (e.g. Ramsburg & Youmans, 2014). Comparing the effects of these interventions can provide insights into the effectiveness of emotional regulation versus emotional disclosure interventions in educational settings.

## 2. Methods

### 2.1. Participants

50 undergraduate students, who were enrolled in an introductory psychology course at Duke Kunshan University voluntarily participated in the study.

### 2.2. Procedures

The instructor first came to class and introduced the research project. After the brief introduction, students who wished to participate proceeded to complete an online consent form and complete baseline measures, including Emotional Suppression scale (only Expressive Suppression facet) (Gross & John, 2003), ambivalence over emotional expressiveness (AEQ) (King & Emmons, 1990), Grit-S (Duckworth & Quinn, 2009), and Test Anxiety Inventory short scale (Taylor & Deane, 2002).

In subsequent weeks, participants were asked to complete a short intervention before taking the quiz. The study followed an A-B-A-C design: participants took an extra 5 minutes to review the quiz content in week 2 and 4 while engaging in the expressive writing exercise in week 3 and the breathing exercise in week 5. After the test, participants were asked to rate their anxiety level on both emotionality and worry sub-component (Brady et al., 2018), and their self-perceived difficulty level of the quiz.

## 3. Results

While ethnicity has no clear impacts, male ( $M = 2.97$ ,  $SD = .60$ ) has a lower average score of ambivalence over emotional expressiveness compared to female ( $M = 3.47$ ,  $SD = .65$ ),  $t(49) = -2.73$ ,  $p = .009$ ,  $d = -.80$ . Emotional suppression is positively correlated with test anxiety level,  $r(48) = .27$ ,  $p = .03$ . Similarly, AEQ positively correlated with average anxiety,  $r(48) = .38$ ,  $p = .003$ . Grit registered a negative correlation with test anxiety,  $r(47) = -.28$ ,  $p = .026$ .

Though not statistically significant, participants' emotionality lowered after doing expressive writing ( $M = 3.96$ ,  $SD = 1.37$ ) compared to first control ( $M = 4.21$ ,  $SD = 1.53$ ) and second control ( $M = 4.19$ ,  $SD = 1.14$ ),  $t(23) = 0.54$ ,  $p = .29$  and  $t(23) = 0.52$ ,  $p = .30$ . The emotionality however slightly increased after doing meditation ( $M = 4.25$ ,  $SD = 1.62$ ),  $t(23) = -0.09$ ,  $p = .53$  and  $t(23) = -0.46$ ,  $p = .68$ . In regards to wariness, despite not statistically significant, average level of wariness after doing meditation ( $M = 3.88$ ,  $SD = 0.79$ ) was lower than that compared to control 1 ( $M = 4.10$ ,  $SD = .70$ ),  $t(23) = 0.97$ ,  $p = .17$  and control 2 ( $M = 3.96$ ,  $SD = 0.71$ ),  $t(23) = 0.42$ ,  $p = .34$ , while higher after doing expressive writing ( $M = 4.23$ ,  $SD = .55$ ),  $t(23) = -0.68$ ,  $p = .75$  and  $t(23) = -0.50$ ,  $p = .69$ .

In further moderation analysis, test difficulty level reports a significant effect on emotionality,  $b = 0.82$ ,  $z = 5.59$ ,  $p < .001$  and level of wariness,  $b = 0.86$ ,  $z = 5.56$ ,  $p < .001$ . Participants' baseline test anxiety level also has a moderating effect on participants' emotionality,  $b = 0.23$ ,  $z = 2.31$ ,  $p = .02$  and wariness,  $b = 0.27$ ,  $z = 2.53$ ,  $p = .01$ . Meanwhile, both emotional suppression (emotionality,  $b = 0.13$ ,  $z = 1.08$ ,  $p = .28$ ; wariness,  $b = 0.07$ ,  $z = 1.35$ ,  $p = .18$ ) and AEQ (emotionality,  $b = 0.13$ ,  $z = 0.58$ ,  $p = .57$ ; wariness,  $b = 0.03$ ,  $z = 0.23$ ,  $p = .82$ ) do not significantly moderate individuals' test anxiety level.

## 4. Discussion

Although not conclusive, the finding suggests that emotional suppression contributes to a heightened level of test anxiety. It is speculated that individuals who suppress their emotions more are less likely to process their internal ruminative thoughts and maintain their sense of authenticity (John & Gross, 2003), from which arise a higher level of emotionality and wariness. This is consistent with previous findings that higher level of emotional suppression often results in anxiety and negative

emotions, especially in emotionally provocative and evaluative contexts (e.g. Srivastava et al., 2009). Similarly, AEQ also predicted the level of test anxiety: those who have internal conflicts in expressing their personal feelings in fear of negative consequences tend to feel more anxious and worry over their performance. Lu & Stanton (2010) came up with similar findings, suggesting that individuals having high emotional suppression and/or AEQ would benefit from emotional disclosure intervention.

The study however did not find statistically significant treatment effects. Neither expressive writing nor meditation reduced students' feelings of test anxiety. Although the results did not align with our speculation, they were consistent with recent studies that also fail to replicate the positive effects of the paradigm (e.g. Myers et al., 2021). Further research could delve deeper into the differences between emotional disclosure and emotional regulation interventions to further determine in which contexts a certain intervention might work better than another.

Regarding limitations, the current sample size provided insufficient statistical power. Besides, the study only asked participants to rate their test anxiety level retrospectively when they already finished the exam. This post-intervention questionnaire may not accurately reflect students' feelings after the interventions or during the test period. Self-report is also unreliable when assessing students' emotional and physiological responses in an evaluative context. In the next phase of the study, we will be recruiting more participants to enlarge our sample size, so that treatment effects could be captured more accurately. We will also be asking participants to report their feelings of anxiety at different time periods: before the intervention, after the intervention and after the quiz exam. Assessing students' experience at multiple points in time will allow us to conduct a further pre-post analysis of their feelings.

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## DESIGN AND DEVELOPMENT OF A SPEECH-BASED DIARY FOR DEPRESSION RELAPSE PREVENTION

**Kyra Kannen<sup>1</sup>, Zohre Azimi<sup>1</sup>, Muhammad Saif-Ur-Rehman<sup>1</sup>, Sonja Dana Roelen<sup>2</sup>, Sebastian Schnieder<sup>2</sup>, Steffen Holsteg<sup>3</sup>, André Karger<sup>3</sup>, Philip Mildner<sup>4</sup>, Jens Piesk<sup>4</sup>, & Jarek Krajewski<sup>1</sup>**

<sup>1</sup>*Institute of experimental Psychophysiology (Germany)*

<sup>2</sup>*University of Applied Sciences for Media Communication and Business Cologne (Germany)*

<sup>3</sup>*Clinical Institute of Psychosomatic Medicine and Psychotherapy, Heinrich-Heine-University Düsseldorf (Germany)*

<sup>4</sup>*Nuromedia GmbH (Germany)*

### Abstract

**Background.** Relapse is a significant risk among people treated for depression, with approximately 50% of patients experiencing a recurrence after their initial depressive episode. This risk increases with subsequent episodes. This alarming statistic underscores the urgent need for innovative, reliable tools to identify individuals at high risk of relapse for timely intervention. Leveraging the capabilities of machine learning to analyze speech patterns offers a novel pathway for early detection of changes in depression status to prevent relapse.

**Methods.** We trained two machine learning models on speech data from patients with depression. The first, a Depression Detection System (DDS), is trained on speech data from patients with four levels of depression, as assessed by the Beck Depression Inventory (BDI) score (from non-depressed to severely depressed). The second, Speech Emotion Recognition (SER) model, employs deep learning techniques to identify seven basic emotions. Additionally, we developed a speech-based diary, where patients reflect on their week and address topics related to their condition. The recorded diary entries provide a rich dataset for our models to analyze depression-related voice parameters. This approach offers the opportunity to monitor changes in patients' symptoms and enables professionals to take timely action and prevent relapse.

**Results.** The performance of models achieved a satisfactory level, as measured by the *F1*-score (DDS: 81% averaged across four classes, and SER: 62% averaged across seven emotion classes). These results highlight the potential efficacy of our approach in the nuanced task of speech-based emotion and depression detection.

**Conclusion.** This innovative approach may serve as a reliable tool for relapse prevention in depression. Empowering both therapists and patients with valuable insights from weekly speech-based self-reflection, this method holds potential for early intervention. As a next step, clinical trials will be necessary to validate the effectiveness of this speech-based diary in preventing depression relapse.

**Keywords:** *Depression, relapse prevention, acoustic speech-analysis, machine learning, speech emotion recognition.*

### 1. Introduction

Depression, affecting approximately 6.38% in Europe (Arias-de la Torre et al., 2021), poses a significant challenge due to its high recurrence rate post-recovery, escalating up to 85% within fifteen years (Kanai et al., 2003; Melartin et al., 2004, Mueller et al., 1999). Key predictors of relapse include the number of prior episodes and subclinical residual symptoms (Harveldt et al., 2010). Beyond individual suffering, depression burdens society, notably increasing treatment costs by approximately 158% (König et al., 2019). Despite the need for professional therapy after relapse, the limited therapy slots do not allow access to proper treatment of such patients (Moitra et al., 2022). To address this gap, developing new monitoring tools for early detection of relapse and symptoms onset is essential. This study explores the use of machine learning for early detection of depression status, by analyzing speech patterns. Depression can affect speech, resulting in changes such as decreased speech volume, a slower speaking rate, or increased jitter (Sahu & Espy-Wilson, 2014; Silva et al., 2021). Similarly, emotions can influence a person's speech



production, leading to changes in prosody, spectral features, and voice quality (Akçay & Oğuz, 2020). Thus, we aimed to develop a speech-based diary and two machine learning models to assess depression severity and emotional states, offering a novel pathway for timely intervention and relapse prevention.

## 2. Methods

### 2.1. Design of a speech-based diary

The design process for a speech-based diary began with the development of a set of guided questions to explore the emotional responses and coping mechanisms of depressive patients. It is assumed that individuals with depression use maladaptive coping strategies, such as avoidance or rumination, while non-depressed individuals use adaptive methods like problem-solving and seeking social support (Joormann & Gotlib, 2010). In collaboration with mental health professionals and treatment providers, guided questions were developed that reflect emotional regulation and coping.

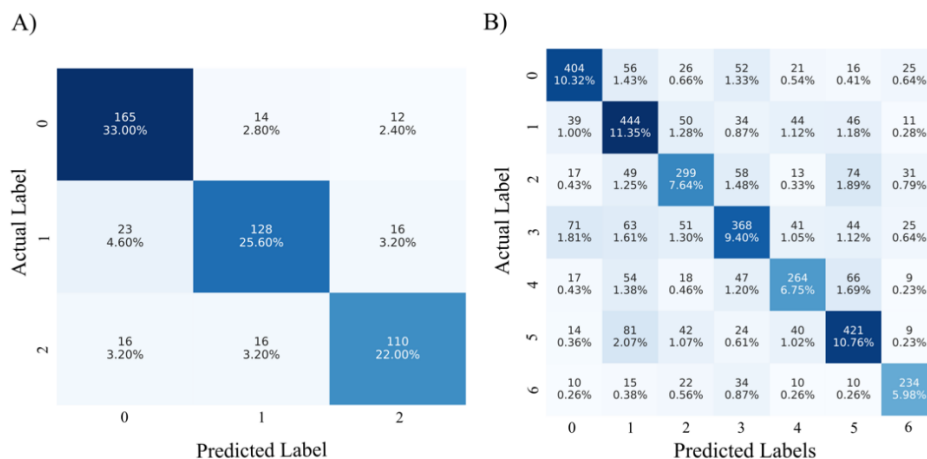
### 2.2. Integrating machine learning algorithms

Leveraging the capabilities of machine learning to analyze speech patterns offers a novel pathway for early detection of changes in depression status. To analyze the data recorded from the speech-based diary, we have developed two speech models. The first model, DDS model, employs an ensemble of machine learning classifiers – Support Vector Machine (SVM), K-Nearest Neighbors (K-NN), and Random Forest (RF) – to analyze audio features including Linear Predictive Coefficients (LPC), Fundamental Frequency, and Zero and Mean Crossing Rate. The DDS leverages OpenSmile (Eyben et al., 2010) for feature extraction and operates in two stages: initially differentiating *normal* from *depressed* states, then further classifying *depressed* signals into *mild*, *moderate*, or *severe*. The clinical dataset used for training and evaluation of the model was collected during a short story reading task and a free speech task and involves 7,250 audio data annotated with BDI (Beck et al., 2013) scores, which were assigned by expert psychiatrists. The second, SER model, utilizes deep learning to identify the emotional content of speech data. Trained on a diverse database of 25,596 emotional speech samples (acted/non-acted) in four different languages (English, German, Italian, and Japanese), SER can categorize speech data into one of the seven basic emotion classes (anger, disgust, fear, happiness, neutral, sadness, and surprise). The model is designed with a combined architecture of convolutional neural network and Long-Short-Term-Memory. Using these techniques, the model analyzes audio signals' Mel spectrogram and predicts the likely emotion class.

## 3. Results

Our evaluation shows that the models performed well in their respective tasks. The SER model attained an average  $F_1$ -score of 62% across seven emotion categories, which indicates a good capacity for emotion classification from speech. On the other hand, the DDS model achieved an impressive  $F_1$ -score of 81% in discerning among four levels of depression severity. These outcomes underscore the utility of our models in identifying crucial speech characteristics associated with emotional states and depression severity.

Figure 1. Confusion matrices for the (A) DDS and (B) SER models. Each matrix shows the number and percentage of samples from the test set that were correctly classified (diagonal) and misclassified (off-diagonal) by the models. The percentage is calculated as the number of samples in each category divided by the total number of samples. Darker shades represent higher percentages, illustrating the model's predictive accuracy for each class.



#### 4. Discussion, outlook and conclusion

Given the high relapse rate of people with depression, we trained two models (SER and DDS) to monitor changes in symptoms. The robust performance of the models indicates their ability to detect fluctuations in emotion and depression levels by analyzing specific voice parameters in audio recordings, indicating the potential for continuous symptom monitoring to facilitate early relapse detection. As a next step, we will obtain audio data from a clinical trial using the developed diary to evaluate the model's performance on novel test data and to fine-tune the models. Additionally, we are assessing the diary's usability and user experience within the framework of human-centered design to determine its suitability for constant symptom monitoring.

In summary, our models can effectively classify depression levels and emotion from audio data, showing promise in preventing depression relapse. This approach offers valuable insights for a proactive intervention through weekly speech-based introspection, facilitating early relapse detection. However, its efficacy and reliability have yet to be evaluated in clinical trials.

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# THE PREVALENCE OF ADULT ADHD AND GENERALIZED ANXIETY DISORDER FOLLOWING THE COVID-19 PANDEMIC IN A CLINICAL POPULATION

Cheyann Labadie<sup>1</sup>, Qinying (Kim) Wang<sup>2</sup>, & Rubaba Ansari<sup>1,2</sup>

<sup>1</sup> Staff Clinician -The ADHD Clinic, Toronto, ON (Canada)

<sup>2</sup> The University of Toronto – Faculty of Social Work (Canada)

## Abstract

ADHD is often comorbid with a range of other mental health disorders including anxiety-related conditions. Many clinical findings have reported increased rates in both ADHD and GAD diagnoses following the COVID-19 pandemic. The purpose of the present study was to examine a large Canadian clinical sample of adults with ADHD to explore the co-occurrence of anxiety disorders following the COVID-19 pandemic.

**Keywords:** Anxiety, ADHD, COVID, prevalence, adult.

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## 1. Introduction

Attention Deficit and Hyperactivity Disorder (ADHD) is characterized by diminished attention, disorganization, hyperactivity, and impulsivity. ADHD manifests in three primary presentations: inattentive, hyperactive-impulsive, and a combination thereof (Diagnostic and Statistical Manual of Mental Disorders, 5th edition-TR, 2022; National Comorbidity Survey, 2007). Often, ADHD coincides with other mental health disorders, notably anxiety-related conditions. ADHD is prevalent in Canada, affecting 4-6% of adults (CADDAC, 2023). Generalized Anxiety Disorder (GAD) is classified as excessive, persistent, and irrational worry concerning everyday matters (Munir, 2022). Both ADHD and GAD have multifaceted etiologies, influenced by genetic and environmental factors (Eroglu & Lus, 2022). Individuals with anxiety disorders, such as GAD, face double the risk of meeting full criteria for ADHD compared to those without anxiety disorders (Alarachi, 2024).

Comorbid ADHD and anxiety typically develop through two pathways: cognitive impairments leading to heightened anxiety or symptoms arising from elevated levels of anxiousness resulting in increased cognitive load and inattention (Alarachi, 2024). This complex cascade of effects indicates a significant rise in anxiety symptoms 12 months after the onset of the COVID-19 pandemic. This increase in anxiety symptoms has been particularly pronounced among individuals with ADHD, with studies reporting a doubling of anxiety prevalence from 21% pre-pandemic to 42% during the pandemic (Shakeshaft et al., 2023). The overlap in symptoms, such as restlessness and impaired attention (Alarachi et al., 2024; Pallanti & Salerno), complicates diagnosis and treatment, especially as the pandemic heightened mental health issues, including an increased rate of ADHD-related healthcare visits (Butt et al., 2023).

## 2. Methods

The study sample comprises 209 adults (ages 18-55) clinically referred and diagnosed with ADHD at a large metropolitan ADHD program over a 1-year period following the COVID-19 pandemic (2020-2022). Participants completed the Adult ADHD Self-Report Scale (ASRS) and underwent an extensive 2.5-hour DSM-5-TR-based structured diagnostic interview conducted by both staff clinicians and team psychiatrists. Additionally, patients were asked to complete the Beck Anxiety Inventory (BAI) as part of the routine screening procedure for anxiety. All diagnoses and treatment recommendations were made by a team psychiatrist.

### 3. Results

In our clinical sample of ADHD patients ( $n=209$ ), 76 patients (36.3%) reported moderate to high anxiety using the Beck Anxiety Inventory (BAI) and met the clinical criteria for a formal diagnosis of Generalized Anxiety Disorder in addition to the ADHD diagnosis, including both Combined Presentation and Predominantly Inattentive Presentation.

### 4. Discussion

Our study reveals a 36.3% comorbidity rate of GAD in adults with ADHD, underscoring the complex interplay between these conditions and highlighting the exacerbated challenges during the COVID-19 pandemic. Echoing Nigg et al. (2004) and Hall (2023), we find that ADHD and GAD comorbidity often stems from shared executive function deficits, with COVID-19 amplifying these challenges (Gouin et al., 2023; Shakeshaft et al., 2023). The pandemic has significantly impacted mental health, with a notable increase in anxiety symptoms among individuals with ADHD, reflecting a broader trend of elevated mental health challenges during this period. Our findings align with those reported by Hall (2023) and further emphasized by Gouin et al. (2023), which shed light on the mechanisms by which the pandemic has aggravated mental health issues. Gouin et al. (2023) elucidated that the heightened anxiety seen during the pandemic can be attributed to various stressors, including prolonged social isolation, economic uncertainties, etc. These stressors exacerbate the already present challenges in individuals with ADHD and GAD by amplifying the executive function deficits that underlie both conditions.

Screening for both conditions is crucial, given their symptomatic similarities and the significant impact on life outcomes (Hartman et al., 2023). Our findings advocate for early, comprehensive care strategies, emphasizing the pandemic's role in increasing mental health service demands and the essential nature of targeted treatment and support for those affected by ADHD and GAD comorbidity. Moreover, Alarachi et al. (2024) and Connolly et al. (2023) highlighted the complexity of diagnosing ADHD in the presence of anxiety or related disorders, pointing to the potential for poor clinical outcomes if ADHD remains undetected. This complexity is compounded by the interrelated nature of these disorders, where symptoms of one can exacerbate the other, forming a negative feedback loop that worsens symptom presentation over time (Connolly et al., 2023).

### 5. Limitations

It is important to consider possible limitations of our study such as the study's focus on a clinical population, which may not fully represent the broader population of adults with ADHD and GAD. Clinical data from patients who are referred to specialty programs may differ significantly from the general population in terms of demographic characteristics, health status, and other variables (Collet, 2000). Thus, our findings might not be generalizable to all adults with ADHD and GAD.

### 6. Conclusions

Our study highlights the critical interplay between ADHD and GAD, within the context of the heightened mental health challenges following the COVID-19 pandemic. The findings emphasize the need for clinicians to adopt a holistic approach in the diagnostic process, considering the potential comorbidity of these conditions to ensure comprehensive patient care. The significance of our research lies in its contribution to the ongoing dialogue on mental health care strategies, particularly in response to global crises, such as COVID-19 Pandemic, which may exacerbate existing conditions like ADHD and GAD. Identifying and understanding the clinical complexities involved in the comorbidity of these disorders is crucial for the development of effective treatment plans and patient care strategies. Future research projects within our programs will focus on broadening the scope of our findings to include diverse populations and settings, enhancing the generalizability and applicability of our work. By doing so, we hope to contribute to a more nuanced understanding of ADHD and GAD comorbidity and improve treatment outcomes for those affected.

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# UNLOCKING CREATIVE PROBLEM-SOLVING WITH ARTIFICIAL INTELLIGENCE

**Jarosław Orzechowski, & Daria Kamińska**

*SWPS University, Wrocław Faculty of Psychology (Poland)*

## Abstract

Artificial Intelligence (AI) is increasingly used to facilitate creativity. Zoddy is an AI-assisted platform designed to help users generate innovative ideas and collaborate on creative projects. It offers a suite of tools that make creative processes much more efficient. For individuals, Zoddy makes it easier to come up with creative ideas and collaborate with others. For businesses, Zoddy can provide a competitive edge as it can help them to generate innovative ideas and collaborate on projects, saving time and money. We will present a case study of how to use Zoddy for business solutions. A problem-solving approach is taken that demonstrates how to move from problem identification to planning the implementation of developed solutions. Clearly, AI technologies can enhance human creativity and innovation. However, we also point out that this can have both positive and negative effects on the development of humanity.

**Keywords:** *Creative thinking, Artificial Intelligence, innovation.*

## 1. Artificial Intelligence and creative problem-solving

Creativity is essential in many areas, from art and design to business strategies and problem-solving. Recent advances in AI can provide tools that drive creativity, improving problem identification and solution generation (Amabile, 2020; Ali Elfa & Dawood, 2023; Esling & Devis, 2020).

AI-powered tools for ideation and brainstorming transform the way individuals and organizations approach creative problem-solving. AI's learning algorithms and data assessment capabilities enhance innovation by providing contextual insights and fresh perspectives for complex problems. For instance, Generative Pre-trained Transformers demonstrate AI's capability to stimulate human-like text generation that can inspire a flow of innovative ideas in brainstorming sessions (Zhu & Luo, 2021). AI reduces cognitive load by processing a vast amount of information efficiently. It weaves structured ideation paths from unstructured data collection, allowing for quicker decision-making (Gandhi et al., 2023).

AI-enhanced tools make the brainstorming process more time-efficient and can help to remove cognitive constraints, thus enabling a greater flow of new and original ideas (Haefner et al., 2021). AI tools like idea generators use semantic networks to facilitate the spread of activation of concepts in memory. By connecting different knowledge areas, these generators feed users with prompts that can lead to novel ideas quickly (Beaty et al., 2014). Moreover, AI can eliminate psychological hindrances such as social loafing, evaluation apprehension and production blocking, frequently encountered during brainstorming sessions. There is less pressure to conform, which leads to a greater diversity in the ideas produced (Rosenberg, 2015). AI helps users evolve their ideas by iterating and combining them on the basis of selected criteria (Chen et al., 2019). Research also suggests that using 'Multi-Criteria Decision Making' methods with AI technologies helps rank generated ideas according to predefined criteria, like novelty or feasibility, thereby saving considerable deliberation time (Ali et al., 2023).

## 2. The Zoddy platform, supported by Artificial Intelligence

Zoddy is an AI-based platform and suite of tools designed to drive creativity. Zoddy's functions are based on advanced algorithms grounded in Large Language Model principles (Huang & Rust, 2021). The application (now in the prototype phase) propels creative ideas and assist users throughout the collaborative creative process. The AI component of Zoddy is designed to offer insights and alternatives, thereby augmenting the creative capabilities of its users. It guides thinking by applying the Creative Problem Solving model (Parnes, 1967) to suggest subsequent steps in the creative process.

For individuals, Zoddy provides much-needed structure while spurring innovative thought. It empowers users by mitigating common challenges – from overcoming creative blocks to synthesizing collective ideas effectively – thereby encouraging productivity and idea execution.

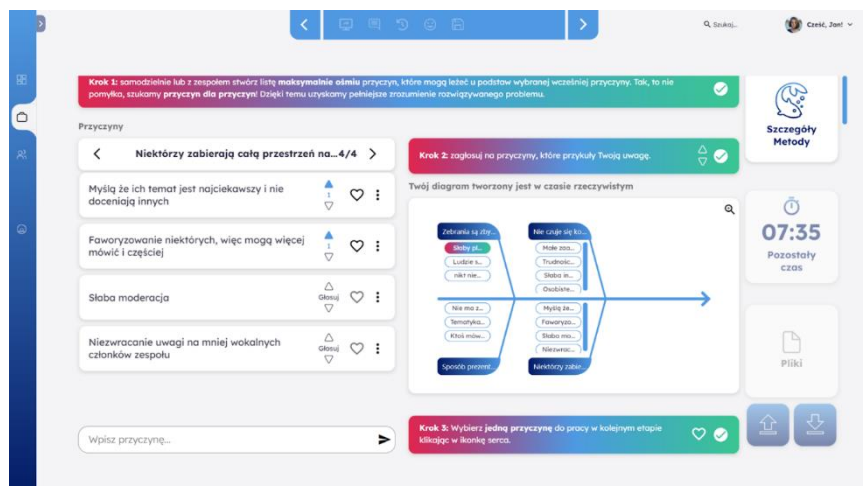
When it comes to business innovation processes, Zoddy can give organizations a competitive edge by means of swift ideation capabilities and efficient project collaboration. Using the features offered by Zoddy’s platform, businesses could benefit from saved time and costs associated with traditional brainstorming methods, all while boosting their innovative output.

Zoddy incorporates the aforementioned principles in order to help individual creatives or corporate teams bypass the common roadblocks that are often encountered in creative collaboration. There is already evidence showing how organizations that implement such technologies can improve efficiency while boosting their innovativeness (Füller et al., 2022).

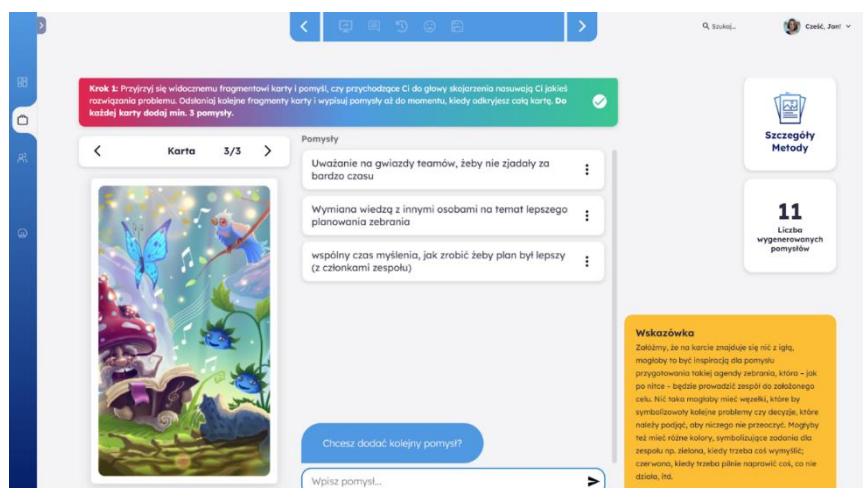
### 3. Case study – utilizing Zoddy for innovative business solutions

A case study demonstrating the practical application of Zoddy reveals its utility as an intelligent problem-solver within a business context. The creative process addresses the problem of *how to increase the effectiveness of team meetings?* Zoddy uses Basadur’s Simplex model (1999), which is structured as follows:

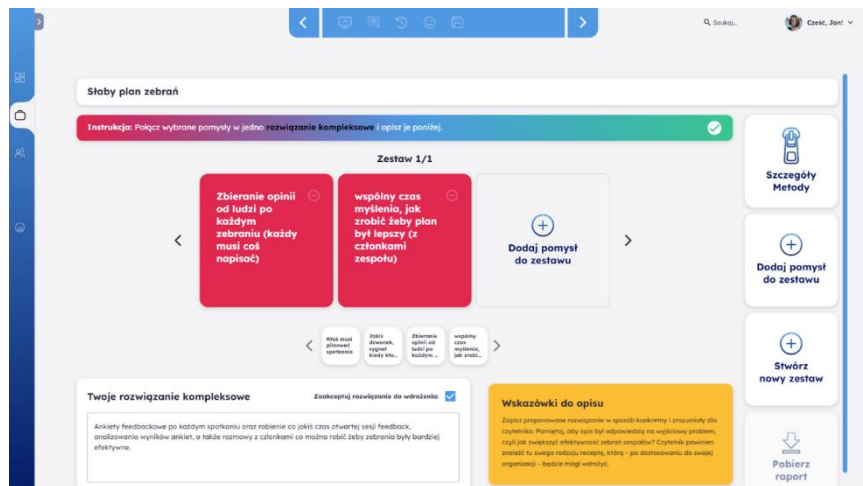
(1) the first phase involves problem-finding (identifying the challenge), fact-finding (accumulating relevant information related to the identified problem), and problem-definition (narrowing down to the most promising problem). The main method used in this phase is the Ishikawa Fish Diagram.



(2) the second phase is problem-solving, which includes idea-finding (generating numerous solutions), evaluation and selection (applying judgment criteria to assess potential solutions and determine which should be implemented). In this case, the Superposition technique is used to find ideas.



The Zipper technique is used to evaluate and select the problem-solution.



(3) the third phase is solution implementation, which includes action-planning (developing specific actions for the implementation of previously generated solutions) and gaining acceptance (overcoming resistance from others to the proposed changes). Here, the Implementation Planning technique is used.

#### 4. Summary

Using AI in creative problem-solving, we can fundamentally transform the way we approach complex challenges. AI is poised to become an invaluable partner in unlocking unprecedented levels of ingenuity across various industries. However, this has certain ethical (e.g. a bias in AI algorithms, privacy and data protection, transparency and accountability) and developmental implications. The pros and cons of AI's impact on humanity are a reminder of this complex relationship between machines and human progress.

Platforms like Zoddy demonstrate how intelligently used technology can propel creative problem-solving through easy collaboration on projects amongst individuals and organizations while saving time and money. They stimulate divergent thinking and amplify creative outputs by minimizing the roadblocks to creativity. As such technologies enter our lives, we need to have ongoing discussions about policies safeguarding individual rights while embracing tech-enabled progress.

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*Disclaimer:* This paper is an overview and does not represent a specific endorsement or promotion of any products mentioned. The Zoddy application is currently a concept that uses AI in an innovative and ethical way to support humans in creative problem solving.



## **SUBJECTS THAT ADDRESS CLIMATE CHANGE AND STUDENTS' KNOWLEDGE: MAPPING PORTUGUESE MIDDLE AND HIGH SCHOOLERS' PERCEPTIONS**

**Marcelo Félix, Sara Miranda, Juliana Martins, & Jennifer Cunha**  
*Escola de Psicologia, Universidade do Minho (Portugal)*

### **Abstract**

Studies have focused on students' perceptions of the importance of school for their climate change (CC) learning, but there are still gaps concerning students' perceptions of which subjects address CC. This is particularly relevant in countries where the approach to including this topic is cross-curricular, as in Portugal. Therefore, this study aims to map the subject areas where Portuguese students have learned about CC. Additionally, it intends to analyze the relationship between the reported frequency of classes addressing CC and perceived CC knowledge. The potential differences between school levels are also analyzed. A questionnaire was administered to 582 Portuguese middle and high schoolers, comprising one open-ended question regarding students' subject areas and a four-item Likert scale on CC subjective knowledge. Frequency analysis, Mann-Whitney U tests for paired samples, and Spearman correlation tests were used to analyze the observed outcome variables. Across middle and high school, students consistently reported Citizenship, Sciences, Physical and Chemical Sciences, and Geography as the main subjects of CC learning. During high school years, students additionally reported Biology and Geology, English, and Portuguese classes. Students reported a similar average knowledge of CC across all school grades. A correlation analysis revealed a positive association between the perceived frequency of classes addressing CC and subjective knowledge of CC. Despite the cross-sectional nature of the current study, the cumulative opportunities to learn CC throughout schooling seem not to impact students' perceived knowledge as it remains average from Grades 7 to 12. This raises a reflection on how CC is being integrated into the school curriculum and its impact on students' knowledge.

**Keywords:** *Climate change, formal education, school curriculum, student's perceptions, subjective knowledge.*

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### **1. Introduction**

The United Nations (2015) has increasingly emphasized the role of schools in promoting knowledge to address climate change (CC). National school curricula have included CC content through two approaches: a) cross-curriculum inclusion, resulting in CC being taught under various subjects; and b) a non-disciplinary or interdisciplinary space within the curriculum that facilitates the integration of CC education (Eilam, 2022).

In Portugal, as outlined in the Essential Learning Guidelines (Direção-geral da Educação, 2018), CC content can be covered in various subjects (e.g., Citizenship, Science, Geography, English). For instance, in the context of Citizenship, this topic is optional, and in certain subjects, the teaching guidelines provided are not objective, granting teachers the autonomy to determine strategies and depth to address CC. This subjectivity may result in variations in the curriculum at teacher and school levels. Hence, it is important to have a clearer understanding of the implementation of CC in Portuguese formal education. In light of this, students' perceptions are relevant to map the subject areas where CC has been addressed and their own perceived knowledge of the topic.

### **2. Objectives**

This study aims to: a) map the subject areas where the topic of CC has been addressed, from the perspective of Portuguese students; b) analyze the relationship between the perceived frequency of classes addressing CC and students' subjective CC knowledge; and c) analyze the potential differences between school levels in the study's variables.

### 3. Methods

Participants were 582 Portuguese students from 7<sup>th</sup> to 12<sup>th</sup> grades (see Table 1). The questionnaire comprised one open-ended question regarding subject areas where the topic of CC had been taught and the frequency with which it had been addressed (i.e., 1 - Once in a while; 2 - Sometimes; 3 - Many times). Additionally, a four-item Likert scale on CC subjective knowledge was used. Each item of the scale refers to a knowledge domain covered by Hoppe, Taddicken, and Reif (2018): CC in general, its causes, consequences, and mitigation actions. The response options ranged from low (1) to high (5). The scale showed a high level of internal consistency, with an  $\alpha = 0.864$  in the present study. The questionnaire was administered by the research team in the classroom context.

Table 1. Means and frequency distribution of the sociodemographic characteristics of the sample.

|                             | Middle school | High school | Total       |
|-----------------------------|---------------|-------------|-------------|
| N=                          | 300 (51.5%)   | 282 (48.5%) | 582         |
| Sex                         |               |             |             |
| Female                      | 144 (48.0%)   | 174 (61.7%) | 318 (54.6%) |
| Male                        | 156 (52.0%)   | 108 (38.3%) | 264 (45.4%) |
| Age: <i>M</i> ( <i>SD</i> ) | 13.1 (1.1)    | 15.9 (1.0)  | 14.5 (1.8)  |

The software SPSS, version 25.0 was used for statistical analysis. Descriptive statistics were conducted to assess differences in socio-demographic characteristics. The data collected on subject areas where the topic of CC had been addressed was subjected to frequency analysis. Subject areas mentioned by fewer than 10% of all participants were excluded from the analysis. Since the outcome variables did not fit the normal distribution, Mann-Whitney U nonparametric tests for paired samples were selected to compare the two school levels. A Spearman correlation test was used to verify the association between the frequency with which participants perceived CC being addressed in classes and their CC subjective knowledge.

### 4. Results

The preliminary results offered no statistically significant differences in terms of participants' demographic characteristics. Across both studied school levels, participants consistently identified Sciences, Geography, Citizenship, Physical and Chemical Sciences, and as the main school subjects of prior or current CC learning (see Table 2). In addition, during high school years, participants also reported Biology and Geology, and more frequently, English and Portuguese classes, as contexts of CC learning. Students in high school reported a statistically significant higher number of subject areas where CC is addressed than students in middle school (see Table 3).

Table 2. Subject areas where each school level addresses CC, per frequency, and percentage of students.

| Subject areas                  | Middle school | High school  | Total        |
|--------------------------------|---------------|--------------|--------------|
| Biology and Geology            |               | 81 (28.72%)  | 81 (13.92%)  |
| Citizenship                    | 109 (36.33%)  | 98 (34.75%)  | 207 (35.57%) |
| English as Foreign Language    | 15 (5.00%)    | 71 (25.18%)  | 86 (14.78%)  |
| Geography                      | 132 (44.00%)  | 120 (42.55%) | 252 (43.30%) |
| Physical and Chemical Sciences | 58 (19.33%)   | 46 (16.31%)  | 104 (17.87%) |
| Portuguese as Mother Tongue    | 26 (8.67%)    | 59 (20.92%)  | 85 (14.60%)  |
| Sciences                       | 226 (75.33%)  | 86 (30.50%)  | 312 (53.61%) |

Table 3. Means and differences between middle and high school on Mann-Whitney U tests for the study's measures.

| Variables  | Middle school <i>M</i> ( <i>SD</i> ) | High school <i>M</i> ( <i>SD</i> ) | <i>Z</i> |
|--|--------------------------------------|------------------------------------|----------|
| Reported disciplines                                 | 2.16 (1.14)                          | 2.44 (1.05)                        | -3.18**  |
| Perceived frequency of CC being addressed in classes | 1.80 (0.69)                          | 1.85 (0.64)                        | -0.83    |
| Subjective knowledge                                 | 3.40 (0.77)                          | 3.46 (0.71)                        | -1.13    |

Notes. \*\*  $p < .01$ .

Regarding the perceived frequency of CC classes and participants' CC subjective knowledge, results did not significantly differ between school levels (see Table 3). A Spearman's correlation showed a statistically significant positive relationship between the average frequency with which participants perceive CC being addressed in classes and subjective CC knowledge in middle school ( $r_s = 0.34$ ,  $p < .001$ ) and high school ( $r_s = 0.12$ ,  $p = .039$ ).

## 5. Discussion

The current study's findings offer relevant insights for educational practice, despite the limitations associated with its cross-sectional nature. Firstly, this data may encourage a reflection on the integration of CC into the Portuguese school curriculum. It is noteworthy that approximately one-third of the high schoolers in the present study continue to report classes more typically taught in middle school, such as Citizenship or Sciences, as the primary sources of CC formal learning. In line with the cross-curricular approach outlined in the Essential Learning guidelines (DGE, 2018), the study found that high schoolers associate a greater number of subject areas with which CC is taught. Although a complex issue such as CC is indeed difficult to encompass within a single subject area, the current study may highlight certain limitations of the cross-curriculum approach.

Data suggests that the cumulative opportunities to learn CC throughout schooling seem not to improve students' perceived knowledge as it remains average from middle to high school. This is consistent with the results of a systematic review by Bhattacharya, Carroll Steward, and Forbes (2021) that reported that prominent CC conceptions among middle school students were also present among high school students. The nature of the cross-curricular approach may contribute to this result, as students struggle to form the necessary connections between the fragments of knowledge covered in different subjects (Eilam, 2022). Consequently, it might become too challenging for students to understand the problem as a whole (Hoppe et al., 2018). Furthermore, the variations within the curriculum resulting from the teachers' autonomy to determine strategies and depth to address CC or other contents proposed in Essential Learning guidelines (DGE, 2018) may prevent students from correcting possible misconceptions over the years. That may lead students to perceive CC instruction at school as incomplete and meaningless (Pickering, Schoen, Botta, & Fazio, 2020; Baldwin, Pickering, & Dale, 2022).

All considered, future research could further explore students' perceptions of the adequacy of CC education in school, as well as their CC declarative, instead of subjective, knowledge. It would also be relevant to examine at a national level how CC is embedded in the school curriculum and, at a school level, which specific strategies are adopted by teachers when addressing CC.

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# PREDICTORS OF STUDENT'S SENSE OF BELONGING AT SCHOOL WITHIN DIFFERENT GROUPS OF STUDENTS IN SLOVENIA

**Klaudija Šterman Ivančič**  
*Educational Research Institute (Slovenia)*

## Abstract

Sense of belonging at school refers to a student's subjective perception of the school environment. It has been confirmed in various studies as an important predictor of higher academic achievement and student well-being. The results from various international comparative studies in Slovenia (e.g. TIMSS, PIRLS, and PISA) show that students report a lower sense of belonging at school compared to the international averages, and as such need further investigation. The main aim of this paper is to gain a deeper understanding of the sense of belonging at school among Slovenian students by testing the explanatory model of students' sense of belonging at school that includes significant predictors already identified in other national and international studies and determined based on a broad literature review. In examining the effects of predictors of students' sense of belonging at school, the paper also examines the differences in the effects within different groups of students: according to students' gender, socioeconomic status, and immigration status. For the data analysis, we used the data from the PISA 2018 survey, which in Slovenia includes a representative sample of 6.24115-year-old students. From the 2018 questionnaire, we used separate scales addressing students' perceived disciplinary climate in the classroom, teacher's socio-emotional support, teacher's individual approach to teaching, discriminatory behavior of teachers, perceived competition amongst students, bullying, parental support, and frequency of students' positive emotions. All scales showed good internal consistency in the Slovenian sample. We used the linear regression procedure to analyse the size effects of different predictors when explaining students' sense of belonging at school within different groups of students. The multicollinearity between the variables was also checked before undertaking regression. Data were analysed using the statistical program IEA IDB Analyzer (Version 5.0.20), which, due to two-stage sampling in the PISA study, allows the use of individual students and sample weights to properly assess the standard parameter errors in the population using the Bootstrap method. The results showed that two predictors of students' sense of belonging at school had been confirmed as the most significant in the Slovenian context, regardless of students' gender, socio-economic status, and immigrant status: perceptions of students' bullying in schools and frequency of students' positive emotions. The results thus point to the importance of preventing bullying in schools and enhancing the socio-emotional well-being of students to promote a sense of belonging at school among different groups of students.

**Keywords:** *Sense of belonging at school, bullying, gender, socioeconomic status, immigrant status.*

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## 1. Introduction

Sense of belonging at school is defined as the student's subjective perception of being accepted, respected, included, and supported in the school environment (Goodenow, 1993). It has been confirmed in various studies (e.g. Allen et al., 2018; Pittman and Richmond, 2007; Ryan and Deci, 2000) as an important predictor of higher academic achievement and overall student well-being. Several studies, including some meta-studies and systematic reviews (e.g. Korpershoek et al., 2019), have examined the sense of belonging at school as an independent variable that predicts students' academic achievement and well-being. However, less attention has been paid to predictors of a sense of belonging at school in the scientific literature (Mok et al., 2016). Certain authors (e.g. D'Hondt, 2015; Hernández et al., 2017; Huyge et al., 2015; Loukas et al., 2016) point out that, due to the different and highly fragmented approaches to research on the sense of belonging at school, there are inconsistent findings on which predictors are most important for the development of students' sense of belonging at school. Studies (e.g. Chiu et al., 2016; Ham et al., 2017; Ni & Han, 2022; Sampasa-Kanyinga et al., 2019) also suggest that it is important to consider different groups of students when examining their sense of belonging at

school, as there are important differences within different groups of students. Here, differences by gender, immigration background, and socio-economic status of students are often highlighted.

## 2. Objectives

The results from various international comparative studies in Slovenia (e.g. TIMSS, PIRLS, and PISA) show that students report a lower sense of belonging at school compared to the international averages, and as such need further investigation. The main aim of this paper is to gain a deeper understanding of the sense of belonging at school among Slovenian students by testing the explanatory model of students' sense of belonging at school that includes significant predictors already identified in other national and international studies (e.g. Faircloth & Hamm, 2005; Reschly et al., 2008; Klem & Connell, 2004) and determined based on a broad literature review. Since there are significant differences in various aspects of educational outcomes within different groups of students in Slovenia (e.g. Šterman Ivančič & Štrefel, 2023), in examining the effects of predictors of students' sense of belonging at school, the paper also examines the differences in the effects within different groups of students according to students' gender, socioeconomic status, and immigration background.

## 3. Method

For the data analysis, we used the data from the PISA 2018 survey, which in Slovenia includes a representative sample of 6.24115-year-old students. From the 2018 questionnaire, we used separate scales addressing students' perceived disciplinary climate in the classroom, teacher's socio-emotional support, teacher's individual approach to teaching, discriminatory behavior of teachers, perceived competition amongst students, bullying, parental support, and frequency of students' positive emotions. All scales showed good internal consistency in the Slovenian sample. We used the linear regression procedure to analyse the size effects of different predictors when explaining students' sense of belonging at school within different groups of students. The multicollinearity between the variables was also checked before undertaking regression. Data were analysed using the statistical program IEA IDB Analyzer (Version 5.0.20), which, due to two-stage sampling in the PISA study, allows the use of individual students and sample weights to properly assess the standard parameter errors in the population using the Bootstrap method.

## 4. Results

Various predictors of a sense of belonging at school, which have already been confirmed as significant in other research, have been included in explanatory models. The results show that two in particular have been confirmed as the most significant in the Slovenian context: perceptions of students' bullying in schools and frequency of students' positive emotions. Also, these two predictors were confirmed as the most significant within different groups of students, with slightly higher explanatory power for girls, students with immigrant status, and students reporting a lower socio-economic status.

## 5. Discussion and conclusions

The findings of this study can be linked to previous research showing that low or no peer violence (e.g. D'hondt et al., 2015; Hatchel et al., 2019; Loukas et al., 2016) and higher frequency of students' positive emotions (e.g. Frydenberg et al., 2009; Tian et al., 2016) are significantly associated with a greater sense of belonging at school. At the same time, the study, using internationally comparable data, suggests the importance of these predictors for some at-risk groups of students (e.g. gender, immigrant status, low socio-economic status). The results thus point to the importance of preventing bullying in schools and enhancing the socio-emotional skills and well-being of students and teachers to promote a sense of belonging at school also among different groups of students.

The mentioned could be achieved through systematic planning and implementation of interventions e.g. peer violence prevention programmes, and programmes to develop the socio-emotional skills and well-being of students and teachers in Slovenia. This way the enhancement of a sense of belonging at school at the level of a whole-school approach seems to be of great importance, and with such interventions, some of the most vulnerable groups of students could be reached (Allen et al., 2018). The conclusions above are also relevant in light of previous research on the sense of belonging at school, which has rarely examined predictors of sense of belonging at school separately for specific groups of students (e.g. He & Fischer, 2020).

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## UNDERSTANDING MINDFUL TEACHING THROUGH TEACHER BURNOUT AND RELATIONAL COMPETENCE

Igor Peras, Manja Veldin, & Ana Kozina  
*Educational Research Institute (Slovenia)*

### Abstract

Teachers require a variety of skills and competencies to deliver effective teaching (Kaendler et al., 2015). Mindfulness-based approaches are recognized in continuous professional development programs for enhancing outcomes for both teachers and students (Roeser et al., 2012). Although mindfulness is typically viewed as an individual meditative practice (Creswell, 2017), it can also be effectively applied in social settings, particularly valuable for teachers in maintaining a presence in themselves and the classroom (i.e. on students when teaching). Teachers can practice mindfulness in teaching through intrapersonal mindfulness (focusing on one self's awareness, attentiveness and the present moment) and interpersonal mindfulness (having an open, accepting, and receptive approach to student-teacher interactions), with both types recognized as integral for effective teaching (Frank et al., 2016). In the present paper, we focus on teacher characteristics, namely teacher burnout and their relational competence, as potential contributors to mindful teaching. Although mindfulness is often used as an individual preventive strategy for burnout (Luken & Sammons, 2016), our focus is on how teacher burnout is connected to mindfulness during teaching. Moreover, relational competence considers the social aspect of the classrooms, as it encompasses how well the teachers use student-supportive leadership to activate and motivate their students (Laursen & Nielsen, 2016). The sample includes 207 teachers from Slovenia (94,2 % female) who participated in the Erasmus KA3 project HAND ET: Empowering Teachers Across Europe to Deal with Social, Emotional and Diversity Related Career Challenges. Two multiple regression analyses were performed with interpersonal and intrapersonal mindfulness set as dependent variables. Burnout, relational competence and control variables (age, experience with mindfulness/inner exercises, experience with yoga/body exercises) were entered into the analyses in a step-wise procedure. The results show the predictors explain 36 % of the variance in interpersonal mindfulness and 21 % in intrapersonal mindfulness. Relational competence was a positive predictor of interpersonal mindfulness, while burnout was a negative predictor of intrapersonal mindfulness. Furthermore, age was inversely associated with intrapersonal mindfulness, suggesting that younger teachers may benefit from additional support. Findings are discussed through the lens of socio-emotional competencies also considering the practical implications.

**Keywords:** *Mindful teaching, relational competence, burnout, socio-emotional competencies.*

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### 1. Introduction

As the world is transforming at an unfound pace, teachers are increasingly required to develop new skills and effective teaching methods (Kaendler et al., 2015). Not only do teachers require skills related to digitalization, they also have to be empowered to successfully cope with the demands of their job. Stress is an evident part of the teaching professions (Iriarte Redín & Erro-Garcés, 2020) and teachers require the skills and empowerment in order to mitigate the effects of stress and to be fully present (i.e. emotionally, mentally) in the classroom while teaching. This can be done through programs for ongoing professional development. Recently, mindfulness-based approaches have garnered attention for potentially being able to provide positive outcomes for both educators and students (Roeser et al., 2012). While mindfulness is typically viewed as an individual meditative practice (Creswell, 2017), mindfulness can also be used in social contexts, especially in the context of classroom education (e.g. assisting teachers in cultivating presence in the present moment while teaching).

The integration of mindfulness practices into teaching can be thought through two dimensions: intrapersonal mindfulness and interpersonal mindfulness (Frank et al., 2016). Intrapersonal mindfulness emphasizes self-awareness, attentiveness, and embracing the present moment. Contrary, interpersonal mindfulness focuses on fostering an open, accepting and receptive approach to student-teacher

interactions. Frank et al. (2016) underscores the importance of both dimensions in facilitating effective teaching practices. In the present paper, we focus on teacher characteristics, namely teacher burnout and their relational competence as potential contributors to mindful teaching.

While mindfulness is often viewed as a preventive measure for burnout (Luken & Sammons, 2016), the present study gives attention to understanding the association between teacher burnout and mindfulness during teaching. Moreover, as teachers in the classroom are always interacting with students, it is important to consider relational competence in fostering mindfulness in teaching. According to Laursen & Nielsen (2016) relational competence includes the social dynamics within the classroom, encompassing how adeptly teachers use student-supportive leadership to help foster activity of students.

The purpose of the present paper is to examine the predictors of mindfulness in teaching (operationalized as intrapersonal and interpersonal mindfulness).

## 2. Method

### 2.1. Participants

The sample consisted of 207 Slovenian teachers ( $M = 41.67$  years,  $SD = 7.69$ ; 94.2 % female) from schools who participated in the European Erasmus KA3+ project HAND ET: Empowering Teachers Across Europe to Deal with Social, Emotional and Diversity Related Career Challenges, which aimed to increase the social-emotional competencies and diversity awareness amongst teachers and school staff.

### 2.2. Instruments

*Mindfulness in teaching* was assessed with the Mindfulness in teaching scale (Frank et al., 2016) with 14 items (example: “When I am teaching it seems I am running on automatic without much awareness of what I am doing.”) on a 5-point Likert scale (1 – Never true to 5 – Always true). Reliability was 0.83 for the total scale. *Burnout* was measured with the Shirom-Melamed Burnout Questionnaire (SMBQ) (Melamed et al., 1992) with teachers responding to 14 items (example: “I feel fed up.”) on a 7-point Likert scale (1 – Never/almost never to 7 – Always/almost always). Reliability of the scale was 0.93. *Relational competence* was measured with the Teacher’s Relational Competence Scale (Vidmar & Kerman, 2016) with teachers responding to 7 items (example: “When I can’t build a good relationship with a student, I ask him/her for help”) on 5-point Likert scale (1 – Never true to 5 – Always true). Reliability was 0.85. *Experience with meditation or similar inner exercises* was measured with teachers responding to the following question “Have you ever done meditation or similar inner exercises?” on a 5-point Likert scale (1 – I have never done to 5 – I meditate or practice similar inner exercises on a regular basis). *Experience with yoga or similar body exercises* was assessed with the following item “Have you ever done yoga or similar body exercises?” with teachers responding on a 5-point Likert scale (1 – I have never done to 5 – I do yoga or practice similar body exercises on a regular basis). *Age* was used as a control variable in the regression models.

### 2.3. Procedure

Before the beginning of the HAND ET program, teachers completed a digital version of the HAND ET questionnaire battery. Data presented is only for selected measures at the first time-point of measurement (T1). IBM SPSS 28 was used for statistical analyses.

## 3. Results

Table 1. Descriptive statistics and correlations between variables.

|                             | <i>M</i> | <i>SD</i> | 1     | 2     | 3     | 4      | 5     | 6     | 7     | 8 |
|-----------------------------|----------|-----------|-------|-------|-------|--------|-------|-------|-------|---|
| 1 Age                       | 41.67    | 7.69      | 1     |       |       |        |       |       |       |   |
| 2 Meditation experience     | 2.95     | 1.07      | -.09  | 1     |       |        |       |       |       |   |
| 3 Yoga experience           | 2.99     | 1.16      | -.06  | .48** | 1     |        |       |       |       |   |
| 4 Burnout                   | 3.43     | 1.12      | -.03  | .00   | .07   | 1      |       |       |       |   |
| 5 Intrapersonal mindfulness | 3.93     | .53       | .21** | -.04  | -.02  | -.37** | 1     |       |       |   |
| 6 Interpersonal mindfulness | 4.03     | .52       | .01   | .08   | .19** | -.08   | .31** | 1     |       |   |
| 7 Responsibility            | 3.90     | .54       | .16*  | .04   | .10   | -.06   | .27** | .56** | 1     |   |
| 8 Individuality             | 4.12     | .57       | -.05  | .04   | .08   | -.06   | .26** | .54** | .72** | 1 |

Notes: \*\*  $p \leq 0.01$ ; \*  $p \leq 0.05$ .



Descriptive statistics and correlations between the variables are presented in Table 1. Based on correlational coefficients, differences in correlates of intrapersonal mindfulness and interpersonal mindfulness are already observed. Burnout is negatively correlated with intrapersonal mindfulness, but not interpersonal. Dimensions of relational competence (individuality, responsibility) are positively correlated to interpersonal mindfulness, but not intrapersonal. Age is positively correlated with intrapersonal mindfulness, but not interpersonal mindfulness.

Results from two hierarchical multiple regressions are presented assessing the predictors of interpersonal mindfulness and intrapersonal mindfulness. In both models, predictors were entered in the same order in a step-wise manner. Step 1 included age as the control variable. In step 2, previous experiences with meditation/inner exercises and yoga/body exercises were entered. Burnout was added in step 3, while aspects of relational competence (individuality, responsibility) were entered in the last step. The predictors together explained 36 % of variance in interpersonal mindfulness and 21 % of variance of intrapersonal variance. Concerning interpersonal mindfulness, experience with yoga and/or body exercises ( $\beta = 0.15, p < 0.05$ ), responsibility ( $\beta = 0.36, p < 0.01$ ), and individuality ( $\beta = 0.26, p < 0.01$ ) were positive predictors. Responsibility was the strongest predictor. Concerning intrapersonal mindfulness, age and burnout were shown to be significant predictors, with age being a positive predictor ( $\beta = 0.19, p < 0.01$ ) and burnout being a negative predictor ( $\beta = -0.34, p < 0.01$ ).

#### 4. Conclusions

The present study focused on burnout and relational competence as predictors of intrapersonal and interpersonal mindfulness (dimensions of mindfulness in teaching). Our study shows burnout and relational competence as important aspects to consider when fostering mindfulness in teaching. Burnout was negatively associated with intrapersonal mindfulness, meaning that teachers who report higher burnout reported lower intrapersonal mindfulness. This shows that experiencing burnout affects teachers' ability to be mindful while teaching. Typically, mindfulness is used as a preventive intervention to decrease burnout (Luken & Sammons, 2016). Relational competence, both individuality and responsibility, were shown to be positively associated with interpersonal mindfulness, meaning that teachers who report higher relational competence reported higher interpersonal mindfulness. As relational competence (also referred to as interpersonal competence) relates to relationships with others (Vidmar & Kerman, 2016) it is expected that it is related to the aspect of mindfulness of teaching that focuses on student-teacher interactions (Frank et al., 2016). Developing relational competencies and mechanisms to prevent burnout in teachers can help teachers be mindful while teaching. This can be done through a whole-school approach that is supported by a continuous educational program (such as HAND ET).

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# FEAR'S ALTRUISTIC QUANDARY: UNRAVELING PRO-SOCIAL CHOICES

Holly Cole<sup>1</sup>, & Carmen Merrick<sup>2</sup>

<sup>1</sup>Psychology Department, Wesleyan College (USA)

<sup>2</sup>Psychology Department, Hendrix College (USA)

## Abstract

The Covid-19 pandemic brought with it a tidal wave of fear and anxiety across the globe. As often depicted in movies and media, this created a situation in which people were predicted to act selfishly; however, the record amount of volunteerism during this time is at odds with the prediction. This research was designed to investigate the role of personal fear, collective fear, and empathy in determining individual behavior during a collective emergency. Two online research studies were conducted in which personal fear or collective fear was manipulated, and the desire to act in a prosocial way was measured. Results suggest a complex relationship between fear, empathy, and self-reported prosocial intentions. However, there was no impact on true behavioral measures of prosocial behavior.

**Keywords:** Fear, prosocial behavior, empathy, collective emergency.

## 1. Introduction

In the tumultuous spring of 2020, the world's population was caught up in a shared landscape of chaos and uncertainty. An unprecedented and swiftly spreading pandemic ushered in stay-at-home mandates and mask regulations. Many people across the globe lost their jobs, students lost valuable in-person class time, and people went an extended time without seeing friends or family. Given this magnitude of uncertainty and fear, one might naturally anticipate a surge in hostility and aggression; however, 2020 turned out to be a year of volunteerism, and acts of kindness often made headlines.

Previous research aligns with this somewhat counterintuitive observation, suggesting that an increase in prosocial behavior in the face of a crisis is commonplace (Zaki, 2020). For example, people have demonstrated increased prosocial behavior in the face of hurricanes, tornadoes, and even after terrorist attacks (Zaki, 2020). Despite these correlative findings, more research is needed on what drives this effect or how to promote acts of kindness over aggression in emergencies (Drury et al., 2013). The current research was designed to fill this hole in the literature by investigating the role that personal fear, collective fear, and empathy play in a person's decision to behave prosocially.

## 2. Study one

Study 1 was designed to compare the impact of collective fear and personal fear on self-reported prosocial behavior and pandemic-specific prosocial behaviors. One hundred and seventy participants were recruited from Amazon's Mechanical Turk using the Cloud Research Platform to complete this online study (Litman et al., 2017).

Participants were first asked to spend three minutes writing without interruption and to imagine the given scenario in as much detail as possible. Participants were randomly assigned to write about a serious strain of COVID-19 hitting their community (collective fear), the thing they are most afraid of, such as spiders, snakes, or heights (personal fear), or to write about every meal they will have over the next two weeks (control). After writing about the scenario, participants were asked to complete a manipulation check, measures of prosocial behavior (including their likelihood to give to charity), empathy measures, and demographics.

### 2.1. Results

The manipulation check revealed that participants in both the fear conditions (collective and personal) experienced more fear than participants in the control condition,  $F(2, 154) = 10.9, p < .001, \eta^2 = .12$ . Tukey post-hoc tests confirmed our hypothesis in that collective fear ( $M = 2.36, SE = .18$ )

produced significantly more fear than control ( $M = 1.63$ ,  $SE = .18$ ),  $t(154) = 2.87$ ,  $p = .01$ ,  $d = .56$ , 95%  $CI = [.17, .94]$ , as did personal fear ( $M = 2.84$ ,  $SE = .19$ ),  $t(154) = 4.64$ ,  $p < .001$ ,  $d = .92$ , 95%  $CI = [.52, 1.33]$ . There was no difference between the COVID-19 and personal fear conditions.

Participants in the collective fear condition self-reported a higher likelihood to engage in pandemic-specific prosocial behaviors,  $F(2,154) = 3.98$ ,  $p = .02$ ,  $\eta^2 = .05$ . Tukey post-hoc tests revealed a significant difference between collective fear ( $M = 5.44$ ,  $SE = .18$ ) and control ( $M = 4.71$ ,  $SE = .19$ ),  $t(154) = 2.80$ ,  $p = .02$ ,  $d = .54$ , 95%  $CI = [.15, .93]$ . However, there was no difference between collective fear and personal fear or between personal fear and control. Also, contrary to our predictions, there was no significant difference between our experimental groups on anticipated charitable giving or on general prosocial behaviors; however, both were significantly higher than the control group.

Additionally, we examined the relationship between participant-reported fear intensity and pandemic-specific prosocial behaviors as mediated by empathic concern. A series of regression analyses were conducted to test for mediation. The results showed that fear intensity positively predicted pandemic-specific prosocial behaviors ( $B = .25$ ,  $z = 3.32$ ,  $p < .001$ ). Analysis of the indirect effects reveals that empathic concern significantly mediates the relationship between fear intensity and pandemic-specific prosocial behaviors,  $ab = .14$ ,  $z = 2.70$ ,  $p = .007$ , with empathy accounting for 55.5% of the total effect. Fear positively predicts empathic concern ( $B = .16$ ,  $z = 2.78$ ,  $p = .005$ ), and empathic concern positively predicts pandemic-specific prosocial behaviors ( $B = .86$ ,  $z = 11.03$ ,  $p < .001$ ). Despite the mediating role of empathy, fear is still a marginal predictor of pandemic-specific prosocial behaviors ( $B = .11$ ,  $z = 1.93$ ,  $p = .054$ ). These findings suggest a complex relationship between fear, empathy, and pandemic prosocial behaviors, whereby experiencing fear leads people to act more prosocially through increased levels of empathy.

### 3. Study two

Study 2 used the same manipulation used in Study 1 but was strengthened by measuring the actual prosocial behavior (charitable giving) rather than predicted prosocial behavior (desire to give to charity). In study 2, 330 participants were recruited from Amazon's Mechanical Turk using the Cloud Research Platform (Litman et al., 2017).

The writing manipulation from study 1 was reused in study 2, and the same dependent variables were used in the survey. However, in study 2, participants were informed that, in addition to the \$1 payment for completing the study, they would be given an additional bonus of four dollars that they could keep or could donate in part or in whole to one of a list of charities that were provided to them. We included a variety of charities across different domains so that participants could choose one that aligned with their values.

#### 3.1. Results

The manipulation check once again revealed that participants in both the fear conditions (collective and personal) experienced more fear than participants in the control condition,  $F(2, 302) = 47.8$ ,  $p < .001$ ,  $\eta^2 = .24$ . Tukey post hoc tests confirmed our hypothesis in that collective fear condition produced significantly more fear than control ( $M$  difference = 1.17,  $SE = .17$ ),  $p < .001$ ,  $d = .98$ , 95%  $CI = [.69, 1.27]$ , as did personal fear ( $M$  difference = 1.62,  $SE = .17$ ),  $p < .001$ ,  $d = 1.36$ , 95%  $CI = [1.06, 1.66]$ .

The primary dependent variable in study two was the amount of the \$4 bonus donated to charity. However, an overwhelming proportion of our participants chose not to donate to charity, and our data was skewed by this trend ( $M = 86.7$ , Median = 0, skewness = 1.39). Therefore, we transformed this data using the square root function before conducting the planned analysis. Contrary to our predictions, there was no significant effect of fear on charitable giving. Additionally, parallel to Study 1, we had planned to conduct mediation analyses to determine if empathy mediated the relationship between fear and charitable giving. However, the relationship between fear and charitable giving was not significant ( $r = .005$ ,  $p = .94$ ), so we did not conduct further analyses.

### 4. General discussion

In both Studies, the manipulation was successful in that participants self-reported experiencing more fear in both fear conditions compared to the control condition. To further investigate if we were tapping into different types of fear or just fear in general, the written responses were analyzed by independent coders. The coders rated each response for how much it focused on fear for others and how much it focused on fear for self. In both studies, coders found significant differences between conditions,

such that participants in the collective fear condition felt more fear for others, while participants in the personal fear condition wrote more about fear for themselves (all  $p < 0$ ). Suggesting that the manipulation was successful in getting participants to focus on the type of fear intended.

Study one had mixed results, providing some support for the hypothesis that participants experiencing collective fear would be more likely to self-report pro-social behavior. However, this was only consistent across some measures of prosocial behavior. Study two was designed to determine if this inconsistency was, at least in part, due to reported behavior rather than real behavior. As such, participants in Study 2 were given the opportunity to donate any amount of an unexpected bonus to charity at the end of the study. Almost all participants decided to keep the full bonus, although a few commented they would give it to charity on their own, resulting in a floor effect with no difference between any condition.

This finding, or lack thereof, suggests a few possibilities: 1. It is possible that the overall hypothesis is simply off base and experiencing fear, collective or personal, has no impact on prosocial behavior. 2. It is possible that this sample was biased due to economic hardship. We did not collect any measures of economic status, so this possibility cannot directly address this possibility; however, research comparing online samples such as Mturk to in-person samples agree that online samples tend to represent people from lower SES situations (Casler et al., 2011; Walters et al., 2018). It is possible that donating to charity was more of a hardship than anticipated, given the SES of our sample. 3. Participants were given the option to donate the unexpected bonus of \$4 to any of nine non-profit organizations; they were able to decide which organization their funds should support. This amount of choice was selected in an effort to maximize the donations received and to include non-profits that could appeal to all people regardless of political beliefs; this included Planned Parenthood, the Wounded Warrior Project, and the American Humane Society among the list of non-profit organizations. However, it is possible that this amount of choices was overwhelming to participants (Chernev et al., 2015). More research is needed to determine which of these possibilities is the most likely explanation for the lack of significant results.

This research began as a way to understand the ways in which collective emergencies can lead to prosocial rather than antisocial behavior. To understand why some people respond to collective emergencies by helping their neighbors and others respond selfishly, we manipulated the type of fear experienced and how that impacts prosocial intentions and behaviors. Overall, the results of these studies do not fully support the original hypothesis that collective fear would lead to more prosocial behavior than personal fear. However, the results suggest that there are likely different types of fear that have varying impacts on empathy and reactions to a collective emergency.

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## INVOLUNTARY CAREER CHANGES. POSSIBLE MEANING AND COMBINATION OF RESOURCES FOR COPING

Anne Pignault<sup>1</sup>, & Claude Houssemand<sup>2</sup>

<sup>1</sup>*LPN Psychology & Neurosciences Lab (UR7489), University of Lorraine (France)*

<sup>2</sup>*Department of Education and Social Work, Institute for Lifelong Learning & Guidance,  
University of Luxembourg (Luxembourg)*

### Abstract

In a world of increasingly unstable, precarious, and uncertain work, involuntary career changes are multiplying (Masdonati et al., 2022; Pignault, 2022). Professional and personal career paths must be constantly adapted, re-imagined, and re-invented. When faced with these changes or discontinuities, individuals need to find responses that meet the expectations of the professional world and are acceptable to themselves. On the one hand, the aim of this study is to gain a better understanding of the meaning that involuntary career changes can ultimately take in a career and life path; on the other hand, to better identify the resources mobilised and combined (Csillik, 2017; Hobfoll, 2002) to cope with these events and attribute meaning to them. Ten career stories (Guichard, 2007; Savickas, 2005) were collected from individuals aged between 24 and 58 who had experienced involuntary career changes. These narratives, fully transcribed, were analysed using thematic content analysis and Iramuteq software. The results highlight the mobilisation of resources at different levels: social, psychological, and institutional. Several combinations of resources make it possible to cope with involuntary career changes, as well as trigger self-reflection. Reflective activity enables people to explore one's aspirations for the future and attribute or construct meaning to their experience and these career changes. These main categories are presented and discussed.

**Keywords:** *Career change, life story, meaning, resources, thematic analysis.*

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### 1. Introduction

Research about career transition is not new. However, a number of authors have shown how changes in the political, economic, and educational contexts (Fouad & Bynner, 2008) make this research even more interesting and important, as the issues involved concern an ever-increasing proportion of the population. In particular, it appears that employment is becoming more precarious (Kalleberg, 2018) and that increasingly uncertain career paths are marked by more frequent transitions of different kinds and forms (Sverke et al., 2002; Masdonati & Zittoun, 2012; Pignault, 2022).

One of the dimensions that enables us to understand better the experience of transition is the notion of intentionality. Transitions are distinguished according to their more or less constrained nature, whether they are voluntary or involuntary, anticipated or not. The various studies thus make it possible to differentiate between desired reconversions, or 'intentional career breaks' (e.g., Murtagh et al., 2011; Wise & Millward, 2005), and transitions and reorientations that are undergone, in particular, following redundancies (Masdonati et al., 2022).

Transition is finally about a process of constructing coherence, continuity, and meaning (Masdonati & Zittoun, 2012). In this context, the transition could be seen as an opportunity to (re)make sense of a situation or to move towards situations that make sense (Tsuda-McCaie & Kotera, 2023).

The aim of this study is to contribute to an understanding of the process of reflection and construction of meaning during a transition. In this context, it seems essential to examine the resources needed to meet this challenge.

## 2. Method

Ten life stories focusing on career stories were collected from individuals aged between 24 and 58, seven men and three women, who had experienced involuntary career changes (mainly through unemployment). All signed an informed consent form.

In a biographical approach (Guichard, 2007; Savickas, 2005), life and career stories highlight the course of a person's life and their experiences. It corresponds to two distinct temporalities: the present of the narrative and the past of the story. The past is recounted with a vision of the present, the reflexive narrative thus making it possible to identify the turning points in an individual's journey that would not have been identifiable before. Finally, the method places the narrator at the centre of the story.

The first phase of the interview allowed the researcher to present the subject of the study (in general terms, 'to understand current careers better') and to inform the participants of the conditions of anonymity, confidentiality, and the possibility of interrupting the interview or recording at any time. The researcher then asked the subjects how they could retrace or re-situate their career path and suggested a number of repetitions when the subjects mentioned breaks in their careers and involuntary changes to try to make the resources mobilised in this situation and their effects on the trajectory more explicit. These interviews lasted between 60 and 90 minutes, then were fully transcribed and analysed using thematic content analysis and Iramuteq software.

## 3. Results

The thematic content analysis highlights four main categories. The first three highlight the mobilisation of resources at different levels – social, psychological, and institutional, whether combined or not – to cope with involuntary career change: 1/ mobilisation of personal and psychological resources such as resilience, optimism, determination, openness to experience and adaptability (e.g., knowing how to "dare new things"; "I remain optimistic and hope that things will change"; "you have to fight"; "fortunately I know what I want"); 2/ social support from family, friends, and professionals in counselling and guidance area (e.g., "we had a good chat [with a counsellor], and that did me good"; "there was a mutual aid system with friends"), and 3/ financial support and resources (e.g., "I have an allowance fortunately, if I didn't I wouldn't be talking like this"; "I was able to go back to training"). The fourth category finally refers to the way how this transition was also able to trigger reflection on oneself, on the meaning in life and work, and one's aspirations for the future ("it allowed me to do a kind of introspection", "I even decided to take my things and go travelling, go out into nature [...] explore my limits", "become a performing artist, which was something I'd had in mind since I was fifteen but hadn't necessarily realised").

A complementary analysis was carried out with the Iramuteq software (Ratinaud, 2014). In addition to the Descending Hierarchical Classification, IRAMUTEQ includes other forms of analysis, such as classic textual analyses or similarity analysis. Here, the typological analysis reveals three main classes. Class 1 represents 41.6% of the analysed corpus. This refers to the subjects' discourse on the reflections triggered by involuntary career change and questioning in terms of meaning in life and in work. The specific vocabulary "interrogative", "question", "transition", "live", "life", "course", "think", "understand", "become", "change", "hesitate", "decide" is characteristic of the discourse and the class. It is interesting to note that class 1 also includes vocabulary referring to support and guidance for others in this stage of life. The terms "help", "support", "parent", "family", "resource", "social", "entourage", "accompaniment", "human", "mother", or "friend" are also characteristic of this class. The second class is made up of two categories respectively representing 14.1% and 29.2% of the analysed corpus. This class refers to coping strategies centred on problems or emotions. A set of vocabulary refers to the steps taken to deal with the situation: "response", "announcement", "write", "interview", "colleague", "human resource", "CV", "letter", "application", "apply", but also to the management of possible related disorders and emotions: "physically", "depression", "morally", "positive", "negative", "energy", "love", "difficulty", "problem", "irritated", "distance", "psychological". Finally, the third class refers to institutional and financial support. This class represents 14.9% of the analysed corpus. The terms "pay", "insurance", "salary", "rent", "house", "pension", "child", "keep", "holiday", "serious", "financial", "pension", "lawyer", "feed", "problematic", "marry", "touch" or "right" are characteristic.

## 4. Discussion

Psychological resources are perceived, according to Csilik (2017), as resources that enable individuals to protect themselves from the harmful consequences of life events that are deemed to be difficult and to promote satisfactory general well-being. An analysis of 10 career stories focusing on involuntary career change highlights the importance of various coping strategies and psychological resources in dealing with the situation. It is interesting to note here how others can be levers or supports

to help reflect on one's career, make decisions, and better understand the meaning of the change in one's career. Class 1 of the computerised analysis is a particularly good example of this link. This also tells us about the conditions that need to be met if career change is to become an opportunity for people to career development. So, once again, the study reveals the importance of supporting people and helping them to develop or mobilise resources.

Back in 1998, Hall and Moss introduced the concept of a 'new career contract' to be established with oneself and emphasized the need to develop two major meta-competencies – self-knowledge and adaptability. This successful concept was further described and measured in the work of Savickas (e.g., Porfeli & Savickas, 2012). One of the ways how this can be achieved is by making people active players (Savickas, 2012) and enabling them to be more autonomous in shaping their own careers. This autonomy also involves the development of guidance skills (Guichard, 2007) or 'career development' skills (Turner & Conkel, 2010).

Finally, it would be interesting to be able to talk to the same 10 subjects again in order to try to understand how this narrative may or may not, with hindsight, have contributed to the development of reflexive skills and how their discourse has found a place in their way of pursuing their life and work path.

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# POSITIVE YOUTH DEVELOPMENT AND PISA READING ACHIEVEMENT IN IMMIGRANT STUDENTS: THE CASE OF SLOVENIA, PORTUGAL AND HUNGARY

**Ana Mlekuž**

*Educational Research Institute (Slovenia)*

## Abstract

Using PISA 2018 data from Slovenia, Portugal, and Hungary, this article explores how the Positive Youth Development (PYD) model's 5Cs (competence, confidence, connection, character, caring) relate to reading achievement. Comparisons among first- and second-generation immigrants and native students reveal significant differences and commonalities in 5Cs and reading achievement across countries. The study emphasizes the need for tailored educational strategies, recognizing variations in predictors within and between student groups and countries, and urging policymakers and educators to create inclusive environments that support positive student development.

**Keywords:** *Positive Youth Development, 5Cs, PISA 2018, reading achievement, immigrant status.*

## 1. Introduction

The impact of immigrant backgrounds on personal development, acculturation, and psychological well-being remains unclear, as studies (Correa-Velez et al., 2017; Motti-Stefanidi & Masten, 2017) show mixed results. Immigrant students often face challenges such as discrimination, racism, and mental health issues due to their low socioeconomic status (Correa-Velez et al., 2017; Fazel et al., 2005). However, they also develop adaptability and flexibility skills, forming diverse friendships, learning new languages, and managing emotions, contributing to positive outcomes (Nunn et al., 2014).

Two phenomena are connected to migrant adaptation. The "immigrant paradox," where first-generation immigrants outperform second-generation immigrants and native students, has been explored in the USA and Canada (Garcia-Coll & Marks, 2012) but less in Europe (Dimitrova et al., 2017). On the other hand, "migration morbidity," describing immigrants' adaptation challenges, has been studied in 14 European countries. Adaptation success depends on family and peer relationships, perceived discrimination, and embracing both host and ethnic cultures (Dimitrova et al., 2017).

In studying Positive Youth Development (PYD), the 5Cs model (competence, confidence, connection, character, caring) is widely used (Kozina & Pivec, 2020; Lerner et al., 2012, 2015; Wiium & Dimitrova, 2019). Chosen for its empirical support and flexibility (Heck & Subramaniam, 2009), PYD focuses on identifying and supporting strengths rather than deficits, enhancing positive development and resilience (Masten, 2014). In exploring differences in the perception of the 5Cs among native, second-generation, and first-generation immigrants, this model provides a valuable framework for understanding and promoting positive youth development.

This contribution analyzes PISA 2018 data to explore how the 5Cs influence successful adaptation and predict reading achievement. It assesses outcomes for first- and second-generation immigrant students and native students in Slovenia, Portugal, and Hungary, selected based on the Migrant Integration Policy Index evaluation of educational system responsiveness. By comparing migrant and native students, the study identifies key 5Cs impacting achievement and evaluates variations in these predictors based on students' immigrant status. The objective is to pinpoint the essential 5Cs for successful adaptation, providing valuable insights for policymakers and educators.

## 2. Methodology

*Participants.* The present research examines three representative samples of migrant students from PISA 2018 in Slovenia ( $N_{\text{first-generation}} = 213$ ;  $N_{\text{second-generation}} = 200$ ;  $N_{\text{total sample}} = 5,088$ ), Portugal ( $N_{\text{first-generation}} = 104$ ;  $N_{\text{second-generation}} = 172$ ;  $N_{\text{total sample}} = 4,902$ ), and Hungary ( $N_{\text{first-generation}} = 38$ ;  $N_{\text{second-generation}} = 54$ ;  $N_{\text{total sample}} = 4,253$ ). The PISA survey specifically targets 15-year-old students.



*Sampling and procedure.* A two-stage stratified sampling method selected schools enrolling 15-year-olds, then sampled 42 (or fewer) students within each school to maintain representativeness. These meticulous methods preserved the test population's representativeness, with students spending around 35 minutes on the background questionnaire.

*Instruments and included variables.* Each surveyed student completed a background questionnaire, forming the basis for later scale derivation. PISA employed the plausible values (PVs) imputation technique, incorporating ten PVs per student for each scale and subscale in the international database. Students were grouped by immigrant background, distinguishing between first-generation (foreign-born with foreign-born parents) and second-generation immigrants (born in the destination country with one or both foreign-born parents). Reading achievement in PISA assessed the ability to comprehend, utilize, and contemplate written texts, with the mean score as the metric. Competence was gauged through students' perceptions of the PISA test difficulty on a 4-point Likert scale. Confidence, measured by resilience, involved a 4-point Likert scale assessing students' ability to handle stressful situations. Connection, evaluating the sense of belonging to school, used a 4-point Likert scale. Character, assessed through respect for other cultures, involved a 5-point Likert scale. Caring, evaluated through perspective-taking, used a 5-point Likert scale to measure students' ability to consider others' perspectives.

*Statistical analysis.* Descriptive statistics and correlations assessed multicollinearity initially. Linear regression identified predictors of reading achievement for each student group in each country. IEA IDB Analyzer (Version 5.0.17) was used for data analysis, considering the two-stage sampling with individual student and sample weights.

### 3. Results and discussion

All regression models are statistically significant and account for from 18 % to 46 % of the variance of the students' reading achievement scores.

Table 1. Results of the regression analysis predicting students' reading achievement in PISA 2018.

|   | Slovenia        |               |                       | Hungary         |               |                       | Portugal        |               |                       |
|---|-----------------|---------------|-----------------------|-----------------|---------------|-----------------------|-----------------|---------------|-----------------------|
|   | b (SE)          | B (SE)        | R <sup>2</sup> * (SE) | b (SE)          | B (SE)        | R <sup>2</sup> * (SE) | b (SE)          | B (SE)        | R <sup>2</sup> * (SE) |
| <b>First-generation migrant students</b>  |                 |               |                       |                 |               |                       |                 |               |                       |
|   | 446,53 (8,15)   |               |                       | 511,61(12,56)   |               |                       | 453,98(10,09)   |               |                       |
| Competence                                | -30,83 (-0,37)* | -0,37 (0,07)* |                       | -35,55 (14,14)* | -0,40 (0,15)* |                       | -20,36 (10,13)* | -0,21 (0,10)* |                       |
| Confidence                                | -7,48 (7,13)    | -0,09 (0,09)  |                       | 6,00 (13,23)    | 0,06 (0,13)   |                       | -1,49 (10,62)   | -0,01 (0,10)  |                       |
| Connection                                | 17,51 (7,58)*   | 0,19 (0,07)*  |                       | -20,07 (14,47)  | -0,21 (0,14)  |                       | 7,09 (7,93)     | 0,08 (0,09)   |                       |
| Character                                 | 14,63 (6,75)*   | 0,16 (0,07)*  |                       | 46,34 (12,79)*  | 0,52 (0,15)*  |                       | 20,01 (12,01)   | 0,20 (0,12)   |                       |
| Caring                                    | 10,99 (5,96)    | 0,14 (0,08)   | 0,26 (0,07)           | -11,99 (20,36)  | -0,11 (0,19)  | 0,46 (0,11)           | 13,68 (8,72)*   | 0,16 (0,10)*  | 0,18 (0,07)           |
| <b>Second-generation migrant students</b> |                 |               |                       |                 |               |                       |                 |               |                       |
|   | 467,71 (7,30)   |               |                       | 524,75(11,63)   |               |                       | 486,99 (8,90)   |               |                       |
| Competence                                | -16,68 (7,24)*  | -0,21 (0,09)* |                       | -37,69 (10,84)* | -0,45 (0,12)* |                       | -41,52 (9,94)*  | -0,42 (0,10)* |                       |
| Confidence                                | -3,35 (7,04)    | -0,04 (0,09)  |                       | -13,40 (15,12)  | -0,15 (0,18)  |                       | -16,62 (7,62)*  | -0,16 (0,07)* |                       |
| Connection                                | -7,39 (6,88)    | -0,07 (0,07)  |                       | 4,77 (11,00)    | 0,05 (0,12)   |                       | 9,14 (5,27)     | 0,11 (0,07)   |                       |
| Character                                 | 26,48 (7,62)*   | 0,31 (0,08)*  |                       | 4,34 (13,93)    | 0,05 (0,16)   |                       | 12,89 (8,56)    | 0,12 (0,08)   |                       |
| Caring                                    | 4,03 (6,63)     | 0,05 (0,08)   | 0,18 (0,01)           | -2,77 (17,74)   | -0,02 (0,16)  | 0,20 (0,11)           | 2,94 (8,07)     | 0,03 (0,08)   | 0,24 (0,07)           |
| <b>Native students</b>                    |                 |               |                       |                 |               |                       |                 |               |                       |
|   | 507,02 (1,32)   |               |                       | 492,92 (2,08)   |               |                       | 497,98 (10,09)  |               |                       |
| Competence                                | -26,48 (1,48)*  | -0,28 (0,02)* |                       | -36,41 (1,69)*  | -0,36 (0,02)* |                       | -38,71 (1,42)*  | -0,40 (0,01)* |                       |
| Confidence                                | 2,71 (1,76)     | 0,03 (0,02)   |                       | -1,59 (1,73)    | -0,02 (0,02)  |                       | -4,83 (1,94)    | -0,05 (0,02)* |                       |
| Connection                                | 2,77 (1,76)     | 0,03 (0,20)   |                       | 0,75 (1,60)     | 0,01 (0,02)   |                       | -2,97 (1,67)    | -0,03 (0,02)  |                       |
| Character                                 | 25,54 (1,73)*   | 0,27 (0,02)*  |                       | 24,33 (1,64)*   | 0,26 (0,02)*  |                       | 19,94 (2,31)*   | 0,19 (0,02)*  |                       |
| Caring                                    | -2,42 (1,68)    | -0,02 (0,02)  | 0,26 (0,07)           | 2,92 (1,71)     | 0,03 (0,02)   | 0,26 (0,01)           | 3,53 (1,85)     | 0,04 (0,02)   | 0,23 (0,10)           |

Notes. Owing to the nested sampling design, data were weighted with Final Student Weight. To increase the possibility of generalisation, we used adjusted R2. Multiple regression was conducted (forced entry method) on IDB Analyzer (IEA DPC, v.3.2). The assumption of multicollinearity was tested on all data sets and was not violated (the VIFs were lower than 10 and varied between 1.12 and 1.25). Statistically significant (p > 0,05) coefficients are marked with \*.

It can be seen that competence is the strongest predictor of reading achievement in all three countries for all three groups of students, where those students who deemed the PISA test more difficult reached lower reading achievement. In Slovenia, character was a statistically significant predictor of reading achievement in all three groups, where higher respect for different cultures was connected to higher reading achievement. Character was a statistically significant predictor of reading achievement also for native students in Hungary and Portugal and Hungarian first-generation migrant students.

The study reveals that competence strongly predicts reading achievement across student groups in Slovenia, Hungary, and Portugal, aligning with the PYD framework's emphasis on competence.

Students perceiving the PISA test as more challenging tended to have lower reading scores, highlighting the importance of self-perceived competence in academic tasks. Additionally, character emerged as a significant predictor of reading achievement, with respect for different cultures consistently linked to higher scores in Slovenia. This finding extends to native students in Hungary and Portugal, along with Hungarian first-generation migrant students, indicating cross-cultural relevance of character in academic success. These results affirm the universality of PYD principles across diverse contexts.

In conclusion, the study supports the PYD framework by emphasizing the crucial role of both competence and character in predicting reading achievement. Interventions targeting enhanced competence perceptions and fostering positive character traits, such as cultural respect, may contribute to improved reading outcomes and overall well-being across diverse student populations.

#### 4. Conclusions

In conclusion, our PISA 2018 analysis in Slovenia, Hungary, and Portugal aligns with the PYD framework, emphasizing competence and character as pivotal in shaping reading achievement. Competence strongly predicts reading achievement, highlighting the significance of students' self-perceived abilities, since those finding the PISA test challenging exhibit lower reading scores, underscoring the importance of perceived competence. Character, particularly respecting different cultures, consistently predicts higher reading achievement across diverse student groups. These findings emphasize the PYD framework's applicability in promoting positive outcomes in varied cultural contexts. Interventions targeting enhanced competence perceptions and positive character traits, including cultural respect, may enhance reading outcomes and overall well-being.

The cross-national approach provides insights for policymakers and educators, emphasizing the universal importance of competence and character in academic success among immigrant and native students. As we explore youth development intricacies, these findings underscore the potential impact of 5Cs-based interventions for positive development and resilience across diverse socio-cultural backgrounds.

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## REGULATORS OF DIGITAL STRAIN AND WELL-BEING IN THE ORGANIZATIONAL CONTEXT

**Eva Rošková, & Laura Šmatlavová**

*Department of Psychology, Faculty of Arts, Comenius University in Bratislava (Slovakia)*

### Abstract

Despite the benefits that information technologies bring to its users, the present working environment is becoming stressful for employees due to increasing digitalization and fast-changing modern technologies. The aim of this cross-sectional study was using Job Demands-Resources theory to verify the assumption that technostress inhibitors in the organization, a high level of resilience, and computer self-efficacy reduce the perception of digital load among employees and positively influence job related well-being, and technostress creators on the other hand increase employees' perception of digital load and are in a negative relationship with job related well-being. Research sample consisted of 183 employed people using information technologies at work, 87 men and 96 women, aged between 21 and 63 years. Participants were administered a battery of self-assessment online questionnaires via social media. Results showed that resilience, literacy facilitation, and technical support provision predicted positive job-related well-being, while negative job-related well-being was predicted by techno-overload, techno-invasion, techno-complexity, and techno-uncertainty. Resilience was found to be the only predictor that mitigated the effect of techno-stressors on positive well-being. Digital strain was predicted by techno-overload, techno-invasion, and techno-complexity, and computer self-efficacy was found to be the only significant predictor that mitigated the effect of techno-stressors on digital strain. Our findings have the potential to contribute to the creation of a better and healthier work environment, the optimization of technologic solutions, and the enhancement of employees' satisfaction and performance.

**Keywords:** *Techno-stressors, technostress inhibitors, resilience, computer self-efficacy, digital strain, job related well-being.*

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### 1. Introduction

Despite the benefits that information technologies bring to its users, the present working environment is becoming stressful for employees due to increasing digitalization and fast-changing modern technologies. The Job Demand-Resources (JD-R) model (Demerouti et al., 2001) provides a framework for understanding how job demands and job resources influence employees' work engagement (e.g., stress and burnout) and motivation for higher performance. Information and Communication Technologies (ICT) can function as both job demands and job resources. If ICT is considered a job demand, they have the potential to induce technostress and have adverse effects on employees' physical and psychological well-being. If organizations present and communicate ICT as tools to enhance employees' positions, they can also serve as job resources. In this function, ICT supports technical involvement, satisfaction, and performance, as well as improving the integration of work and private life (Pansini et al., 2023). Following the JD-R model, the aim of the study was to verify the assumption that technostress inhibitors in the organization (technical support, computer literacy support, user involvement in development) acting as job resources, a high level of resilience, and computer self-efficacy (personal resources) reduce the perception of digital strain among employees and positively influence job related well-being, and technostress creators (techno-overload, techno-complexity, techno-invasion, techno-variability, techno-uncertainty) acting as job demands on the other hand increase employees' perception of technological strain and are in a negative relationship with job related well-being. The hypothetical research model is depicted in Figure 1.

## 2. Method

### 2.1. Participants and procedure

Research sample consisted of 183 employed people using information technologies at work, 87 men and 96 women, aged between 21 and 63 years. Participants were administered a battery of self- assessment questionnaires (Techno-Strain, Technostress Creators and Technostress Inhibitors, Resilience Scale, Job Affective Well-Being Scale, Computer Self-Efficacy) online via social media.

### 2.2. Measures

We used the Technostress Creators (23 items) and Technostress Inhibitors Scale (13 items) (Ragu-Nathan et al., 2008) to measure facilitators and inhibitors of technological stress. Respondents rated items from both inventories on a five-point Likert scale from 1 (strongly disagree) to 5 (strongly agree).

To assess the level of individual resilience as a positive personality trait that enhances individual adaptation, we used the Slovak short version (14-item) of the Resilience Scale (Hajdúk, Mesárošová & Heretik, 2015). The items were rated on a 7-point scale (1 - strongly disagree, 7 - strongly agree).

To evaluate perceived work strain due to the use of ICT, we used a 4-item Technostrain scale (Ayyagari et al., 2011). The items were measured on a 7-point Likert scale, ranging from "never" (1) to "always" (7).

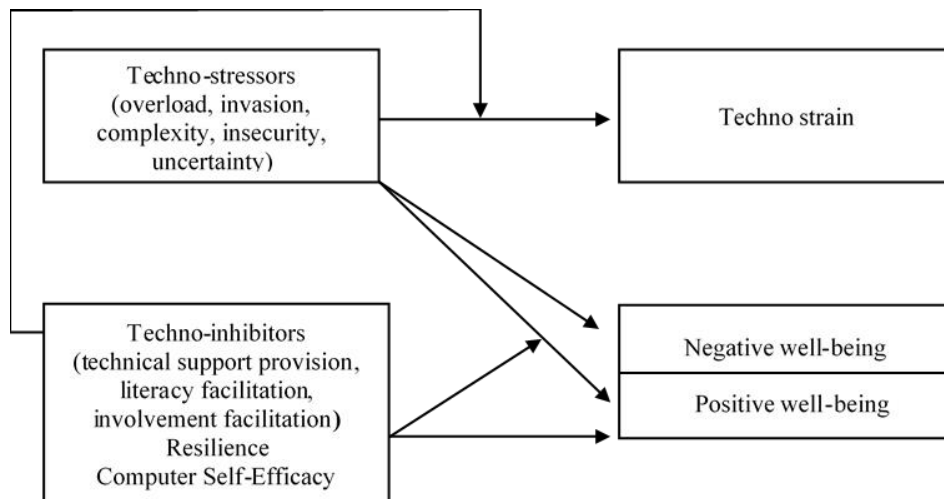
We measured positive and negative affect of respondents using a shortened version (12 items) of the Job Affective Well-Being Scale (JAWS) (Schaufeli & van Rhenen, 2006). The respondents answered on a five-point scale from "never" (1) to "very often/always" (5).

Computer self-efficacy was measured using a 12-item Computer Self-Efficacy Measure (Howard, 2014). Participants responded on a 5-point scale (1 - strongly disagree, 5 - strongly agree).

### 2.3. Statistical analysis

The data were analyzed using the statistical software JASP. Linear regression analyses were employed to test the hypotheses.

Figure 1. Model of the study.



## 3. Results

The results showed that technostressors explain 27.2% of the variance in negative affect ( $R^2 = 0.272$ ,  $p < .001$ ); statistical significance was demonstrated by predictors of techno-overload ( $\beta=0.200$ ,  $SE=0.089$ ,  $p=0.027$ ), techno-invasion ( $\beta=0.209$ ,  $SE=0.086$ ,  $p=0.016$ ), techno-complexity ( $\beta=0.268$ ,  $SE=0.079$ ,  $p < .001$ ), techno-variability ( $\beta=-0.196$ ,  $SE=0.081$ ,  $p=0.017$ ). For the dependent variable of positive affect, in relation to personal inhibitors, statistical significance was found with the predictor resilience ( $\beta=0.121$ ,  $SE=0.027$ ,  $p < .001$ ), from organizational inhibitors, statistical significance was found for predictors of computer literacy support ( $\beta=0.0246$ ,  $SE=0.094$ ,  $p=0.010$ ), and technical support ( $\beta=-0.193$ ,  $SE=0.096$ ,  $p=0.046$ ), ( $R^2 = 0.205$ ,  $p < .001$ ). Resilience proved to be significant as a protective individual factor, which was hypothesized to mitigate the effect of techno-stressors on

job-related well-being ( $\beta=0.097$ ,  $SE=0.028$ ,  $p < .001$ ). Techno-overload ( $\beta=0.266$ ,  $SE=0.110$ ,  $p=0.017$ ) and techno-complexity ( $\beta=0.284$ ,  $SE=0.096$ ,  $p=0.004$ ) predicted the experience of digital strain. Computer self-efficacy, as a significant personal resource, mitigated the effect of techno-stressors on digital strain ( $\beta=-0.188$ ,  $SE=0.045$ ,  $p < .001$ ).

#### 4. Discussion and conclusions

Technostress and personal inhibitors can be considered resources that help employees cope with stressors (Bakker & Demerouti, 2007). Inhibitors could play a dual role: they are positively associated with well-being and help to reduce the negative effects of technostressors on employee well-being (Ragu-Nathan et al., 2008). The results of our study partially confirmed these assumptions and demonstrated that resilience, computer literacy support, and technical support contributed to positive job related well-being, with resilience as a personal resource mitigating the negative effects of technostressors on positive well-being. In the case of digital strain, computer self-efficacy mitigated the effect of technostressors on digital strain. Organizational inhibitors in our study did not show statistical significance in relation to digital strain. Other factors or variables that we did not test in the study may play a more significant role. Some studies, for example, suggest that factors such as technology reliability (Ayyagari et al., 2011), innovation support (Tarafdar et al., 2011), or technology usefulness (Lee, 2016) can help reduce the level of technostress. In the study, we identified specific factors that negatively affect employee well-being and provide information for designing measures to minimize these risk factors. We highlighted factors that have the potential to alleviate the experience of digital strain and the impact of technostressors.

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# THE DURATION OF ADOLESCENT PSYCHOLOGICAL DISTRESS AND ITS ASSOCIATION WITH EMPLOYMENT CHARACTERISTICS IN EARLY ADULTHOOD: EVIDENCE FROM THE MILLENNIAL GENERATION IN NORTHERN TAIWAN

Tzu-Ling Tseng<sup>1</sup>, Chi Chiao<sup>1,2</sup>, & Wen-Hsu Lin<sup>1</sup>

<sup>1</sup>*Institute of Health and Welfare Policy, College of Medicine, National Yang Ming Chiao Tung University (Taiwan)*

<sup>2</sup>*Institute of Public Health, College of Medicine, National Yang Ming Chiao Tung University (Taiwan)*

## Abstract

**Introduction:** The indirect selection hypothesis proposes that early-life factors contribute to socioeconomic position and health status through individual social interaction and development. Accordingly, the main objective of the present study is to explore the impact of adolescent psychological distress on adult employment, including income and job satisfaction. Particular attention has been paid to the duration of adolescent psychological distress. To be specific, four research questions are investigated. Is the duration of adolescent psychological distress associated with their achieved employment status in early adulthood? Is there a correlation between adolescent psychological distress and receiving employment assistance in early adulthood? Among the employed sample, is the duration of adolescent psychological distress related to their adult income and job satisfaction? Furthermore, are there any gender differences in the aforementioned associations?

**Method:** We used data from the Taiwan Youth Project (TYP), a longitudinal panel survey that followed two cohorts of adolescents (i.e., 7th graders (J1) and 9th graders (J3)) from Northern Taiwan. In this study, we restricted to those who gave information on all major variables (N=1866) and the sub-sample of the employed (N=1693). We dichotomized (i.e., 2 = symptom) the mean score of the short version of the Symptom Checklist 90 Revised (SCL-90-R) measured in 9th grade, 12th grade, and senior year of college. The duration of adolescent psychological distress was created into three categories across these three measures: “no exposure” (no symptoms), “short duration” (symptoms at one-time point), and “long duration” (symptoms at two or more time points). At age 31, we assessed employment status (employed or not), employment assistance, income (monthly), and job satisfaction which was measured on a 4-point Likert scale ( $\alpha = 0.95$ ). In addition, several essential covariates were included (e.g., sex and family SES). We conducted linear regression analyses for continuous outcomes and logistic regression analyses for categorical outcomes.

**Results:** Young adults with a short duration of adolescent psychological distress were more likely than those who had no exposure to be employed during early adulthood (OR=1.96,  $p < 0.006$ ). Sex moderated the relationship between adolescent psychological distress and working status in the interaction analysis. Among the working sample, young adults with a long adolescent psychological distress duration were more likely to report poor overall job satisfaction than those with no exposure ( $\beta = -0.11$ ,  $p < 0.001$ ). A similar pattern was also observed for cognitive ( $\beta = -0.04$ ,  $p < 0.001$ ) and affective job satisfaction ( $\beta = -0.10$ ,  $p < 0.01$ ).

**Conclusion:** The association between job satisfaction in early adulthood is affected by the duration of psychological distress experienced in adolescence. The findings of this research highlight the need for support during the transition from adolescence to early adulthood for those who suffer from long-duration.

**Keywords:** *Adolescence, psychological distress, early adults, employment, longitudinal.*

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## 1. Introduction

The incidence and prevalence of mental health issues have increased over the past decade. In 2019, 12.5% of people worldwide were experiencing any mental disorder (WHO, 2022). In Taiwan, approximately 16.5% of adolescents aged 12 to 18 years were at risk of developing mental health

problems in 2018, with anxiety and depression being the most prevalent (Ministry Health and Welfare, Health Promotion Administration, 2021). Psychological distress experienced during adolescence may be critical for developing and accumulating professional knowledge and skills needed to function in adulthood. Therefore, it is essential to consider the long-term effects of psychological distress on employment characteristics in young adulthood.

## 2. Method

The dataset for the study was obtained from the panel surveys of the Taiwan Youth Project (TYP), a multi-wave longitudinal study initiated in 2000 when the participants were in the 7th grade (J1) and 9th grade (J3). The adolescent period included the 9th grade to the 12th grade and the senior year of college. The analysis used a mean age of 31 years for the adult period. The final sample size was 1866 participants, and the employed sample was 1693. Dependent variable: Employment status was measured as 1 for "have a paid job" and 0 for all other responses. Employment assistance: "Have you ever received employment insurance assistance?". Monthly income, respondents were asked to report their average monthly income. We dichotomized as the upper quartile (Q3), < NTD 60,000 or  $\geq$ NTD 60,000 for analysis. Overall, Job satisfaction ( $\alpha= 0.95$ ) was divided into eight domains (income, work environment, work content, working hours, boss, colleagues, welfare, and promotion) on a 4-point Likert scale. Independent variable: Psychological distress was measured by the short version of the Symptom Checklist-90 Revised (SCL-90-R). The optimal cutoff score of two was used (Derogatis, 1992). We classified the duration of psychological distress as "no exposure," "short duration" (psychological distress one time), and "long duration" (psychological distress two or more times) for the three assessments during adolescence (Groot et al., 2021). Confounder: Age, parental education level, family composition, and individual education level were assessed as potential confounders in the analysis. Self-rated health status was measured on a five-point scale. Logistic regression examined associations with employment status, insurance assistance, and monthly income. Multiple linear regression was used to analyze job satisfaction. Interaction effects were created to examine whether sex significantly affects the class membership of adolescent psychological distress with outcomes. Statistical analyses were conducted using STATA version 16.0.

## 3. Result

The demographics of the participants are shown in Table 1. Compared to young adults with no exposure to adolescent psychological distress, young adults with a short duration of psychological distress were more likely to be in the workforce (OR= 1.96, 95% CI 1.22–3.14) (Table 2). Sex moderated the relationship between adolescent psychological distress and working status in the interaction analysis. An analysis of individuals with paid employment indicated a significant inverse correlation between a long duration of psychological distress in adolescence and job satisfaction levels in early adulthood (Table 2).

## 4. Discussion

Adolescent psychological stress duration affects early adulthood labor market involvement differently. Short-duration stress correlates with higher engagement, while long-duration stress shows no significant correlation, contrasting prior studies (Veldman et al., 2022). Female adolescents experiencing distress are more involved in the labor market. The challenge model of Resilience theory (Zimmerman, 2013) suggests moderate adversity exposure builds coping skills, influenced by societal expectations and gender norms (Wenhold & Harrison, 2021). This sheds light on gender differences in stress response and coping strategies. Persistent adolescent psychological distress correlates with lower job satisfaction in early adulthood, aligning with previous research (Howard et al., 2014). This stress may accumulate over time, perpetuating job dissatisfaction and reducing employability, potentially leading to further marginalization in the labor market (Alaie et al., 2022). Several limitations should be acknowledged. Firstly, data constraints may have hindered our ability to control all potential confounding variables fully. Secondly, we did not explore adverse factors affecting mental health and labor outcomes in adulthood, which could serve as confounders or mediators in the relationship between adolescent distress and early adulthood employment characteristics. Lastly, reliance on self-reported measures for assessing psychological distress introduces the possibility of recall bias.

Table 1. Characteristics of the analytical sample, including the percent or mean (SD) [Range].

| Variable in baseline                            | Total sample (n=1866) | Employed sample (n=653) |
|---|-----------------------|-------------------------|
|   | n(%)                  | n(%)                    |
| Psychological distress                          |                       |                         |
| No exposure                                     | 537(28.78)            | 78(28.71)               |
| Short duration                                  | 532(28.03)            | 67(29.06)               |
| Long duration                                   | 866(43.19)            | 71(42.23)               |
| Sex   |                       |                         |
| Male  | 972(52.09)            | 91(34.22)               |
| Female  | 894(47.91)            | 715(45.78)              |
| Age (Baseline) [mean(SD); range: 14-19 years]   | 15.52(0.49)           | 15.32(0.48)             |
| Family composition                              |                       |                         |
| Living with 2 parents                           | 1657(88.86)           | 156(89.07)              |
| Not living with 2 parents                       | 209(11.14)            | 18(10.93)               |
| Parental education (either parent)              |                       |                         |
| Primary school or below                         | 134(7.18)             | 12(7.27)                |
| Middle high school                              | 393(21.06)            | 34(20.91)               |
| High school/associate's degree                  | 971(52.04)            | 88(52.45)               |
| Bachelor's degree or higher                     | 368(19.72)            | 28(19.37)               |
| Education                                       |                       |                         |
| High school or below                            | 229(11.79)            | 19(11.70)               |
| Associate's degree                              | 136(7.29)             | 12(7.21)                |
| Bachelor's degree                               | 1114(59.79)           | 100(59.48)              |
| Master's degree or higher                       | 396(21.22)            | 36(21.63)               |
| Self-rated health [mean(SD); range: 1-5]        | 3.46(0.81)            | 3.47(0.81)              |
| Employment status                               |                       |                         |
| Currently employed                              | 1093(59.73)           | 1093(100)               |
| Not employed                                    | 173(9.27)             | -                       |
| Employment assistance                           |                       |                         |
| Ever received                                   | 157(8.41)             | -                       |
| Have not received                               | 1709(91.59)           | -                       |
| Monthly income                                  |                       |                         |
| < NT\$ 60,000                                   | -                     | 135(80.27)              |
| ≥ NT\$ 60,000                                   | -                     | 34(19.73)               |
| Overall Job Satisfaction [mean(SD); range: 1-4] | -                     | 2.86(0.50)              |
| Cognitive Satisfaction [mean(SD); range: 1-4]   | -                     | 2.92(0.49)              |
| Affective Satisfaction [mean(SD); range: 1-4]   | -                     | 2.70(0.66)              |

Table 2. Prevalence and associations between the duration of adolescent psychological distress and employment outcomes in early adulthood.

| Variables                              | No exposure group<br>(N=537, 28.78%) | Short duration group<br>(N=523, 28.03%) | Long duration group<br>(N=806, 43.19%) | Short duration vs.<br>No exposure | Long duration vs. No<br>exposure | Sex interaction?  |
|--|--------------------------------------|---|--|-----------------------------------|----------------------------------|-------------------|
|  | N(%)                                 | N(%)                                    | N(%)                                   | OR/B [95% CI]                     | OR/B [95% CI]                    |                   |
| Employed                               | 486(28.71)                           | 492(29.06)                              | 715(42.23)                             | 1.96 [1.22, 3.14]**               | 1.07 [0.73, 1.56]                | significance      |
| Employment assistance receipt          | 34(21.66)                            | 39(24.84)                               | 84(53.50)                              | 1.09 [0.67, 1.76]                 | 1.50 [0.98, 2.31]*               | n on-significance |
| Income ≥NTD60,000                      | 97(29.04)                            | 93(27.84)                               | 144(43.11)                             | 1.12 [0.80, 1.57]                 | 1.27 [0.93, 1.74]                | n on-significance |
| Overall job satisfaction [mean (SD)]   | 2.92(0.50)                           | 2.88(0.47)                              | 2.79(0.51)                             | -0.03 [-0.09, 0.03]               | -0.11 [-0.17, -0.05]***          | n on-significance |
| Cognitive job satisfaction [mean (SD)] | 2.99(0.49)                           | 2.94(0.47)                              | 2.86(0.50)                             | -0.04 [-0.10, 0.02]               | -0.12 [-0.17, -0.06]***          | n on-significance |
| Affective job satisfaction [mean (SD)] | 2.85(0.66)                           | 2.82(0.63)                              | 2.73(0.67)                             | -0.02 [-0.10, 0.06]               | -0.10 [-0.18, -0.03]**           | n on-significance |

All models are adjusted for sex, age, family composition, parental education, participant education and self-rated health.  
\*p value<0.1, \*p value<0.05, \*\*p value<0.01, \*\*\*p value<0.001

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# OPTIMISING THE ELECTRONIC PATIENT RECORD: A HUMAN FACTORS AND SYSTEMS THINKING APPROACH

**Maeve Moran**

*Centre for Innovative Human Systems, School of Psychology, Trinity College Dublin (Ireland)*

## Abstract

Recent years have seen a rapid digitalisation of care in Irish hospital settings, with a particular focus on the introduction of an Electronic Patient Record (EPR). While the advantages of EPR over traditional paper health records are well-described in the literature, little consideration has been given to the impact of EPR implementation on clinical team working. Oftentimes, such systems have been introduced in organisations without preliminary understanding of the complex roles and relationships among clinicians, the points of contact in relation to care, and the shared clinical decision-making processes characteristic of multidisciplinary teams in acute care contexts. Human Factors psychology and Systems Thinking principles represent a critical lens through which to view and improve the usability and effectiveness of EPR systems. This mixed-methods doctoral research – to be conducted in a large urban teaching hospital – will incorporate a systematic literature review, anonymous online survey, semi-structured qualitative interviews, and non-participant ward round observations to inform a socio-technical systems analysis. This will be followed by participatory co-design sessions with information technology professionals and clinician (medical, nursing, and health and social care) end users. Findings from these initial studies will inform a small-scale pilot intervention. The ultimate aim of the body of research is to explore the potential for human-centred design methods to refine both the design and implementation of EPR, for the ultimate maximisation of user satisfaction, care quality, and patient safety.

**Keywords:** *Electronic patient record, user-centred design, human factors, socio-technical systems, health information technology.*

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## 1. Introduction

Recent years have seen a rapid digitalisation of care in Irish hospital settings, with a particular focus on the introduction of an Electronic Patient Record (EPR) (Ivanković, Jansen, Barbazza, Fernandes, Klazinga, & Kringos, 2022). While the advantages of EPR over traditional paper health records are well-described in the literature, recent studies have shown that usability of health IT systems remains suboptimal (Carayon & Hoonakker, 2019; Menachemi & Collum, 2011). Moreover, little consideration has been given to the impact of EPR implementation on clinical team working and patient outcomes in acute care contexts, such as ward rounds (Priestman, Sridharan, Vigne, Collins, Seamer, & Sebire, 2018). Ward rounds represent an important example of multidisciplinary care in hospital medicine, with many different types of clinicians working as a group (Morrison, Jones, Blackwell, & Vuylsteke, 2008). However, technology designed for a single user – like most EPR systems – poses challenges to group interaction on ward rounds, which are characterised by hierarchical relationships, diverse points of contact in relation to care, and complex shared clinical decision-making processes. As EPR systems continue to advance technologically – most notably integrating machine learning algorithms and natural language processing models – it is essential that clinical workflow be systematically considered in the design of health IT tools (Carayon, 2019; Mehta & Devarakonda, 2018). As such, Human Factors psychology and Systems Thinking principles, grounded in Socio-technical Systems Analyses, represent a critical lens through which to view and improve the usability and effectiveness of EPR systems.

## 2. Objectives

The overall aim of this doctoral research is to therefore enhance the use of the Electronic Patient Record to support multidisciplinary working on ward rounds in acute care settings. This will be achieved first by working to understand how the Electronic Patient Record is currently utilised to support clinical

functioning across healthcare teams in ward rounds in a major urban acute hospital. This analysis will be guided by Systems Thinking principles, seeking to elucidate the current barriers and facilitators to effective implementation of EPR. Next, a collaborative design approach (i.e., co-design) will be deployed in understanding and conceptualising future iterations of EPRs. Finally, research will explore what opportunities exist for EPR-embedded artificial intelligence systems (AIS) to improve clinical workflow.

### 3. Methods

The first proposed study will consist of a systematic literature review, followed by an anonymous online survey. The literature review will seek to evaluate the use of health information technology tools to support ward rounding in acute care settings. The mixed-methods survey will target medical, nursing, and health and social care professionals to explore EPR use in other acute hospitals worldwide. Following this information gathering, the second study will explore the current use of EPR on ward rounds in a major urban teaching hospital. This will be achieved via non-participant, ethnographic observation of ward rounding. These observations will inform one-to-one, semi-structured qualitative interviews with medical, nursing, and health and social care professionals. Interviews will explore clinicians' needs, attitudes, barriers, facilitators, and preferences in interacting with EPR, as well as perceptions of artificial intelligence and clinical decision support tools. Following this, participatory co-design sessions with clinician end users and healthcare information technology professionals will aim to conceptualise improved EPR systems and implementation support. Lastly, recommendations from these co-design sessions will be deployed within a small-scale pilot intervention in the same hospital.

### 4. Implications

This mixed-methods action research ultimately aims to explore the potential for human-centred design methods to refine both the design and implementation of EPR, for the ultimate maximisation of user satisfaction, care quality, and patient safety. In addition to furthering the body of literature on EPR specifically, this doctoral research will have implications in the fields of human-computer interaction, user-centred design, and Human Factors and Systems Thinking psychology in healthcare.

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# NATION DIVIDED: HOW DO DEMOCRATIC AND REPUBLICAN VOTERS EXPERIENCE SHARED REALITY?

**Marta Roczniowska, & Ewelina Purc**  
*Institute of Psychology, SWPS University (Poland)*

## Abstract

Shared reality with the nation (SR-N) is a subjective experience of having one's thoughts, emotions, and beliefs in common with other members in their nation. Shared reality is an important human motive because it serves basic relational and epistemic needs (i.e., it helps individuals feel connected with others and understand the world around them). However, escalating polarization poses a threat to achieving shared reality, jeopardizing social well-being. Research suggests that conservatives prioritize conformity and seek consensus in their group, leading to a stronger desire for shared reality. This paper describes a study involving 571 U.S. citizens, in which we examined how SR-N relates to national pride, trust, and loneliness. The results revealed that Democratic voters experienced less shared reality, lower national pride, and higher loneliness than Republicans. Path analysis showed that shared reality mediated relationships between political orientation and national pride, loneliness, and trust. This study underscores disparities in social well-being between Democratic and Republican voters, highlighting shared reality's role in mitigating polarization's adverse effects.

**Keywords:** *Shared reality, polarization, trust, Democrats, Republicans.*

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## 1. Introduction

In their interactions with the world, humans seek to establish a sense of *shared reality*, the perceived commonality of feelings or beliefs about a particular target, such as a controversial issue, an event that took place, or another person. Shared reality is an important human motive because it serves basic relational and epistemic needs: It helps individuals feel connected with others and understand the world around them (Higgins, 2019). Research has primarily focused on shared reality in a dyadic context (e.g., between romantic partners or a pair of strangers; Rossignac-Milon, 2019). Yet, as a fundamental factor underlying cooperation and coordination in social interactions, shared reality is also vital for groups. One such group could be the nation.

Shared reality with the nation (SRN) refers to a subjective experience in which an individual's thoughts, emotions, and beliefs align with those of other members of their nation (Purc et al., in press). With the growing polarization in societies (Boxell et al., 2022), the ability to achieve a shared reality with one's nation members is being threatened. This state of affairs may have debilitating consequences for citizens' social well-being. Experimental research has demonstrated that when individuals believe that their preferences for the direction their society should take is congruent (vs. incongruent) with those of others in their country, they feel closer to other nation members and report stronger motivation to act together with them for the country's development (Purc & Roczniowska, 2024).

Because research has indicated that conservatives are more likely than liberals to prioritize values of conformity, possess a desire to share reality with like-minded others, and perceive strong within-group consensus (Stern et al., 2014), we expected liberal (e.g., Democratic) voters to be exposed to the negative consequences of polarization to a greater extent. Therefore, we hypothesized the following:

*Hypothesis 1.* Democratic voters experience lower shared reality with their nation than Republican voters.

*Hypothesis 2.* Being a Democratic (vs. Republican) voter is linked with higher loneliness, lower trust, and lower pride, and this relationship is mediated via weaker experience of shared reality with one's nation.

## 2. Methods

### 2.1. Participants

Participants ( $N = 571$ ) were U.S. citizens and inhabitants recruited via Prolific Academic. Participants were remunerated for their time. Of the sample, 50% were women, 48.5% were men, and 1.5% were nonbinary. The mean age of the sample was 42 years ( $SD = 15$ ). Regarding ethnicity, most of the participants identified as White/Caucasian (75%), followed by Black/African American (8.4%), Latino/Hispanic (5%), and White/Sephardic Jew (3.2%). The sample comprised 250 Democratic voters, 276 Republican voters, and 45 people who supported neither of these major parties.

### 2.2. Procedure and materials

The participants completed an online survey with instruments measuring shared reality with the nation (five items; Purc et al., in press), national pride (one item; Haerpfer et al., 2020), trust (one item; Haerpfer et al., 2020), loneliness (three items; Hughes et al., 2004), and political preferences (three items; Cichocka & Jost, 2014). All multi-item instruments exhibited high reliability, as indicated by Cronbach's alpha (above .90).

## 3. Results

All analyses were conducted in JAMOVI (The jamovi project, 2023). The results demonstrated that, compared to Republican voters ( $M = 4.13$ ,  $SD = 1.19$ ), Democratic voters ( $M = 3.50$ ,  $SD = 1.25$ ) expressed a significantly less pronounced experience of shared reality with their nation members,  $t(524) = 5.91$ ,  $p < .001$ , Cohen's  $d = .52$ , 95% CI [.34, .69]. This result supports Hypothesis 1.

In the next step, we conducted a path analysis, testing the expected mediations with bias-corrected bootstrapping (1,000) to estimate standard errors. Table 1 presents the obtained results.

Table 1. Results of the path analysis demonstrating relationships between political orientation, shared reality with the nation, national pride, trust, and loneliness.

| Outcome        | Predictor                          | Standardized Estimate | SE    | 95% Confidence Intervals |        | p      |
|----------------|------------------------------------|-----------------------|-------|--------------------------|--------|--------|
|                |                                    |                       |       | Lower                    | Upper  |        |
| Loneliness     | Political Orientation <sup>a</sup> | -0.107                | 0.044 | -0.196                   | -0.022 | 0.015  |
| Loneliness     | Shared Reality                     | -0.239                | 0.046 | -0.320                   | -0.142 | < .001 |
| Trust          | Political Orientation <sup>a</sup> | -0.041                | 0.039 | -0.112                   | 0.037  | 0.287  |
| Trust          | Shared Reality                     | 0.476                 | 0.044 | 0.387                    | 0.559  | < .001 |
| Pride          | Political Orientation <sup>a</sup> | 0.412                 | 0.038 | 0.336                    | 0.484  | < .001 |
| Pride          | Shared Reality                     | 0.380                 | 0.038 | 0.296                    | 0.452  | < .001 |
| Shared Reality | Political Orientation <sup>a</sup> | 0.250                 | 0.042 | 0.172                    | 0.337  | < .001 |

Note. <sup>a</sup> coding: 0—Democratic voter, 1—Republican voter

The results demonstrated that Republican voters felt lonely less frequently and felt more trust toward other U.S. citizens than Democratic voters but did not differ in trust. Supporting Hypothesis 2, the mediation analyses demonstrated indirect effects of shared reality between the political orientation and loneliness (estimate = -0.600, 95% CI [-0.095, -0.035]), trust (estimate = 0.119, 95% CI [0.076, 0.170]), and pride (estimate = 0.095, 95% CI [0.060, 0.132]).

## 4. Discussion

In this study, we illustrate the differences between Democratic and Republican voters regarding the facets of social well-being, such as trust, pride, and loneliness. Research has demonstrated that conservative political ideology is linked to valuing conformity and perceptions of in-group consensus (Stern et al., 2014), producing a stronger need to share reality with others. We extended these findings by

demonstrating that Democratic voters actually experience lower shared reality with their nation, feeling that they less frequently have a joint perspective or see a world in a similar way to other U.S. citizens, compared to Republican party voters. The lowered shared reality has consequences for the frustration of their need for relatedness and their epistemic needs, resulting in weaker national pride, lower trust in other U.S. citizens, and stronger loneliness.

Research on long-term trends in affective polarization shows that in the United States, polarization has increased more dramatically over the past 40 years than in the eight other studied countries (Boxell et al., 2022). Combined with these findings, our research shows that Democratic voters experience the political polarization in their country more severely, which threatens their well-being. The fact that conservatives have a stronger preference for certainty, conformity, and group cohesion (Stern et al., 2014) may serve a protective function, filtering out signals of disparities and differences in opinion.

We must acknowledge several limitations. First, this study reports cross-sectional findings; therefore, any causality claims are limited, and the results of the mediation analysis should be considered with caution. Second, several measures of outcomes are single-item instruments, and although they have been successfully applied in the World Values Survey (Haerpfer et al., 2020), this construction makes it impossible to assess their reliability. Third, because polarization has been shown to be strong and growing in the United States, it would be valuable to conduct a similar study in a context where polarization has decreased, such as Sweden and Germany (Boxell et al., 2022).

## 5. Conclusions

Whereas previous work on shared reality has focused mostly on dyads, our study captures shared reality in a more collective context, investigating the phenomenon of shared reality with a larger social group (i.e., one's nation). Using the lens of shared-reality theory, we explain that possessing a stronger desire to obtain shared reality with the nation among Republican voters may buffer the negative consequences of growing societal polarization. Exploring why and how citizens experience that they think and feel similarly to others in their country could offer ways to bridge gaps during times of growing divisions.

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## SYRIAN REFUGEES IN BRAZIL: THE ISSUE OF GROUPS

Carlos Antonio Massad Campos<sup>1</sup>, & Edinete Maria Rosa<sup>2</sup>

<sup>1</sup>PhD student, Graduate Program in Psychology (PPGP) of the  
Federal University of Espírito Santo (UFES) (Brazil)

<sup>2</sup>Professor, Department of Social Psychology and Development (DPSD) and the Graduate Program  
in Psychology (PPGP) of the Federal University of Espírito Santo (UFES) (Brazil)

### Abstract

Refugees are people who are outside their countries because of a well-founded fear of persecution for reasons of race, religion, nationality, political opinion, or social participation, and who are unable (or unwilling) to return home. According to data released by the Brazilian National Committee for Refugees in its eighth edition (BRASIL, 2023), between January 2011 and the end of 2022, Brazil had identified 65,840 people as refugees in Brazil. Among the main countries of nationality or habitual residence of people identified as refugees in the period from 2011 to 2022, Syria stood out, with a total of 3,762 asylum requests granted, following Venezuela, which stood out in recent years. Syrian refugees have acquired great magnitude and representation in the issue that involves the policy of reception and insertion of refugees throughout the world and in Brazil. The arrival of these refugees in Brazil caused different reactions and behaviors, including potential conflicts. Different habits and beliefs generated responses from curiosity to rejection, creating a collective thought and a way of looking at these individuals as a cohesive and undifferentiated group, often based on the idea of uniformity, ignoring their singularity, as they are quite different from each other. This work aimed to discuss, especially through reading the work done by Jesuño (2004) and Cichoski (2017), the matter of how we see certain groups and their common and right away generalization that naturalizes this view with often preestablished standards without there being reflection and better knowledge about this group of people. This practice ignores the differences that exist within groups and tends to uniformize thoughts and conducts towards them, including providing the basis for the construction of public policies aimed at certain categories of people. Reading Bourdieu (Ortiz, 1983), in turn, opens a new horizon for understanding relationships in the same group and between distinct groups through field theory and the correlation of forces that is established from the symbolic capital acquired by the various social actors involved in these relations.

**Keywords:** *Social psychology, human rights, refugees.*

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### 1. Introduction

Refugees are people who are outside their country because of a well-founded fear of persecution for reasons of race, religion, nationality, political opinion or social participation, and who are unable (or unwilling) to return home. According to the data released by the National Committee for Refugees in its 8th edition (Brasil, 2023), between January 2011 and the end of 2022, Brazil had recognized 65,840 people as refugees.

Among the main countries of nationality or habitual residence of people recognized as refugees in the period from 2011 to 2022, Syria stood out, with a total of 3,762 asylum requests granted, second only to Venezuela, which stood out in recent years. Syrian refugees have acquired great magnitude and representation in the issue that involves the policy of reception and insertion of them throughout the world and also in Brazil. The arrival of these refugees in Brazil provoked different reactions and behaviors, including potential conflicts. Different habits and beliefs generated everything from curiosity to rejection, creating a thought and a way of looking at these individuals as a cohesive and undifferentiated mass, often based on the idea of uniformity, ignoring their singularity, as they are very different from each other.

## **2. Objective**

This work aimed to discuss the issue of how we see certain groups and their common, automatic generalization that naturalizes this view with standards that are often pre-established without there being reflection and better knowledge about this group of people.

## **3. Method**

To achieve the proposed objective, theoretical research was used seeking to understand and provide space for discussion about group and intergroup relations.

### **3.1. Data collection procedure**

As a data collection procedure, texts from Jesuíno (2004), Cichoski (2017) and Bourdieu (Ortiz, 1983) were selected.

### **3.2. Data analysis procedure**

To carry out data analysis, the following steps were followed: I) Selection of texts. II. Pre-Analysis, first reading of the material, in order to define, within the possibilities of texts, those that could contribute to the discussion of the proposed theme to achieve the objective of this research. Next, III) Material Exploration was carried out, which consisted of readings of the selected texts, and finally IV) Treatment of results and interpretation, in which, based on the reading of the texts, the aim is to propose inferences and interpretations, thus building knowledge that makes it possible to deepen knowledge about group and intergroup relations, especially Syrian refugees in Brazil.

## **4. Results and discussion**

Reading the texts by Jesuíno (2004) and Cichoski (2017), made it possible to understand the question of how we see certain groups and their common, automatic generalization that naturalizes this view with patterns that are often pre-established without there being reflection and better knowledge about this group of people. This practice ignores the differences that exist within groups and tends to standardize thoughts and conduct towards them, including providing the basis for the construction of public policies aimed at certain categories of people. Reading Bourdieu (Ortiz, 1983) in turn opens a new horizon for understanding relationships in the group and between groups through field theory and the correlation of forces that is established from the symbolic capital acquired by the various social actors involved in these relations.

Jesuíno (2004), when addressing the characteristics of the group, especially its size, says, “Conventionally, small groups are those in which members can interact with each other, around common problems. Passengers in a queue for public transport or a ticket office are a cluster, a serialized group in Sartre's (1960) terminology. An incident that gives them a common destiny can transform this simple aggregate into a group” (p. 299).

Syrian refugees, living their daily lives, were caught up in the civil war and were forced to abandon everything, to their homes to work, possessions and to leave their country to survive. These were gathered by an incident that gave them a common destiny: refuge.

Reading and discussing the topic of groups and its intersection with the topic of refugees makes us reflect on the concept of group and its applicability. Public policies in various areas are designed and applied based on group concepts. What we call a group is complex and demands a broader analysis and understanding far from the almost natural applicability we make of the term. For Bourdieu (Ortiz, 1983), the idea of a group is linked to habitus, which demonstrates the social place we occupy and the social capital we have. This aggregates and disaggregates people, groups are constructed according to a pre-established social identity and marked by the social place that the subject occupies. Occupying a socially recognized place represents belonging to a certain class of individuals, who had and still have access and permission to participate in this environment.

The refugee is a stranger, subject to local, pre-determined values, normally different from their own, which can be a factor of social exclusion. It is of essential importance to understand their relationship with the citizens of the countries that receive them.

### *Acknowledgments*

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## FATHER-CHILD RELATIONSHIP, PARASYMPATHETIC NERVOUS SYSTEM ACTIVITY AND AGGRESSIVE BEHAVIOR

Yu Gao<sup>1</sup>, Yonglin Huang<sup>2</sup>, & Wei Zhang<sup>3</sup>

<sup>1</sup>Department of Psychology, Brooklyn College, City University of New York (USA)

<sup>2</sup>Graduate Center, City University of New York (USA)

<sup>3</sup>Department of Psychology, New Jersey City University (USA)

### Abstract

Parent-child relationship has been widely known to have impacts on child's behavior. However, most of the prior work has focused on mothers, often neglecting fathers. In this study, we investigated the effect of father-child relationship on child's aggressive behavior, and the extent to which this association is influenced by child's autonomic arousal level. Adolescents (13-16 years; n = 83) from the community reported on their aggressive behavior and their relationship with both parents. Their respiratory sinus arrhythmia (RSA), a measure of parasympathetic nervous system activity, were recorded during a 2-min rest period. We found that father discord was significantly associated with both proactive and reactive aggression, and the effect was stronger among children who had high resting RSA. Discordant relationship with mothers were not associated with either type of aggression, although mother discord was found to be associated with proactive aggression, but only in those with high RSA. Findings highlight the role of fathers in child rearing and provide further support to the biological sensitivity to the context theory (Boyce & Ellis, 2005) by demonstrating that negative parent-child relationships contribute to children's aggressive behavior among those who are more biologically susceptible to the impact of environment.

**Keywords:** Aggression, biosocial, biological sensitivity to context, arousal, fathers.

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### 1. Introduction

Parent-child relationship and parenting have been widely known to have impacts on child's aggressive behavior, but the emphasis has mainly focused on mothers. Among the few that have examined the impact of fathers, evidence indicates that negative father-child relationships are associated with greater child conduct problems (Murray et al., 2014). However, little is known if father's role may differ in predicting two subtypes of aggression: reactive and proactive aggression. Reactive aggression refers to aggressive behavior that is characterized by impulsive, hostile, affective, and uncontrolled angry responses to frustration or provocation, whereas proactive aggression is predatory, controlled, and instrumental and is used to obtain rewards (Crick & Dodge, 1996; Raine et al., 2006). Although both types have been associated with antisocial behavior, it has been argued that they may have distinct etiologies (Hubbard et al., 2010). One aim of the current study was to explore if father-child relationship has different impacts on two types of aggression.

In addition, the effect of parenting on child's behavior may be a function of child's sensitivity to the environment. It has been theorized that children with higher physiological reactivity are more sensitive to their social environments (Boyce & Ellis, 2005; Ellis & Boyce, 2008). That is, highly reactive children display poorer behavioral and health outcomes in harmful contexts such as adverse neighborhoods or discordant parent-child relationships. Studies have demonstrated that respiratory sinus arrhythmia (RSA) may moderate the relationship between parenting and child's behavioral problems. For example, negative interaction with parents were found to predict lower adolescents' empathic concerns for boys with high resting RSA (Van der Graaff et al., 2016), and environmental quality negatively predicted toddlers' aggression for those with high resting RSA (Eisenberg et al., 2012). RSA reflects the activity of the parasympathetic nervous system (PNS) that regulates 'rest-and-digest' functions that maintain homeostasis and support relaxation and restoration (Porges, 2007), and high levels of RSA may support youth's active engagement with social environments, reflecting more sensitivity to environmental influences. Therefore, we hypothesized that the effect of father-child relationship quality on child's aggression be stronger for those with high RSA.

## 2. Methods

### 2.1. Participants

Adolescents ( $n = 83$ , age 13-16 years; 54% female) and their main caregivers from the community were invited to the laboratory for a 2-h testing. Youths completed questionnaires to report their aggression and parent-child relationships. Psychophysiological data were recorded during the 2-m rest period when they were asked to sit still. All families were debriefed in the end and compensated for their participating. Procedures were approved by the institutional IRB.

### 2.2. Measures and procedures

**2.2.1. Reactive-proactive aggression questionnaire.** (RPQ; Raine et al., 2006). It includes 11 items assessing reactive aggression and 12 items assessing proactive aggression. For each item, they rated the frequency of occurrence on a scale of 0 (never), 1 (sometimes), or 2 (often). The internal reliability was 0.82 and 0.81 for reactive and proactive aggression scale, respectively.

**2.2.2. Network of relationship inventory – relationship quality version.** (NRI-RQV; Buhrmester & Furman, 2008). It is a 30-item scale that asks about positive (e.g., companionship, intimate disclosure, satisfaction, emotional support, and approval) and negative dimensions (e.g., conflict/quarreling, criticism, pressure, dominance, exclusion) regarding youths' interpersonal relationships. They rate how frequently each trait occurs in their relationship with each parent using a 5-point Likert scale from "1=Never/Hardly at all" to "5=Always/Extremely Much". The sum of all negative dimensions for each parent was computed to create a Discord score for that parent. In our sample, the Cronbach's alpha values were .77 and .78 for mother discord and father discord, respectively.

**2.2.3. RSA data acquisition and quantification.** All physiological data were obtained using a BIOPAC MP 150 system (BIOPAC Inc., CA). RSA was derived from the ECG100C amplifier with a band pass filter of 35 Hz and 1.0 Hz and a RSP100C respiration amplifier with a band pass filter of 1.0 Hz and 0.05 HZ. RSA was computed in milliseconds as the difference between the minimum and the maximum R-R intervals during respiration.

## 3. Results

### 3.1. Father discord and proactive/reactive aggression

Hierarchical linear regression showed that after controlling for sex, age, and race, father discord was positively associated with proactive aggression ( $B = 0.58$ ,  $SE = 0.28$ ,  $t = 2.06$ ,  $p = .04$ ). The father discord by RSA interaction was also significant ( $B = 0.02$ ,  $SE = 0.01$ ,  $t = 2.89$ ,  $p = .005$ ). Simple slope analysis showed that high father discord was associated with more proactive aggression at high ( $B = 1.37$ ,  $SE = 0.45$ ,  $t = 3.06$ ,  $p < .001$ ) but not low RSA ( $B = -0.26$ ,  $SE = 0.34$ ,  $t = -0.76$ ,  $p = .45$ ). See Figure 1a.

Similarly, father discord was positively associated with reactive aggression ( $B = 1.73$ ,  $SE = 0.68$ ,  $t = 2.54$ ,  $p = .01$ ). The discord by RSA interaction was significant ( $B = 0.03$ ,  $SE = 0.01$ ,  $t = 2.53$ ,  $p = .01$ ). High father discord was associated with more reactive aggression at high ( $B = 3.39$ ,  $SE = 1.08$ ,  $t = 3.15$ ,  $p < .001$ ) but not low RSA ( $B = -0.05$ ,  $SE = 0.82$ ,  $t = -0.06$ ,  $p = .96$ ). See Figure 1b.

### 3.2. Mother discord and proactive/reactive aggression

Mother discord was not significantly associated with proactive aggression ( $B = 0.31$ ,  $SE = 0.33$ ,  $t = 0.95$ ,  $p = .35$ ). The mother discord by RSA interaction was significant ( $B = .02$ ,  $SE = .01$ ,  $t = 2.72$ ,  $p = .008$ ). High mother discord was associated with more reactive aggression at high ( $B = 1.20$ ,  $SE = 0.53$ ,  $t = 2.26$ ,  $p = .03$ ) but not low levels of RSA ( $B = -0.60$ ,  $SE = 0.39$ ,  $t = -1.55$ ,  $p = .12$ ). See Figure 1c.

Mother discord was not significantly associated with reactive aggression ( $B = 1.08$ ,  $SE = 0.80$ ,  $t = 1.35$ ,  $p = .18$ ). Finally, the mother discord by RSA interaction was marginally significant ( $B = 0.03$ ,  $SE = 0.02$ ,  $t = 1.70$ ,  $p = .09$ ).

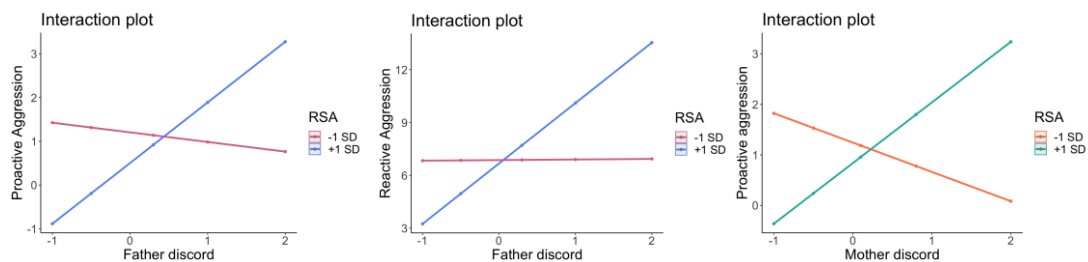
## 4. Discussion

The purpose of the study was to examine if father-child relationship quality was differently associated with the reactive and proactive aggression, and whether RSA moderates the relationships. Our findings indicated that father discord was linked to aggression, regardless of type, and that the effects

were significant for youths with high RSA but not low RSA. Mother's discord was also associated with proactive aggression in those with high RSA only. These findings are consistent with the biological sensitivity to the context theory (Boyce & Ellis, 2005) and provide further evidence that high resting RSA may reflect high levels of sensitivity to environmental influences.

It is important to note that both parent-child relationship and child's aggression were reported by youths. We cannot tease out the possibility that children who score high on aggression tend to rate their relationship quality with parents, in particular with father, as low. This could in turn partly explain our finding that the effect of father discordant was stronger than that of mother discord. Another limitation is its moderate sample size, which prevented us from examining unique effects for each sex. Future longitudinal studies with larger samples are needed to investigate the directionality and sex-specific effects.

Figure 1. Father discord was associated with proactive (a) and reactive (b) aggression at high RSA only. Mother discord was associated with proactive aggression at high RSA only (c).



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# ARTIFICIAL INTELLIGENCE-GENERATED ADVICE: HARD TO IDENTIFY AND PERCEIVED TO BE BETTER THAN HUMAN ADVICE

**Otto J. B. Kuosmanen, & Tove I. Dahl**

*Department of Psychology, UiT The Arctic University of Norway (Norway)*

## Abstract

**Background:** The rapid advancement of Artificial intelligence (AI), exemplified by models like Chat-GPT, has increasingly made AI a go-to source for advice, raising urgent questions about the quality of AI advice, and whether we can distinguish it from human resources.

**Aim:** We conducted a study investigating participants' ability to differentiate between human and AI advice and two studies exploring the advice-giving capabilities of GPT models in general life advice.

**Method:** A web-scraping script was made with Python. With this, we created a database of quality advice requests-answer pairs extracted from the website [reddit.com/r/advice](https://www.reddit.com/r/advice). We then prompted AI models to answer these advice requests. This resulted in a dataset of 50 advice requests, each paired with four advice answers (Human, GPT3, GPT3.5 GPT4). In Study 1, participants were presented with advice requests along with advice. Their task was to indicate whether they believed the advice originated from a human or AI. In Study 2, participants were presented with advice requests accompanied by two pieces of advice. One piece of advice was always the human response, the other was randomly chosen from the AI models. Participants had to indicate which advice they found the most helpful. In Study 3 participants were presented with an advice request and advice from a random source. They were asked to rate the advice quality on four 1-item- scales (Helpfulness, Effectiveness, Appropriateness, Sensitivity).

**Results:** Study 1: Participants could only correctly identify above the chance level ( $p < .0001$ ) the human advice. Study 2: Participants preferred AI advice over human advice ( $p < .0001$ ). Study 3: Participants rated the AI advice quality significantly higher than human advice (Advice Quality,  $p < .00001$ ; Helpfulness  $p < .01$ , Appropriateness  $p < .01$ , Sensitivity  $p < .0001$ , Effectiveness  $p = .079$ ).

**Keywords:** *Advice, helpfulness, perception, artificial intelligence, AI detection.*

## 1. Introduction

The emergence of generative artificial intelligence (AI) has brought about the release of large language models to the public. A prominent example is Chat-GPT, which gained 100 million users within its first month. Meanwhile, like the early days of the internet, people are increasingly turning to AI for information and advice (Carpenter, McDade, & Childers 2018; Golia, 2021). While we know this is happening, little is known about the quality of the AI output. This trend raises urgent questions regarding the quality of the content generated by AI systems if its content is different, and if we can even distinguish it from human resources.

Zellers et al. (2021), found that humans did not prefer AI advice produced by GPT-3, preferring it over human advice in only 4 % of cases. The best-performing model in the study T5-11B was preferred over human advice in only 14 % of cases, and this was a model that was specifically trained with advice data. Our study examines if this preference has changed with the new advances in AI technology.

## 2. Objectives

We investigate the advice-giving capabilities of humans, GPT-3, GPT-3.5, and GPT-4, in the domain of general life advice. Can people distinguish AI from human advice, do they have a preference for the advice given, and are there any differences in the advice quality between humans and AI across the GPT models?

### 3. Method: Web scraping and data preparation

We decided to follow in the footsteps of Zellers et al.'s (2021) approach of using reddit.com/r/advice. A Python script was created to identify reddit.com/r/advice posts that had more than 20 likes. In total 27000 advice posts were processed by the script between the dates: 03.05.2023 - 04.19.2023 of which 325 posts matched the criteria set in the script. The questions and the best-rated advice of all these posts were saved, of these, 50 were randomly selected and new advice replies were generated by the three AI models. In total that gave us 50 advice requests with 4 matching advice each.

The AI advice was longer than the human, especially GPT4; the average length for AI was 230 words, and humans 88 words. Also, the AI replies often used numbered lists. The AIs were therefore prompted to rewrite the advice without numbered lists. From that, a Python script selected 15 questions that had the least difference in length between AI and human advice, reducing (human advice mean = 82 words, and AI mean = 135 words). Using these 15 questions we created studies 1 and 3. For study 1 we additionally removed answers that revealed the source in the answer, leaving 9 questions.

#### 3.1. Measures

In study 3: we used a perceived advice quality measure with 4 items (helpfulness, effectiveness, appropriateness and sensitivity) rated on a 7-point Likert type scale (Goldsmith & MacGeorge, 2000; Jones & Burlinson 1997; MacGeorge et al., 2004). Overall perceived advice reply quality was estimated using the mean of the 4 items.

#### 3.2. Design

Study 1: We explored how well people can distinguish between AI and Human advice. We had 74 participants (female=39, male=28, other=6), yielding 579 observations. In random order, we presented 9 advice requests with a randomly chosen advice. Participants were asked to guess if the advice was AI or human.

Study 2: We explored the helpfulness of AI advice. This was in essence a replication of Zellers et al 2021. We presented a total of 15 advice requests to 66 participants (female=37, male=26, other=3), yielding 327 observations. To these requests, we had advice from 3 AI models (GPT3, GPT3.5, and GPT4) and 1 human advice (best-rated advice from Reddit). In the survey participants randomly received 6 requests, accompanied with human advice and advice from one of the AI models (in random order). The participants were asked to indicate the more helpful advice. Participants were blind to the AI involvement.

Study 3: We explored the quality of AI advice. Sixty-five participants (female=39, male=23, other=3), yielding 1332 observations, 333 when equating one observation as the full 4 item scale rating. From the sample of 15 questions, participants were randomly presented with 6 advice requests with a randomly chosen advice. Participants were asked to rate the advice on a 7-point-Likert scale on 4 scales (Helpfulness, Effectiveness, Appropriateness, and Sensitivity). Participants were blind to the AI involvement.

### 4. Results

We chose the significance level of  $p < .05$ , but for each study we used an adjusted significance threshold (Adjusted Alpha), according to the Bonferroni principle of multiple comparisons ( $0.05 / \text{comparisons}$ ).

Study 1 (Adjusted Alpha =  $p < .01$ ): Participant observations revealed that people can identify human advice above chance level (Chi-Square,  $p < .01$ ). In AI advice there was a non-significant trend towards correct identification, AI total ( $p = .021$ ), GPT3 ( $p = .676$ ), GPT3.5 ( $p = .33$ ), GPT4 ( $p = .017$ )

Study 2 (Adjusted Alpha =  $p < .0125$ ): Participant observations revealed a preference for AI advice over human advice (Chi-Square,  $p < .0125$ ). When comparing each model separately against the human advice, we found a preference of AI advice in models, GPT 3 ( $p < .0125$ ) and GPT3.5 ( $p < .0125$ ). Although GPT4 ( $p = .029$ ) showed a trend towards significance it did not pass the adjusted significance threshold.

Study 3 (Adjusted Alpha =  $p < .0038$ ): Participant observations quality ratings revealed that AI advice was rated significantly higher than human advice (Mann Whitney,  $p < .0038$ ). We found this to be true for Helpfulness ( $p < .0038$ ), Appropriateness ( $p < .0038$ ), and Sensitivity ( $p < .0038$ ), but not Effectiveness ( $p = .079$ ). Direct comparisons of each AI model against human advice, revealed significant differences in GPT3.5 and GPT4 ( $p < .0038$ ), while GPT3 ( $p = .0089$ ) was not significantly different in quality. Additionally, testing revealed that there are significant differences between the AI models in Advice Quality (Kruskal Wallis,  $p < .0038$ ). Specifically in the subscale, Helpfulness ( $p < .0038$ ). Non-significant trends were found in Effectiveness ( $p = .0179$ ), Appropriateness ( $p = .0268$ ), and Sensitivity ( $p = .039$ ).

Figure 1.

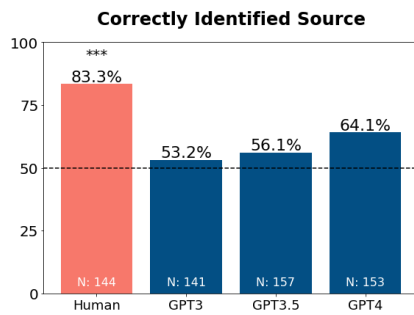


Figure 2.

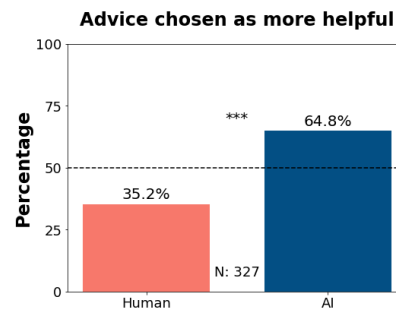


Figure 3.

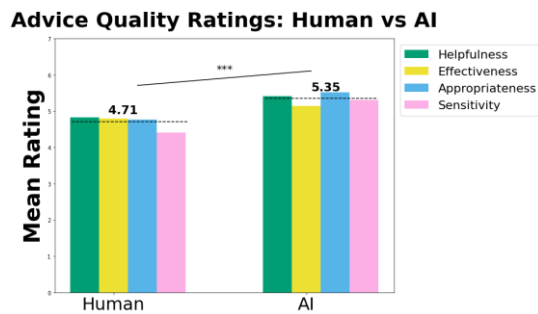
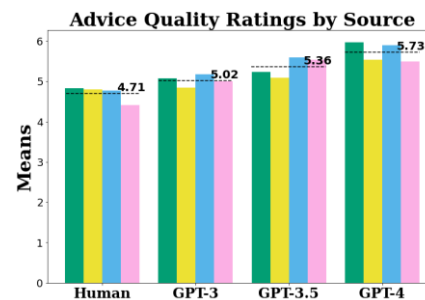


Figure 4.



## 5. Discussion

Our research shows that the quality of AI advice has dramatically improved in recent years, to the point where people find it hard to distinguish from human advice and even perceive AI advice to be of better quality. These results show an evolution since Zellers et al. (2021) and were recently confirmed in another recent study (Howe et al. 2023), that was published while our investigations were in motion. Our results carry with them big implications. It's still unclear if following AI advice will lead to better outcomes. This fact is alarming since the outcomes of following AI advice, though perhaps preferred, are still unknown. This might increase the impact of the technology in everyday life. What's our next step?

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# MOTIVATION, DECISION-MAKING, AND SELF-REGULATORY PROCESSES IN THE DEVELOPMENTAL TASKS' ATTAINMENT OF EMERGING ADULTS

**Simona Ďurbisová**

*Department of Psychology, Faculty of Arts, Pavol Jozef Safarik University in Kosice (Slovakia)*

## Abstract

The period of emerging adulthood, between the ages of 20 and 30, is characterized by discovery, new possibilities but also instability, which is often reflected in the fluctuation of life plans due to a number of external or internal factors. Planning and achieving goals in key life domains can thus pose a great challenge during this period. However, until now, not much research attention has been paid to the specificities of goal attainment during the transition to adulthood. Therefore, in a larger longitudinal study of 150 participants aged 20 to 30 years ( $M = 23.5$ ;  $SD = 3.6$ ), we aimed to examine the moderating effect of decision-making styles on the relationship between autonomous motivation, controlled motivation, and changes in effort and action crisis related to goal attainment in core life domains of emerging adulthood. A statistically significant moderating effect of rational decision-making style was found on the relationship between controlled motivation and changes in effort to achieve educational goals. Furthermore, a significant moderating effect of intuitive decision-making style was found (a) on the relationship between autonomous motivation and changes in effort to achieve personal growth goals, (b) on the relationship between autonomous motivation and changes in action crisis when achieving educational and relationship/family goals, and (c) on the relationship between controlled motivation and changes in action crisis when achieving relationship/family goals. Additionally, a statistically significant moderating effect of avoidant decision-making style was found on the relationship between controlled motivation and changes in action crisis when achieving personal growth goals. As such, the results pointed out the importance of understanding the motivation and decisional tendencies of emerging adults in the context of the changes that can subsequently occur in exerting effort and overcoming obstacles when achieving goals from various life domains. These findings contribute to existing knowledge and can not only stimulate further research studies but can also be applied in training activities aimed at self-development and adaptive techniques used for setting and achieving goals of emerging adults.

**Keywords:** *Motivation, decision-making, action crisis, emerging adulthood.*

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## 1. Introduction

The achievement of specific goals is influenced by different factors. A variety of previous research studies and literature have discussed the importance of motivation, effort, and self-regulation in connection with the process of goal attainment (Achtziger & Gollwitzer, 2018). Recent studies have also focused on decision-making processes playing important part as well (e.g., Bavolar, Lovas & Durbisova, 2021). However, there are other variables that also need to be considered, such as the life stage and its specificities impacting not only the goal people set to achieve but also the way they go about it and changes they make in the process. One of the more challenging life periods is the emerging adulthood, a period regarding individuals aged 20 to 30 years. This period is often characterized by discovery and new possibilities as well as confusion and instability related to fluctuating life plans (Luyckx, De Witte, & Goossens, 2011). These plans are influenced by all kinds of internal and external forces, which oftentimes lead to difficulties in achieving some goals, especially if they are of existential nature and relate to the core of identity of individuals. Key areas in which the emerging adults set most of the important goals include education, personal growth, relationships, and work. All these areas are more or less regarded by each person and may require different strategies when achieving specific goals, especially if the individual experiences an action crisis when putting a lot of effort into achieving a goal while being repeatedly faced with overwhelming obstacles and failures (Brandstätter & Schüler, 2013).

The objective of this study was to examine the role of decision-making styles in connection to relationship between motivation and changes in effort and action crisis when achieving specific goals in all key life areas of emerging adults.

## 2. Methods

A hundred and fifty young adults aged 20 to 30 years ( $M = 23.5$ ;  $SD = 3.6$ ) participated in a larger longitudinal study. Part of this study focused on decision-making styles, motivation, effort, and action crisis related to goals in key life domains such as education, personal growth, relationships and work. Every variable except for decision-making styles was measured in both phases of the research in order to see changes that can occur in time. There was a one-year gap between the two phases.

The mostly used three (out of five) decision-making styles – rational, intuitive and avoidant style – were measured using relevant statements from the General Decision-Making Style scale (GDMS; Scott & Bruce, 1995). Each decision-making style was measured by five items.

The autonomous and controlled motivation was measured using four items (Milyavskaya et al., 2015; Sheldon & Elliot, 1999) as used in previous related studies (e.g., Bavolar, Lovas & Durbisova, 2021).

The effort was measured by an item asking how hard the participants are trying to achieve the goal (Werner et al., 2016), which was used in previous related studies as well (e.g., Bavolar, Lovas & Durbisova, 2021).

The action crisis was measured by six items composing the Action Crisis Scale (ACRIS; Brandstätter & Schüler, 2013).

## 3. Results

Presented are the most significant results of moderation analyses. Significant moderation effects of the decision-making styles on relationships between motivation and changes in effort and action crisis have been found in three goal domains (Table 1). The intuitive decision-making style was moderating the relationship between autonomous motivation and a) changes in action crisis in education domain, b) changes in effort in personal growth domain, and c) changes in action crisis in relationships domain. This style was also found to moderate the relationship between controlled motivation and changes in action crisis in relationship domain. The rational style was moderating the relationship between controlled motivation and changes in effort in education domain. Lastly, the avoidant style was moderating the relationship between controlled motivation and changes in action crisis in personal growth domain.

Table 1. Moderation effect of decision-making styles on changes in effort and action crisis.

| Goal domain     | Changes / Style    | Motivation and decision-making styles |      |       |      |                    |                       |      |       |      |
|-----------------|--------------------|---------------------------------------|------|-------|------|--------------------|-----------------------|------|-------|------|
|                 |                    | Autonomous motivation                 |      |       |      | Changes / Style    | Controlled motivation |      |       |      |
|                 |                    | b                                     | SE   | Z     | p    |                    | b                     | SE   | Z     | p    |
| Education       | Action crisis / IS | 0,16                                  | 0,08 | 2,03  | 0,04 | Effort / RS        | -0,03                 | 0,01 | -2,05 | 0,04 |
| Personal growth | Effort / IS        | -0,05                                 | 0,02 | -2,02 | 0,04 | Action crisis / AS | 0,14                  | 0,05 | 2,78  | 0,00 |
| Relationships   | Action crisis / IS | 0,20                                  | 0,07 | 2,89  | 0,00 | Action crisis / IS | -0,10                 | 0,04 | -2,26 | 0,02 |

Note: AS – avoidant style, IS – intuitive style, RS – rational style

As can be seen from Table 2, the relationship between the motivation and changes in effort and action crisis differ according to the levels of rational, intuitive and avoidant decision-making style. Regarding educational goals, changes in action crisis rise with the rise of intuitive decision-making style when there is higher autonomous motivation. On the other hand, when higher controlled motivation is present when pursuing educational goals, changes in effort rise with the rise of rational style up until its average level and then decline when it reaches high levels. Regarding goals of personal growth, changes in effort decline with the rise of intuitive decision-making style when there is higher autonomous motivation, but changes in action crises rise with the rise of avoidant decision-making style when there is higher controlled motivation. Regarding relationship goals, changes in action crisis rise with the rise of intuitive decision-making style when there is higher autonomous motivation, but they decline when there is higher controlled motivation.



Table 2. The effects of motivation on changes in effort and action crisis on different levels of decision-making styles.

| Goal domain     | Motivation | Changes / Style    | Levels of decision-making style |       |      |         |       |      |              |       |      |
|-----------------|------------|--------------------|---------------------------------|-------|------|---------|-------|------|--------------|-------|------|
|                 |            |                    | Low (-1SD)                      |       |      | Average |       |      | High (+ 1SD) |       |      |
|                 |            |                    | b                               | Z     | p    | b       | Z     | p    | b            | Z     | p    |
| Education       | Autonomous | Action crisis / IS | 0,11                            | 0,25  | 0,79 | 0,69    | 2,52  | 0,01 | 1,26         | 3,79  | 0,00 |
|                 | Controlled | Effort / RS        | 0,18                            | 2,16  | 0,03 | 0,07    | 1,44  | 0,14 | -0,02        | -0,39 | 0,69 |
| Personal growth | Autonomous | Effort / IS        | 0,29                            | 1,34  | 0,17 | 0,04    | 0,38  | 0,70 | -0,19        | -1,59 | 0,11 |
|                 | Controlled | Action crisis / AS | -1,48                           | -4,13 | 0,00 | -0,83   | -3,20 | 0,00 | -0,19        | -0,54 | 0,58 |
| Relationships   | Autonomous | Action crisis / IS | -0,41                           | -0,95 | 0,34 | 0,39    | 1,03  | 0,30 | 1,21         | 2,32  | 0,02 |
|                 | Controlled | Action crisis / IS | 0,35                            | 1,33  | 0,18 | -0,05   | -0,23 | 0,81 | -0,45        | -1,56 | 0,11 |

Note: AS – avoidant style, IS – intuitive style, RS – rational style

#### 4. Discussion

Successful goal attainment depends on a variety of factors, such as changes in self-regulatory strategies and decision-making. Even though these connections were previously researched, few of the studies focused on them in the context of turbulent period of emerging adulthood. This study therefore focused on shedding some light on these processes with regards to different goal domains.

The results suggest various moderating effects of decision-making styles on relationship between autonomous and controlled motivation and changes in action crisis and effort of people when attaining goals related to education, personal growth, and relationships. The intuitive decision-making style was found to have an important effect in all three goal domains, especially when autonomous motivation was present. Based on these results it is possible to conclude that regulating one's process of attaining specific goals is connected not only to the nature of one's motivation but also to the preferred decision-making style, the life domain the goal relates to, and the specifications of one's current life period. Our results support and build upon previous findings of connections between decision-making styles and action crisis, motivation and effort (e.g. Gambetti & Giusberti, 2019; Bavolar, Lovas & Durbisova, 2021).

While there are some limits of the study related to used methods, length of the study, no comparison with participants of different ages etc., these findings provide important insight into the complexity and specifications of the processes that might affect successful attainment of goals in various life domains and periods. As such, this paper contributes to better understanding of these processes and can stimulate further research and practical application of training self-developmental activities.

#### Acknowledgments

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# ASSESSING 12-MONTH-OLD INFANTS' ABILITY TO ATTEND TO OCCLUSION CHANGE-DETECTION EVENTS IN A VIRTUAL SETTING

**Cecilia Nam, & Sandra Waxman**

*Department of Psychology, Northwestern University (USA)*

## Abstract

By 12-months, the way infants remember and represent an object is heavily affected by the way the object is named. When infants are shown different objects with different labels from the same category, they encode the distinctions among them, but not when they are given the same labels. Evidence has supported that infants' sensitivity to changes in objects is affected by how they mentally categorize the objects. But how robust are their representations of that object? To address this, the LaTourette & Waxman paradigm will be adapted by adding an occlusion task to test 12-month-old infants' representation of the distinct individuals in a virtual setting. But first, to ensure that even at only 12 months, infants are able to attend to these objects in a virtual environment, we ran a pilot experiment showing only the occlusion tasks to confirm that infants are able to look at the paradigm significantly above chance. 80 infants were shown four occlusion events in the virtual laboratory Lookit. In the occlusion event, one object was soon hidden from view with a descending screen and then reappeared as either the same or a different object. Infants' looking behavior was then coded frame-by-frame to determine whether the infant was attentive during the trials. Data supported that infants, even at 12-months, are attentive enough to this occlusion task even in a virtual setting. With the data from the pilot study in mind, the next phase of this study implemented the full paradigm: infants are shown four different objects labeled with either a same or distinct name, and then the objects are soon occluded from view, reappearing as either the same or a different object. Via the violation-of-expectations paradigm, infants tend to look longer at events they find interesting or surprising. Thus, we predict that infants who are given a distinct label – but not the same label – will be surprised at the object change trials. Data collection, still underway, is promising. If they are given distinct labels, remembering the individual object would suggest that infants' representation of the object is robust enough to be retained over an occlusion task. Further investigation comparing infants' abilities to detect the object change depending on whether they are given distinct or consistent names will provide an additional test for this claim.

**Keywords:** *Attention, occlusion, virtual, development, infancy.*

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## 1. Introduction

Based on the violation-of-expectations paradigm, infants look longer at unexpected than expected events because they find them to be more interesting or surprising (Xu & Garcia, 2008). By 12 months, infants are long able to understand that even when an object is covered from view by another object, the first object still exists and should not change in identity once it reappears in sight (Baillargeon & Wang, 2002). Thus, when the occluder disappears but the object changes in featural or categorical quality, infants should be surprised because this event violates their expectations.

LaTourette & Waxman (2020) found that infants encode distinctions between objects when they are labeled with different names but encode commonalities when they are labeled with the same name. Thus, we predict that if infants are primed with distinct labels for different objects, they will be more surprised when an object changes to another during an occlusion event than if they are primed with the same labels for those different objects. However, are infants, at 12 months, able to attend enough to these occlusion change-detection tasks in a virtual setting for there to even be an effect based on labeling?

In this present study, we tested whether infants can pay attention to a virtual occlusion task. Their ability to look at the virtual event significantly above chance will signify that they are capable of paying attention and supporting future research comparing the virtual effects of labeling on their ability to detect change in occlusion tasks.

## 2. Method

### 2.1. Participants

Participants were full-term infants between 11.5-12.5 months ( $n = 80$ ,  $M = 11.73$  months, 44 female, 36 male) with English as their primary language and exposed to a second language less than 45% of the time all recruited from the United States. This sample size was procured based on a power analysis assuming  $\alpha = 0.05$  and an effect size of  $d = 0.88$ , and we aimed for 99% power, yielding a target sample size of 48 infants per condition.

### 2.2. Procedure

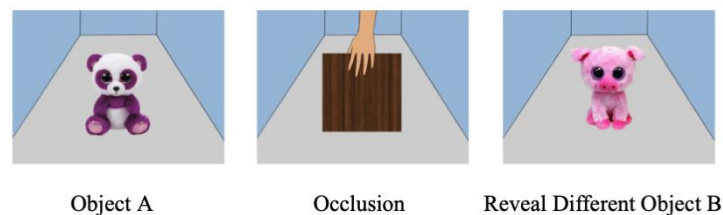
The study was administered virtually via Lookit (Scott & Schulz, 2017). Parents were asked to hold the infant in their laps facing the screen, and they were also asked to keep their eyes closed or looking away from the screen to prevent accidentally affecting where the infant looks. The infants were then presented with the material on the computer screen, with their looking behavior being recorded through the webcam.

### 2.3. Design

The study utilized a 2 (change outcome) x 1 (looking time) within-subjects design. All infants were shown a total of 4 stimuli videos each lasting 38 seconds, two of which were a within-change outcome and two of which were a no-change outcome. The order in which they were shown the different change outcomes was counterbalanced.

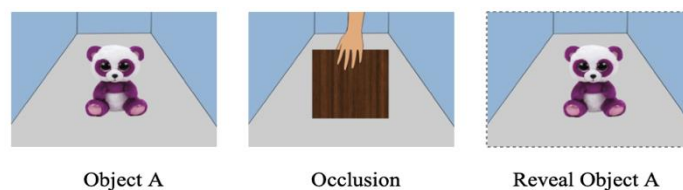
**2.3.1. Within-Change Outcome.** In a Within-Change Outcome Change Detection, Object A was shown for 4 seconds, and then an occluder screen came down and hid Object A from view for 5 seconds. Afterwards, the occluder screen was lifted for 1 second to reveal a different Object B. This new object was shown on the screen for 20 seconds, and then a hand came into the screen and removed the object from view.

Figure 1. Within-Change Outcome Event.



**2.3.2. No-Change Outcome.** In a No-Change Outcome Change Detection, Object A was shown for 4 seconds, and then an occluder screen came down and hid Object A from view for 5 seconds. Afterwards, the occluder screen was lifted for 1 second to reveal the same Object A. The object was shown on the screen for 20 seconds, and then a hand came into the screen and removed the object from view.

Figure 2. No-Change Outcome Event.



### 2.4. Coding

Infants' looking time throughout the trials served as the main dependent variable throughout this study. Looking behavior was coded using offline eye-tracking software Datavyu (Datavyu Team, 2014) to confirm that they were attending to each trial. Trained condition-blind coders manually aligned the participant videos to the stimuli videos then went frame-by-frame to code for whether the infant was looking on or away from the screen throughout the trials.

## 3. Discussion

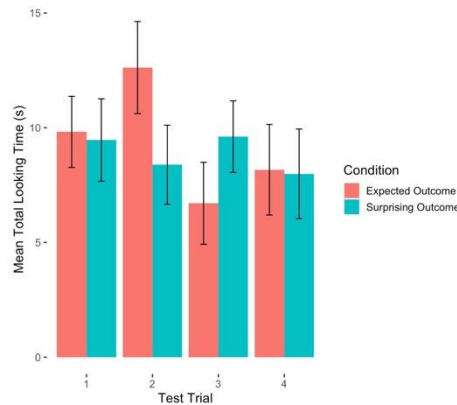
The purpose of this experiment was to test whether 12-month-old infants would be attentive enough in a virtual platform for there to be an effect once variables become manipulated for a later full study. The results showed that infants were, in fact, highly attentive when looking at the occlusion

change-detection trials even in this virtual environment. During the pilot, because there was no prior priming of the infants to the different objects, the infants' overall looking time did not significantly differ across the expected ( $M = 9.330$ ,  $SD = 5.962$ ,  $P < 0.0001$ ) and surprising ( $M = 8.864$ ,  $SD = 5.756$ ,  $P < 0.0001$ ) outcomes; however, looking in both conditions were significantly above chance, supporting the hypothesis that infants would still be attentive in a virtual laboratory environment.

Figure 3. Table of Looking Times for All Trials.

|   | Condition          | Subphase | mean      | sd       | sem      | lower     | upper     |
|---|--------------------|----------|-----------|----------|----------|-----------|-----------|
| 1 | Expected Outcome   | Pair1    | 9.820707  | 5.358232 | 1.546788 | 8.273919  | 11.367496 |
| 2 | Expected Outcome   | Pair2    | 12.622896 | 6.010305 | 2.003435 | 10.619461 | 14.626331 |
| 3 | Expected Outcome   | Pair3    | 6.707071  | 5.364450 | 1.788150 | 4.918921  | 8.495221  |
| 4 | Expected Outcome   | Pair4    | 8.170163  | 7.115628 | 1.973520 | 6.196643  | 10.143683 |
| 5 | Surprising Outcome | Pair1    | 9.463636  | 5.673281 | 1.794049 | 7.669587  | 11.257685 |
| 6 | Surprising Outcome | Pair2    | 8.389277  | 6.204305 | 1.720764 | 6.668513  | 10.110042 |
| 7 | Surprising Outcome | Pair3    | 9.610723  | 5.629732 | 1.561407 | 8.049316  | 11.172129 |
| 8 | Surprising Outcome | Pair4    | 7.992424  | 5.518617 | 1.951126 | 6.041298  | 9.943550  |

Figure 4. Graph of Mean Looking Times.



The next phase of this study will implement the full LaTourrette and Waxman paradigm, adding two of the trials from this pilot study as a test to compare infants' performance in detecting change based on how the objects during the learning trials are named. Data collection, still underway, is promising.

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## TIME PRESSURE AND INSTINCTIVE RESPONSES TO DRIVING DILEMMAS

Jacqueline Miller<sup>1</sup>, Dong-Yuan Wang<sup>1</sup>, Dan Richard<sup>1</sup>, & Aiyin Jiang<sup>2</sup>

<sup>1</sup>*Department of Psychology, University of North Florida (United States)*

<sup>2</sup>*Department of Construction Management, University of North Florida (United States)*

### Abstract

The rapid advancement of autonomous vehicles (AVs) raises concerns about how machines make moral decisions. When a collision is unavoidable, the nature and way AVs crash become a critical ethical issue because AV algorithms select a specific course of action from a range of options. The Asilomar AI Principles advocate that machine ethics should align with human values. With no consensus on ethical standards, studying how humans make decisions in moral dilemmas aims to bridge the gap between human morality and moral algorithms' design. This line of research serves as a crucial reference for the development of ethical algorithms for autonomous vehicles. Previous research demonstrates a discrepancy in whether participants always make utilitarian choices (u-choices) in driving. This study explored how time pressure influenced decision-making, particularly utilitarian decision-making in driving dilemmas. U-choices maximize lives saved and minimize harm. Participants were given 2 s, 3 s, or 5 s to decide how to respond to a driving dilemma in which one pedestrian (ped) was on one side and five peds were on the other side of the road. Thirty-one undergraduates participated in the study and responded to driving moral dilemmas at three different levels of time pressure, and drivers' behavior was measured and recorded in a STISIM driving simulator. The findings highlight the prevalent trend of individuals generally favoring u-choices, except during the first scenario. Moreover, decreased time pressure did not significantly increase the percentage of u-choices, but u-choices increased if excluding the first scenario (with 5 s to respond, one ped on the left). Future studies are needed to determine how participants' exposure to moral dilemmas influences decision-making. Additionally, we investigated whether drivers rely on an instinctive response in driving dilemmas. Most participants responded toward the direction that was consistent with u-choices. The findings have potential implications and applications in aligning machine ethics with human values.

**Keywords:** *Autonomous vehicles, decision making, time pressure, moral dilemmas, driving simulator.*

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### 1. Introduction

Six hundred eighty-four accidents involving autonomous vehicles (AVs) were reported as of January 26, 2024 in California alone (*Autonomous Vehicle Collision Reports*, n.d.). Human errors are claimed to cause most crashes. However, pedestrians and human drivers sharing roads with AVs poses a challenge for AV safety (Schwall et al., 2020; Goodall, 2014). Therefore, collisions will likely persist into the near future (Lin, 2016). If a collision is unavoidable, then how a vehicle crashes and what it crashes into could be lifesaving (Lin, 2016), and an AV's actions becomes an ethical issue with an outcome determined by its algorithm (Goodall, 2014). AV algorithms are still undergoing development, and the limited consensus on which ethical standards AV algorithms should prefer presents a challenge in developing AVs with ethical standards aligning with the Asilomar AI principles' suggestions that machine ethics should align with human values (Morandín-Ahuerma, 2024). Utilitarianism corresponds to choices that minimize harm and maximize the overall good (Lin, 2016). Previous research often suggests that humans favor utilitarian choices (u-choices) in driving moral dilemma scenarios (Gao et al., 2020: 73% u-choices; Pradhan et al., 2019 survey: 68.75% u-choices). However, Samuel et al. (2020) found that only 43% of participants made u-choices, revealing a situation where the majority did not make u-choices with 2 s time pressure. Likewise, in Pradhan et al.'s (2019) simulator study, only 43.75% made u-choices, which is lower than similar studies (e.g., Gao et al., 2020). Time pressure and response preferences/reflexes potentially influence moral dilemma decision making (Frank et al., 2019; Samuel et al., 2020; Suter & Hertwig, 2011; Pradhan et al., 2019). This study investigates how these two variables may contribute to the controversial results of previous studies (e.g., Gao et al., 2020; Samuel et al., 2020; Pradhan et al., 2019).

## 2. Methods

**Participants:** Thirty-one undergraduate students (mean age = 20.42 years) were recruited from an online system (SONA) who had or were eligible for a driver's license and had not experienced simulator related concerns before (i.e., motion sickness, epilepsy, etc.). Some students were compensated with extra course credit. The university's Institutional Review Board (IRB) approved the study.

**Materials:** This study used the STISIM-Model 100 driving simulator along with a Logitech steering wheel/brake/gas pedal, and a Dell 17-inch monitor. Simulated driving was programmed on a two-lane undivided suburban road. Participants completed a practice run and an experimental run. The settings were similar between the two runs, except in the experimental run, the vehicle was set in cruise mode (speed around 35 mph). There are two types of scenarios (six pedestrian-type scenarios and six vehicle-type scenarios) in the experimental run. Only pedestrian-type scenarios' data was reported here. In the pedestrian scenarios, participants responded to two dilemma types: one with a pedestrian on the left and five pedestrians on the right side of the road (1PedLeft) and one where the two pedestrian groups switched their locations (1PedRight). In each scenario, pedestrians on either side of the road started walking across the street at 2 s, 3 s, or 5 s Time to Collision (TTC) from the participant's car. Demographic and impulsiveness data were collected in two Qualtrics surveys. After signing a consent form, participants completed a practice simulation, then randomly selected/completed one of the two surveys, the experimental run, and the other survey. Scenarios were presented in this order: 1PedLeft, 5 s TTC → 1PedRight, 3 s TTC → 1PedRight, 5 s TTC → 1PedRight, 2 s TTC → 1PedLeft, 3 s TTC → 1PedLeft, 2 s TTC.

**Data Organization:** For each scenario, data recording started 2 s before the pedestrians started walking across the road. Participants' response types were categorized in terms of utilitarian response-type (u/non-u) and turning direction (left, right, or straight) based on the simulator's raw data. Participants' reaction time (RT), total proportion of u-choices, the proportion of u-choices and RT for each TTC condition, and the number of left/right choices for each scenario were also derived from the raw data. If a participants' steering wheel turned less than 25 degrees in a scenario, their response was classified as moving straight. If the steering wheel turned over 25 degrees, the response was categorized as left or right. U-choices were defined as responses that did not result in hitting the five pedestrian group.

## 3. Results

The results showed that the mean percentage of participants that made u-choices was about 77% across all scenarios. There was no main effect of TTC on the percentage of u-choices,  $p = .272$ . But the tendency was that percentage increased as TTC increased, except for the scenario with the lowest u-choices (1PedLeft, 5 s TTC), which was also the first scenario in the test run. Another 2 x 3 ANOVA was conducted to test TTC and u-choices (u/non-u choices) on the pedestrians injured, which was another measure for u-choices. Both the main effects for TTC and u/non-u choices were marginally significant, ( $p = .07$  &  $.08$ ), but the interaction was significant,  $F(2, 60) = 5.56$ ,  $p = .006$ ,  $\eta^2 = .16$ , indicating that there was no advantage for u-choices for 2 or 3 s TTC, but there was an advantage for u-choices for 5 s TTC (see Table 1).

Table 1. Number and Percentage of Utilitarian Choices at Each Time-to-Collision and Scenario Type.

| Time to collision (TTC) | One Pedestrian Left   | One Pedestrian Right | Mean | Mean Pedestrians Injured (U/Non U) |
|-------------------------|-----------------------|----------------------|------|------------------------------------|
| 2 s                     | 20 (65%) <sup>a</sup> | 26 (84%)             | 75%  | 1.55/1.16                          |
| 3 s                     | 22 (71%)              | 29 (94%)             | 83%  | 1.90/.81                           |
| 5 s                     | 15 (48%)              | 31 (100%)            | 74%  | .90/1.19                           |
| Mean                    | 61%                   | 93%                  | 77%  | 1.45/1.05                          |

<sup>a</sup> Similar to Samuel et al.'s (2020) condition which obtained 43% u-choices. Coding similarly the percent u-choices in this study was 62%.

The number of responses (left or right) was analyzed with scenario type and response direction as within-subject variables. There was no significant difference in the number of left ( $M = 1.0$ ) or right responses ( $M = .69$ ),  $F(1, 30) = 3.32$ ,  $p = .079$ , but the means suggested participants responded left more often. The main effect of dilemma type was significant,  $F(1, 30) = 10.11$ ,  $p = .003$ ,  $\eta^2 = .25$ , indicating participants responded significantly more when 1PedLeft than when 1PedRight ( $M_s = .98$  &  $.71$ ). The interaction was also significant,  $F(1, 30) = 27.01$ ,  $p < .001$ ,  $\eta^2 = .47$ , demonstrating that when one

pedestrian was on the left ( $M_s = 1.61$  &  $0.35$ ), participants were more likely to respond left (u-choice), and when one pedestrian was on the right ( $M_s = 1.03$  &  $0.39$ ), participants were more likely to respond right (u-choice). Results further indicated participants selected u-choices in both pedestrian scenario types.

#### 4. Discussion & conclusion

The current simulator study explored drivers' decision-making during unavoidable collisions with pedestrians, focusing on how time pressure and instinct influenced utilitarian tendencies. While TTC did not influence u-choices significantly, if excluding the lowest u-choice scenario (1PedLeft, 5s TTC), u-choices generally increased and pedestrians injured decreased as time pressure decreased. This result was consistent with the general finding that as time pressure decreased, u-choices increased. Swerving response tendencies did not suggest instinctive responses (left or right) under any scenarios, but swerving responses did support utilitarian tendencies. Although participants were more likely to make swerving responses to scenarios with 1PedLeft than 1PedRight, this difference indicates that ethical issues were incorporated into decision making because making swerving responses was more likely to avoid hitting five pedestrians (leading to u-choices). The significant interaction of response direction and ped location further reinforces support for utilitarian tendencies. Policy makers and AI programmers should consider the general preference for u-choices our results suggest and implement these preferences into their designs/regulations. The closest scenario in our study to Samuel et al.'s (2020) scenario was 1PedLeft, 2 s TTC. Next, we recoded our data similarly to Samuel et al.'s (2020) data (left vs. right). Our percentage of u-choices (62%) was still higher than their percentage (43%), but our first scenario's results (48%: 5 s TTC, 1PedLeft) were comparable to the results of Samuel et al.'s (2020) first and only scenario (43%). The relatively low percentage of u-choices may be due to the fact that participants did not have previous exposure to similar pedestrian scenarios. However, another similar study conducted by Gao et al. (2020) showed a higher percentage of u-choices (73%) for their only scenario in study 1, with a set up similar to Samuel et al. (2020)'s scenario 1 and our 1PedLeft, 2s TTC scenario. Even though all studies had a practice run, in Gao et al.'s (2020) study, participants were told explicitly that brakes may fail, and they did not mention whether participants experienced a similar scenario in their practice run. Differences between practice runs may contribute to the results' differences. Therefore, when conducting research regarding decision-making with driving dilemmas, scenario exposure may influence results and should be controlled in research design.

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# LONELINESS AND MOTOR CONTROL: FIELD AND LAB INVESTIGATIONS

Eyal Rosenstreich<sup>1,2</sup>, & Ayelet Dunsky<sup>1</sup>

<sup>1</sup>*School of Human Movement & Sport, Levinsky-Wingate Academic Center (Israel)*

<sup>2</sup>*Department of Behavioral Sciences, Peres Academic Center (Israel)*

## Abstract

Loneliness has been argued to burden the cognitive system, diverting attentional resources towards the search for social cues. Loneliness has been also linked to impaired motor control, evident in slower walking speeds and compromised postural balance. However, previous studies connecting loneliness with motor control predominantly involved older adults and did not consider the role of cognitive load. This study was designed to explore the relationship between loneliness and motor control in young and middle-aged adults, taking into account cognitive resource availability. In Study 1, 123 participants aged 21-59 underwent field evaluations involving static and dynamic balance tasks within single- and dual-task paradigms, allowing for the calculation of attentional costs on motor control. Levels of Social, Familial, and Romantic loneliness were also assessed. Results indicated that social loneliness predicted increased attentional costs in dynamic balance tasks, suggesting that participants with higher loneliness scores found these tasks more challenging under dual-task conditions. Performance in static balance tasks decreased in relation to romantic loneliness, under both single and dual-task conditions. In Study 2, 59 participants aged 19-44 completed the UCLA loneliness scale and a postural stability assessment using a Tetrax system. Findings revealed a correlation between loneliness and a left-side weight distribution bias, particularly in tasks performed with closed eyes. Altogether, these findings support the right-hemisphere cognitive overload hypothesis of loneliness, offer a detailed examination of how loneliness might interact with motor control mechanisms, and generalize previous findings to young and middle-aged adults.

**Keywords:** *Loneliness, motor control, static balance, dynamic balance, Tetrax.*

## 1. Introduction and objectives

The association between physical function and mental health, has been gaining attention in health and movement literature. Yet, knowledge about how loneliness impacts aspects of motor control, such as overall physical stability and mobility, remains limited. Loneliness, defined as the subjective feeling of lacking meaningful social connections, is a known risk factor for various health issues (Hawkey et al., 2009). Studies suggest that loneliness can negatively affect balance control mechanisms, potentially due to reduced physical activity leading to muscle weakening and impaired sensory processing (Buchman et al., 2011; Philip et al., 2020).

However, standard motor control assessment methods, like dual-task (DT) performance or accurate postural stability measurement, are rarely used in loneliness research. This gap in methodology limits our understanding of the loneliness-motor control relationship. For example, a study by Rezola-Pardo et al. (2019) found no connection between DT and loneliness, but used DT as an intervention rather than a high cognitive-load assessment condition, thus not conclusively addressing the impact of loneliness on motor control. Our study was aimed to further investigate the association between loneliness and motor control through lab and field studies. We hypothesized that participants with higher loneliness levels will show poorer performance in various motor tasks compared to their less lonely counterparts.

## 2. Method

### 2.1. Materials and procedure

Study 1 consisted of 123 participants aged 21-59 (M=34.20, SD=10.42), sampled in a convenience sampling method and assessed at their homes. Loneliness was examined using the SELSA questionnaire (DiTommaso & Spinner, 1993), which assesses levels of Social, Familial, and Romantic loneliness. Motor



control was assessed using several tasks: a) In the **one foot stance single task**, participants were to stand on non-dominant foot; b) The **one foot stance dual task** was similar to the previous task, with the addition of continuously subtracting 3 from a random three digit number provided by the experimenter; c) In the **gait single task**, participants were to tandem-walk for 2m and back; d) In the **gait dual task**, participants were to do the same, in addition to continuously subtracting 3 from a random three digit number provided by the experimenter. In all motor assessment performance time was measured (in seconds).

Study 2 consisted of 59 participants aged 19-44 ( $M=26.05$ ,  $SD=4.43$ ), all physical education students who volunteered to the study. The study was conducted in a laboratory equipped with a Tetrax™ system which assesses postural stability in various conditions (e.g., with eyes open, with closed eyes, etc.) following a strict protocol. Loneliness was assessed using the UCLA questionnaire V3 (Russell, 1996). In addition, Timed Up and Go (TUG) and Trail Making Test (TMT) were assessed.

### 3. Results

In Study 1, attentional costs on motor control were calculated by subtracting single task performance from dual task. Attentional cost and loneliness data were submitted to linear regression analyses, controlling for age, gender, relationship status, and foot dominance. The analyses revealed that increased attentional costs in dynamic balance tasks was predicted by social loneliness ( $B=4.71$ ,  $p=.008$ ) and romantic loneliness ( $B=2.18$ ,  $p<.001$ ), suggesting that participants with higher levels of loneliness found these tasks more challenging under dual-task conditions. Performance in static balance tasks decreased only in relation to romantic loneliness ( $B=-12.55$ ,  $p=.005$ ) under both single and dual-task conditions.

In Study 2, loneliness and Tetrax data were submitted to Pearson correlation analysis. Findings revealed a correlation between loneliness and a left-side weight distribution bias, particularly in tasks performed with closed eyes (HB B%:  $r=.272$ ,  $p<.05$ ; WDI:  $r=.286$ ,  $p<.05$ ; PO B%:  $r=.275$ ,  $p<.05$ ). TUG and TMT were not associated with loneliness.

### 4. Discussion and conclusions

Overall, our findings support the right-hemisphere cognitive overload hypothesis of loneliness. This hypothesis suggests that loneliness occupies the attentional system, which is regulated by control mechanisms in the right parietal hemisphere, thereby affecting attentional control in general and specifically on the left side of the body. Our data indicated that loneliness was associated with decreased motor performance under increased attentional demand (i.e., during a dual task) and with diminished motor control over the left foot. These findings could be used to enhance our understanding of the impact of loneliness on vulnerable individuals.

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# ENVIRONMENTAL MEMORY AND CONSERVATION OF ENVIRONMENTAL BEHAVIORS

Amélie Lesenecal<sup>a</sup>, & Annamaria Lammel<sup>b</sup>

University Paris 8 Vincennes-Saint-Denis, Paragraphe Laboratory (EA349) (France)

## Abstract

Exposure to nature during childhood promotes mental and physical well-being in pro-environmental attitudes (Van Heezik et al., 2021). Different factors can also contribute: time spent in nature, preference for landscapes, exposure to biodiversity as well as the connection with nature. It is therefore important to understand the events experienced during childhood and which will shape environmentally conscious attitudes in adulthood in order to promote ecological values, protection and restoration of the environment (Wells & Lekies, 2006). This is the first study to integrate different components: environmental moral (which includes attitudes and values) and memory. A total of 100 adults aged 17 to 80 years ( $M = 35$  years and 4 months,  $ET = 10.7$ ) participated in the study. They were recruited by survey on social network. The material of our study consists of two questionnaires in order to be able to identify values, attitudes towards the environment (Moussaoui et al., 2016) and whether adults who had one or more experiences during their childhood reactivated the patterns left in their memory concerning environmental behavior (Wells, & Lekies, 2006). Regarding childhood experience, individuals had a positive experience with nature when they were accompanied by someone. Environmental education was also part of their involvement. After correlation analysis, adults who have had nature-related experiences and attachment will tend to have more pronounced pro-environmental attitudes and values than adults who have not had direct experiences with nature. The results highlight that individuals have environmental attitudes and values (such as protection, admiration and aesthetic values). Individuals have therefore kept a trace in memory which allows them to have an environmental morality based on attitudes and values transmitted during childhood. In future research, it would be interesting to delve deeper into the elements on environmental activities in nature at school in a longitudinal approach.

**Keywords:** *Environmental memory, childhood, adulthood, behaviors, environmental moral.*

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## 1. Introduction

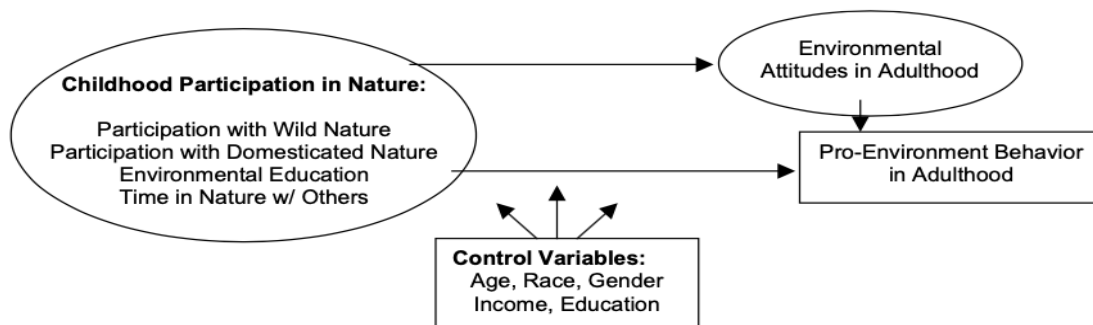
Exposure to nature during childhood promotes mental and physical well-being in pro-environmental attitudes. Its assets depend on the amount of greenery, proximity to green spaces in the neighbourhood, frequency of visits, time spent, types of environments, level of biodiversity present and connection to nature. (Van Heezik et al., 2021). Wells and Lekies (2006) develop a model and identify different factors that can also contribute to the connection to nature that can create pro-environmental attitudes: time spent in nature, preference for landscapes, exposure to biodiversity and connection to nature. It is therefore important to understand the events experienced during childhood and that will shape environmentally friendly attitudes in adulthood in order to promote ecological values, environmental protection and restoration (Figure 1).

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<sup>a</sup> Doctoral Psychologist

<sup>b</sup> Professor Emeritus

Figure 1. Conceptual model: child involvement in the nature and environmental adult's attitudes and behavior.



Three main factors are therefore necessary for the child so that once an adult, there are environmental pros and ecological actions: participation in the wild (walking, games, hiking, camping, hunting and fishing), activities related to ecological education and life experience, as well as participation in sophisticated nature (harvesting, harvesting, planting and plant care).

## 2. Method

### 2.1. Population

This is the first study to integrate different components: environmental morality (which includes attitudes and values) and memory. A total of 100 adults aged 17 to 80 years ( $M = 35$  years and 4 months,  $ET = 10.7$ ) participated in the study. The sample was evenly distributed, consisting of 58 girls and 58 boys. The majority of participants were French (92%); 3% were Belgian, 5% were other nationalities (cadadiens, Colombian, Filandan, Mexican, North African, Romanian and Swiss).

### 2.2. Material

The material of our study consists of three questionnaires in order to identify values and attitudes towards the environment (Moussaoui et al. 2016) and whether adults who had one or more childhood experiences reactivated the trends left in their memory regarding environmental behavior (Wells, & Lekies, 2006). A questionnaire on the well-being of the participant. In addition, a control task was done to assess the memory of the participants. They had to tell a memory dating from 4 and 10 years.

### 2.3. Procedure

All participants responded to all questionnaires on Google Drive was used to pass the questionnaires individually.

### 2.4. Data coding

We will be presenting the first results. These are quantitative results.

## 3. Results

Regarding the childhood experience, individuals had a positive experience with nature such as green classes, hikes/games in the forest, gardening, camping, they were accompanied by someone. Few individuals report negative experiences, we can identify some natural disasters (flood, storm and fire). Participants also report experiences with the wild (forest, camping, picnic) at least once a month. Participants also have experience with sophisticated nature such as gardening once a week for the majority. Environmental education was also part of their commitment. After correlation analysis, adults who have had nature-related experiences and attachment will tend to have more pro-environmental attitudes and values than adults who have not had direct experiences with nature. The results highlight that individuals have environmental attitudes and values (such as protection, admiration and aesthetic values). Individuals have therefore kept a trace in their memory that allows them to have an environmental morality based on attitudes and values transmitted during childhood.

#### 4. Discussion

In this study, we made the link between different components: environmental morality (which includes the notions of attitudes and values) and memory. The results showed that adults who had positive experiences with nature (such as time spent in nature, environmental education and having direct experience with sophisticated and wild nature) will have more pro-environmental attitudes and behaviours, which confirms the hypothesis of Wells and Lekies (2006). So, people have created patterns and have kept track of them, so they can reactivate their environmental morality as adults.

#### 5. Conclusion

To conclude, the results are in agreement with the literature. It would be interesting to continue statistical analyses to identify the pro-environmental attitudes and behaviours of individuals who have had a negative experience with the environment. Future research could explore the elements of environmental activities in nature at school using a longitudinal approach with interest.

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# ADOLESCENTS' CLIMATE CHANGE PERCEPTIONS: DO CLIMATE CHANGE LEARNING AND ENGAGING IN ENVIRONMENT-RELATED GROUPS MATTER?

Marcelo Félix, Sara Miranda, Pedro Rosário, & Jennifer Cunha  
*Escola de Psicologia, Universidade do Minho (Portugal)*

## Abstract

Previous research suggested that improved climate change (CC) knowledge contributes to youths' awareness of its impact and predicts concern. Formal education institutions have played a fundamental role in CC education and have made efforts to promote awareness and literacy on the topic. Studies have also shown the potential complementary effect of non-formal and informal settings. The purpose of this study is to analyze the influence of learning CC in school and engagement in environmental groups on adolescents' CC subjective knowledge and concern, as well as on the perceived impact of CC in their lives. A questionnaire was applied to 209 Portuguese early and middle adolescents, aged between 11 and 18 years old. Participants were split into three groups: Group 1 comprised adolescents who self-reported no prior CC learning; Group 2 included participants who reported only previous CC learning in school; and Group 3 comprised participants who reported previous CC learning in school and had been engaged in environmental groups. The results showed Group 1 reported the lowest CC knowledge, followed by Groups 2 and 3. Moreover, Group 1 reported lower CC concern than Groups 2 and 3. The differences between Groups 2 and 3 were not statistically different. Lastly, Group 1 reported experiencing CC less frequently and with lower intensity compared to Groups 2 and 3. Differences between Groups 2 and 3 were not statistically different in these two variables. Despite the limited sample, the current study highlights the differentiated contribution of formal and informal environmental education in Portugal. Learning about CC in school is essential to building adolescents' knowledge about this issue, and engaging in environmental groups seems to expand this positive impact.

**Keywords:** *Adolescence, Climate Change, environmental engagement, formal education, perceptions.*

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## 1. Introduction

Previous research has suggested that developing climate change (CC) knowledge is crucial to increase awareness and concern. Since these are some of the key initial drivers for self-efficacy in climate action (Kolenatý, Kroufek, & Cincera, 2022), it is relevant to understand how to promote them. Literature on adolescents has shown an increased interest in understanding the role of different contexts of CC education in promoting awareness, literacy, and action on the topic (Dawson & Carson, 2020; Littrell et al., 2020).

Although the role of formal education has been considered crucial (United Nations, 2015), complementary educational approaches have been a focus of environmental literature. Place-based non-formal and informal education has been shown to improve youths' CC knowledge, perceptions, awareness, and concern (Littrell et al., 2020). For instance, a study in Northern Portugal found that students who engage in environmental extracurricular activities exhibit fewer misconceptions about CC (García-Vinuesa, Carvalho, Meira Cartea, & Azeiteiro, 2021). Nevertheless, to the best of our knowledge, no study has yet sought to understand to what extent CC subjective knowledge, perceptions, and concern vary for adolescents with different CC learning opportunities and involvement in environmental groups.

## 2. Objectives

The purpose of this study is to analyze the influence of engagement in CC learning in school and environmental groups (e.g., associations, clubs) on adolescents' perceived CC: a) subjective knowledge, b) concern, and c) impact on their lives (i.e., frequency and intensity).

### 3. Methods

A total of 209 Portuguese early and middle adolescents, aged between 11 and 18 years old, participated in the study (see Table 1). Participants were split into three groups: Group 1 ( $n = 47$ ) comprised adolescents who self-reported no prior CC learning in school (despite belonging to classes where 55.5 to 93.7% of the classmates reported having learned about CC in school, in a larger study) and were not engaged in environmental groups; Group 2 ( $n = 81$ ) included participants who reported only previous CC learning in school; and Group 3 ( $n = 81$ ) comprised participants who reported previous CC learning in school and had been engaged in environmental groups.

Table 1. Means and frequency distribution of the sociodemographic characteristics of the sample.

|                   | Group 1    | Group 2    | Group 3    | Total       |
|-------------------|------------|------------|------------|-------------|
| N                 | 47 (22.5%) | 81 (38.8%) | 81 (38.8%) | 209         |
| Sex               |            |            |            |             |
| Female            | 16 (34.0%) | 45 (55.6%) | 52 (64.2%) | 113 (54.1%) |
| Male              | 31 (66.0%) | 36 (44.4%) | 29 (35.8%) | 96 (45.9%)  |
| Age: $M$ ( $SD$ ) | 13.3 (1.6) | 13.7 (1.7) | 13.7 (1.6) | 13.6 (1.6)  |

The questionnaire comprised a four-item Likert scale on CC subjective knowledge and three single-item questions about CC concern and impact (i.e., frequency and intensity). Regarding subjective knowledge of the CC, reflecting different dimensions as proposed by Hoppe, Taddicken, and Reif (2018), participants were asked to evaluate their knowledge of the CC in general, its causes, consequences, and mitigation actions. The response options ranged from low (1) to high (5). This scale revealed good internal consistency ( $\alpha = 0.894$ ). A five-point Likert scale was also used for the remaining three questions. For CC concern and impact, they were asked to what extent they felt concerned about CC (1 - Nothing; 5 - Extremely), how often they feel affected by CC (1 - Never; 5 - Almost always), and to what extent they feel negatively affected by CC (1 - Nothing; 5 - Extremely).

Preliminary analyses of the demographic data included the computation of descriptive statistics. Due to the dependent variables being ordinal-scale responses, or mean scores derived from these, non-parametric tests were chosen for statistical comparisons of the observed outcome variables between groups. Kruskal-Wallis tests were used to compare the study's three independent samples, and for paired samples, Mann-Whitney U tests were used. Additionally, effect sizes are reported as epsilon-squared ( $\epsilon^2$ ), and the benchmarks by Rea and Parker (2014) were used to interpret its values.

### 4. Results

The data shows statistically significant differences between the three groups in all outcome variables of the study (see Table 2). Regarding CC subjective knowledge, Group 1 reported a statistically significant lower score than Groups 2 ( $Z = -5.17, p < .001$ ) and 3 ( $Z = -6.98, p < .001$ ). Differences between Groups 2 and 3 were also statistically significant ( $Z = -3.39, p = .001$ ). Likewise, Group 1 reported lower CC concern than Groups 2 ( $Z = -3.54, p < .001$ ) and 3 ( $Z = -5.15, p < .001$ ). Differences between Groups 2 and 3 scores were statistically different ( $Z = -2.24, p = .025$ ). Lastly, regarding the perception of being affected by CC, Group 1 reported lower frequency scores, marginally less than Group 2 ( $Z = -1.92, p = .055$ ) and significantly less than Group 3 ( $Z = -3.08, p = .002$ ). Group 1 also reported significantly lower intensity scores than Groups 2 ( $Z = -3.19, p = .001$ ) and 3 ( $Z = -3.23, p = .001$ ).

Table 2. Comparison between the groups' means, Kruskal-Wallis tests, and effect sizes for the study's measures.

| Variables  | Group 1 $M$ ( $SD$ ) | Group 2 $M$ ( $SD$ ) | Group 3 $M$ ( $SD$ ) | $\chi^2$ ( $df$ ) | $\epsilon^2$ |
|--|----------------------|----------------------|----------------------|-------------------|--------------|
| Subjective knowledge                                   | 2.54 (0.92)          | 3.37 (0.71)          | 3.77 (0.65)          | 54.96 (2)***      | 0.25         |
| CC concern   | 3.06 (0.97)          | 3.65 (0.79)          | 3.90 (0.72)          | 27.79 (2)***      | 0.12         |
| Frequency the participant feels affected by CC         | 2.43 (1.80)          | 2.79 (0.95)          | 3.02 (0.97)          | 10.16 (2)**       | 0.03         |
| Extent the participant feels negatively affected by CC | 2.26 (0.94)          | 2.80 (0.90)          | 2.88 (1.04)          | 12.74 (2)**       | 0.04         |

Notes. \*\*  $p < .01$ ; \*\*\*  $p < .001$ .

### 5. Discussion

The Portuguese formal education curricula embed CC, however, adolescents from Group 1 reported no prior learning about the topic in school, unlike the majority of their classmates. Future

research may clarify whether this is mostly due to the retrospective nature of the questionnaire or to the pedagogical approaches employed, which may fail to promote student involvement with the topic (e.g., lectures) (McNeal, Spry, Mitra, & Tipton, 2014). Nevertheless, the current data suggest that engaging with CC learning within a formal education setting is fundamental to shaping adolescents' subjective knowledge, concern, and perceptions regarding the issue. Still, the group of adolescents who only engaged with the topic in school reported moderate CC knowledge, which is consistent with research on the declarative knowledge of Portuguese youth (García-Vinuesa et al., 2021).

The current findings point to a relatively strong effect on CC subjective knowledge and a moderate effect on concern from both engaging with CC only in school and in school and environmental groups. Being involved with environmental groups seems to supplement the positive effect of formal education, particularly regarding a heightened awareness of the prevalence of CC in adolescents' daily lives. It is plausible that among this group of adolescents, participating in outdoor and place-based activities, typically associated with informal educational approaches, facilitates their understanding of CC knowledge and recognition of its negative consequences, thereby explaining their increased concern (Littrell et al., 2020).

Although it did not belong to the scope of this study, the data appears to align with research on gender differences in environmentalism (Gifford & Nielson, 2014), indicating that adolescents who report no prior engagement or learning about CC tend to be male, while those involved with environmental groups tend to be female. Future research might consider gender while creating CC literacy strategies. Despite the small sample size, this study's findings on the key initial drivers for self-efficacy in climate action are relevant to educators (e.g., teachers, guardians). Adolescents seem to benefit from engaging in environmental-related activities in formal school and informal out-of-school settings.

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# EGO STATES AND TENDENCY TOWARDS PSYCHOSOMATICS<sup>1</sup>

**Kristina Randelović, Miljana Nikolić, & Jelisaveta Todorović**

*Department of Psychology, University of Niš (Serbia)*

## Abstract

Ego states are a set of behaviors, thoughts and feelings that represent part of an individual's personality. Transactional analysis describes three ego states: Adult, Parent, and Child (behaves, thinks and feels the way the individual used to feel when he was a child). The question is whether it is possible to predict psychosomatic tendencies with the help of ego state, which was the goal of this research. The sample was consisting of 291 respondents ( $N_{\text{male}} = 27.5\%$ ,  $N_{\text{female}} = 72.5\%$ ), while the average age was 19.19 ( $SD = 1.37$ ). The instruments used in the research were the Ego State Test and the HI Psychosomatic Propensity Test. All ego states, with the exception of the Nurturing Parent ego state, are significantly related to psychosomatic tendencies ( $p < .05$ ). The Critical Parent ego state and the Adapted Child ego state positively correlate with psychosomatic tendencies, while the Adult and Free Child ego states correlate negatively with the same. The model composed of ego states explained 25% of the criterion variance ( $R^2 = .25$ ,  $F_{5, 214} = 14.14$ ,  $p < .01$ ). Statistically significant predictors of tendency towards psychosomatics were an Adult ego state ( $\beta = -.16$ ,  $t = -2.22$ ,  $p < .05$ ) and Adopted child ego state ( $\beta = .45$ ,  $t = 6.40$ ,  $p < .01$ ). More pronounced Critical Parent ego state and an Adapted Child ego state are associated with a higher tendency towards psychosomatics, while an Adult ego state and a Free Child are associated with a lower tendency towards psychosomatics.

**Keywords:** *Ego states, tendency to psychosomatics.*

## 1. Introduction

Ego states represent coherent systems of thinking and feeling, which are manifested in behavior (Berne, 1972). Dusay (1972) listed five ego states: Nurturing Parent, Critical Parent, Adult, Free Child, Adapted Child. The criteria by which it is possible to register the ego state are: words used, tone of voice, gesture, posture and facial expression (Steiner et al., 2003). A child's ego state is the source of feelings, intuitions, and needs (Wadsworth & Divicenti, 2003). The adult state represents a logical ego state in which an individual seeks information from other ego states and the external environment, and based on that data makes decisions (Stewart & Joines, 1987). The Critical Parent is behaviorally motivated by parental directives, which are often directed towards intolerant control while simultaneously underestimating the capabilities of other people. A Nurturing Parent means focusing on others, providing support, finding the good, rewarding and encouraging both other people and oneself on an internal, interpersonal level. The Child state is divided into the Free Child ego state and the Adapted Child ego state. A Free child is spontaneous in expressing feelings, autonomous and independent of parental influences. Adapted Child describes forms of behavior that are in fact automatic repetition of patterns learned in childhood and generally do not correspond to the current situation (Brajović Car & Hadži Pešić, 2011).

The psychosomatic approach is represented by the idea that psychological factors cause a functional disorder, which over time can damage tissues and affect the appearance of physical symptoms. The previous medical model of the disease, according to which the external cause leads to tissue damage, and then to functional disorders, which causes a physical symptom, has been replaced by a new, psychosomatic model (Hadži-Pešić, 2009). The psychosomatic approach views the patient as a biopsychosocial entity, and illness as a result of the intertwined action of external factors and the internal resistance of the organism. Psychosomatic illness is caused by the action of a psychogenic factor and can originate from emotional stress and manifest in the body as physical pain and other symptoms (Ghazanfari

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et al., 2019). This understanding leads to a holistic approach and the need to treat a person as a whole, not just a diseased organ, because every disease is a human disease viewed as a dynamic unity of physical and psychological aspects (Panić et al., 2013).

## 2. Method

### 2.1. Objective

The main goal is to examine whether it is possible to predict psychosomatic tendencies using ego states (Nurturing Parent, Critical Parent, Adult, Free Child, Adapted Child).

### 2.2. Sample

The sample was convenient and consisted of 291 respondents ( $N_{\text{male}} = 27.5\%$ ,  $N_{\text{female}} = 72.5\%$ ), an average age of 19.19 ( $SD=1.37$ ).

### 2.3. Instruments

**HI** from the Cybernetic batteries of conative tests tests (KON 6; Momirović, Wolf, & Džamonja, 1998) was used to measure psychosomatic tendencies. The test consisted of 30 items that were answered on a five-point Likert-type scale. The reliability of the scale, in this research, was  $\alpha = .88$ .

**Ego State Questionnaire (ESK)** (Loffredo et al., 2002) was used to operationalize ego state. The questionnaire consisted of 40 items forming five subscales: Nurturing Parent, Critical Parent, Adult, Free Child and Adapted Child. In this research, the reliability of the scale was  $\alpha = .71$ .

## 3. Results

In the following, the basic descriptive statistical results are presented first.

*Table 1. Descriptive statistics.*

| Variables        | AS    | SD    | Sk   | Ku   | Predictors       | $\beta$ | t     | p   |
|------------------|-------|-------|------|------|------------------|---------|-------|-----|
| Psychosomatics   | 59.72 | 18.20 | .64  | .02  |                  |         |       |     |
| Nurturing Parent | 32.06 | 5.36  | -.74 | .33  | Nurturing Parent | .04     | .54   | .59 |
| Critical Parent  | 22.56 | 5.34  | .43  | -.33 | Critical Parent  | .09     | 1.36  | .18 |
| Adult            | 29.01 | 4.58  | -.49 | .21  | Adult            | -.16    | -2.22 | .03 |
| Free Child       | 27.22 | 4.16  | .22  | -.15 | Free Child       | .03     | .40   | .69 |
| Adapted Child    | 21.79 | 5.19  | .16  | -.03 | Adapted Child    | .45     | 6.40  | .00 |

The results show that the model consisting of ego states explains 25% the total variance ( $R^2 = .25$ ,  $F = 14.14$ ,  $p < .01$ ). Statistically significant predictors of tendency towards psychosomatics are an Adult ego state and Adopted child ego state.

## 4. Discussion and conclusion

The aim of the research was to examine the relationship between the ego states (Nurturing Parent, Critical Parent, Adult, Free Child, Adapted Child) and the tendency towards psychosomatics on a sample of the student population. The results show that only Adult ego state (negative direction) and Adopted child ego state (positive direction) predict tendency towards psychosomatics. Negative correlation between Adult ego state and the tendency towards psychosomatics is expected. Individuals who predominantly operate from the Adult ego state are better equipped to manage stressors rationally and objectively, thus they may be less prone to development and experience psychosomatic symptoms. Also, their characteristic can be effective coping mechanisms and problem-solving skills which help in a healthier response to stressful events. Conversely, people who react dominantly from the Adopted Child ego state, may be more susceptible to psychosomatic symptoms, especially if they have unresolved emotional problems from childhood. Research on the connection between the Adult ego state as well as the Adopted Child ego state and the tendency towards psychosomatic symptoms is relatively sparse. There are research findings that point to an indirect connection between the mentioned constructs. For instance, the work of Gross (2015) shows how emotional regulation model „helps to clarify how emotion regulation strategies are selected and implemented and points to ways that emotion regulation difficulties may emerge” (p. 20). This allows insight into how psychological factors influence health, respectively somatic symptoms. Psychosocial

factors are also important in shaping vulnerability to psychosomatic symptoms. Research in domain of attachment theory and health outcomes (e.g., Mikulincer & Shaver, 2007), offer valuable insights into the complexity of this relationship. So, while the Adult ego state may contribute to adaptive coping strategies and cognitive appraisal processes, other factors such as early life experiences and interpersonal relationships also play a crucial role in health outcomes. Insecure attachment styles characterized by anxious or avoidant attachment patterns have been associated with higher levels of psychosomatic symptoms (Brenning et al., 2012; Mikulincer & Shaver, 2007). Adverse childhood experiences have been linked to disruptions in emotional regulation and increased vulnerability to somatic complaints (Anda et al., 2006; Norman et al., 2012). Research has shown that difficulties in emotional regulation are one of the psychological aspects contributing to the development, progression, and treatment of the somatic symptom and related disorders symptoms (Luyten et al., 2013; Rief & Broadbent, 2007).

Understanding Adult and Adopted child ego state can provide insights into how individuals process information, regulate emotions, and cope with stress, all of which can influence their susceptibility to psychosomatic symptoms. However, it's essential to consider individual differences and the complex interplay of various psychological factors in determining psychosomatic tendencies. Thus, further research could specifically investigating this relationship is warranted to establish more concrete findings and implications for clinical practice.

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# PERSONALITY TRAITS AND TENDENCY TOWARDS PSYCHOSOMATICS<sup>1</sup>

Miljana Spasić Šnele, Jelisaveta Todorović, & Miljana Nikolić  
*Department of Psychology, University of Niš (Republic of Serbia)*

## Abstract

Psychosomatic diseases are physical diseases but psychological factors play an important role in their origin. Notable examples of psychosomatic diseases are skin diseases, diseases of the gastrointestinal tract, diseases of the respiratory organs and blood vessels, as well as diseases of glands with internal secretion and rheumatic diseases. The question is which personality traits are associated with a tendency towards psychosomatics. So, this research aimed to examine whether personality traits (activity, aggressiveness, sensations, neuroticism, sociability) can be used to predict a tendency towards psychosomatics. The sample was convenient and consisted of 291 respondents ( $M = 27.5\%$ ,  $F = 72.5\%$ ). The average age of the respondents was 19.19 years ( $SD = 1.37$ ). The instruments included the ZKPQ questionnaire designed to measure basic personality traits and the HI psychosomatic tendency test. Aggressiveness, sociability, and neuroticism are statistically significantly related to psychosomatic tendencies ( $p < .05$ ). Aggressiveness and neuroticism are positively related to psychosomatic tendencies, while sociability is negatively related. The model composed of personality traits explains 36% of the criterion variance ( $R^2 = .36$ ,  $F_{5,164} = 18.24$ ,  $p < .01$ ). Neuroticism ( $\beta = .42$ ,  $t = 6.17$ ,  $p < .01$ ) and sociability ( $\beta = -.32$ ,  $t = -4.35$ ,  $p < .01$ ) stood out as significant predictors of psychosomatic tendencies. Higher aggressiveness and neuroticism, as well as less pronounced sociability, are associated with a greater tendency towards psychosomatics. Recognizing personal factors associated with psychosomatic tendencies at a younger age represents an important contribution to creating preventive programs that can focus on teaching students how to deal with their own emotions and express them in a socially desirable way.

**Keywords:** *Personality traits, tendency to psychosomaticism, adolescents.*

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## 1. Introduction

“The term “psychosomatic” carries two connotations having an ancient tradition in Western thinking and medicine: psychogenesis of disease and holism” (Ando, 2020, p. 1804). Psychosomatic diseases are physical diseases in the origin of which psychological factors play an important role (Hadži Pešić, 2009). Psychosomatic diseases can be, among others, skin diseases, diseases of the gastrointestinal tract, diseases of the respiratory organs and blood vessels, as well as diseases of glands with internal secretion and rheumatic diseases. Personality is an important factor related to health, as individuals’ self-diagnosis and their coping mechanisms are very much dependent on their personality traits (Friedman, 2000). A recently conducted study (Ghazanfari et al., 2020) showed that there is a significant association between the dimensions of personality (neuroticism, extroversion, openness, agreeableness, and conscientiousness) and dimensions of psychosomatic complaints profiles (gastrointestinal, neuro-skeletal, pharyngeal-respiratory, and psychological). Further, results of study conducted in Serbia on a student sample (Panić, Radojković, & Hadži-Pešić, 2013), showed that students prone to psychosomatic tendencies have higher scores on neuroticism and aggressiveness compared to those who do not show such a tendency. Although the clinical picture of chronic psychosomatic disorders is most explicitly manifested in middle-aged and older people, their symptoms can occur earlier in childhood and or at a young age (Larionow, Ageenkova & Dedenok, 2022). For example, Patel, Flisher, Hetrick, and McGorry (2007) showed that the onset of most psychosomatic complaints starts during the age range of 12 to 24 years.

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## 2. Objectives

The aim of this research was to examine whether personality traits (activity, aggressiveness, sensations, neuroticism, sociability) can be used to predict a tendency towards psychosomatics.

## 3. Methods

### 3.1. Sample

The sample was convenient and consisted of 291 respondents ( $n_{male} = 80$  (27.5%),  $n_{female} = 211$  (72.5%)), aged 18 to 24 years ( $M = 19.19$ ;  $SD = 1.37$ ). The respondents were high school students and first and second-year students of the Faculty of Philosophy in Niš, Serbia.

### 3.2. Variables and instruments

**Psychosomatic was measured using - HI** from the battery Cybernetic batteries of conative tests (KON 6; Momirović, Wolf, & Džamonja, 1998). *HI* is a regulator of organic functions, the disorders of which cause functional disorders of basic organic systems. It contains 30 Likert-type items where respondents express their degree of agreement with each of the given statements (1 – not true, 5 - completely true). Reliability in our study was  $\alpha = .88$ .

**Personality traits** were measured using Zuckerman-Kuhlman Personality Questionnaire - 50 – CC (ZKPQ-50-CC; Aluja et al., 2006) contains 50 true/false statements. The dimensions of this questionnaire are: activity ( $\alpha = .70$ ); aggressiveness ( $\alpha = .62$ ); impulsive sensation seeking ( $\alpha = .62$ ); neuroticism ( $\alpha = .74$ ); sociability ( $\alpha = .74$ ).

## 4. Results

Descriptive statistics and correlation analyses are presented in Table 1.

Table 1. Descriptive statistics and correlation of the of measured variables.

| Variable       | Act. | Aggress. | Sensat. | Neuro. | Sociab. | <i>N</i> | <i>M</i> | <i>SD</i> | <i>Sk</i> | <i>Ku</i> |
|----------------|------|----------|---------|--------|---------|----------|----------|-----------|-----------|-----------|
| Psychosomatics | -.01 | .15*     | .06     | .49**  | -.36**  | 259      | 59.72    | 18.2      | 0.637     | 0.022     |
| Activity       |      | -.02     | .22**   | .07    | .04     | 268      | 3.99     | 2.21      | 0.131     | -0.745    |
| Aggressiveness |      |          | .33**   | .03    | .12     | 263      | 4.41     | 2.32      | 0.176     | -0.633    |
| Sensations     |      |          |         | -.01   | .39**   | 249      | 5.10     | 2.30      | 0.094     | -0.576    |
| Neuroticism    |      |          |         |        | -.28**  | 259      | 5.07     | 2.48      | -0.029    | -0.938    |
| Sociability    |      |          |         |        |         | 268      | 4.38     | 2.53      | 0.145     | -0.886    |

Note. \*\*Correlation is significant at the .01 level; \*Correlation is significant at the .05 level.

The results showed that psychosomatic is in positive correlation with aggressiveness and neuroticism, and in negative correlation with sociability (Table 1). The regression model composed of personality traits explains 36% of the criterion variance ( $R^2 = .36$ ,  $F_{5,164} = 18.24$ ,  $p < .01$ ). Neuroticism ( $\beta = .42$ ,  $t = 6.17$ ,  $p < .01$ ) and sociability ( $\beta = -.32$ ,  $t = -4.35$ ,  $p < .01$ ) stood out as significant predictors of psychosomatic tendencies.

## 5. Discussion

According to the obtained results, we can say that higher aggressiveness and neuroticism, as well as less pronounced sociability, are associated with a greater tendency towards psychosomatics. Further, regression analysis showed that neuroticism and sociability stood out as significant predictors of psychosomatic tendencies. Similar findings were obtained in previous research (Ghazanfari et al., 2020; Panić et al., 2013), indicating that a high score on neuroticism can negatively affect the physical and psychological health of the individual and play as a precursor to a variety of psychosomatic complaints profiles (Ghazanfari et al., 2020). More precisely, the obtained results showed that a more pronounced tendency towards anxiety, tension, concern, indecisiveness, and sensitivity to criticism (Zuckerman, 2002, as cited in Panić et al., 2013), represents an important factor associated with a tendency toward psychosomatics in students aged 18 to 26. It is an interesting finding that sociability stood out as a significant predictor of tendency towards psychosomatic. Sociability refers to preferring big parties, interacting with many people, having many friends and desire to spend more time with them, preference for being with others as opposed to being alone and pursuing solitary activities, and intolerance for social

isolation (Huang et al., 2011; Wang et al., 2002). Having in mind that sociability was perceived as a major facet of extraversion (Aluja et al., 2010) we could say that our finding is in line with the previous one (Ghazanfari et al., 2020). In the study of Ghazanfari et al. (2020) extraversion was negatively associated with all somatic complaints' profiles. Extroversion is closely related to activity and hence can lead to acceptance, and group-oriented behavior. It is correlated with positive emotions and skill in creating successful situations, with expression and confidence in social situations, and all that can positively influence the individual's well-being. Further, results of the correlation analysis showed that aggressiveness is correlated with the psychosomatic tendencies. This personality dimension refers to verbal aggressiveness, rudeness, inconsiderate behavior, and impatience (Zuckerman, 2002, as cited in Panić et al., 2013). Relying on the previous knowledge about the psychological structure of psychosomatics, the result draws attention to the fact that respondents prone to psychosomatics are unable to express and describe their emotional experience, process conflicts through the process of imagination, fantasy, and creative creativity, which leads to frustration, and the emotional charge is externalized and aggressive manifestation is initiated (Panić et al., 2013).

## 6. Conclusion

Recognizing personal factors associated with psychosomatic tendencies at a younger age represents an important contribution to creating preventive programs. Finding that higher aggressiveness and neuroticism, as well as less pronounced sociability, are associated with a greater tendency toward psychosomatics indicating the need for creating a program that will focus on teaching students how to deal with their own emotions and express them in a socially desirable way.

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# LEADERS AND FOLLOWERS' DIFFERENT EXPERIENCES OF REMOTE VERSUS OFFICE WORKING AND ITS INFLUENCE ON WELL-BEING

Adele Grazi<sup>1</sup>, & Finian Buckley<sup>2</sup>

<sup>1</sup>CIHS, School of Psychology, Trinity College Dublin (Ireland)

<sup>2</sup>DCU Business School, Dublin City University (Ireland)

## Abstract

Is the experience of working from home versus working in the office in a hybrid working model, different for leaders in contrast to employees? and how do these differences influence their well-being? Given that leaders and employee roles have very different demands, the context of recent transitions to hybrid working may have significantly different impacts, personally and professionally, for the two groups. Focusing on four aspects of working, namely, workload, perceived job autonomy, and perceived isolation, and overall well-being, we study the different experiences of leaders and their followers as they engage in homeworking versus “office” based working. Results from the first two waves of a longitudinal study in a tertiary education setting (n = 665 & 432) suggest that home versus office working does influence well-being with unexpected positive increments from office working even though office work is associated with increased workload for both leaders and followers. These results are discussed in light of the on-going debate regarding the effects of different forms of working (remote, hybrid, office) on worker well-being.

**Keywords:** Hybrid work, wellbeing, workload, job autonomy, isolation, leader and employee.

## 1. Background

Models of work have undergone radical evolution in the last years since the Covid19 pandemic (McPhail et al., 2024). Post pandemic work models have evolved with many workers seeking to maintain aspects of home working (Bick et al., 2023). Recently, hybrid work has become among the most common work arrangements particularly for knowledge workers. Hybrid work has offered employees an array of positive work outcomes such as greater flexibility, autonomy, and work-life balance. However, research has also reported some negative impacts of hybrid work such as social isolation, lack of job visibility and predictability (Uru et al., 2022).

When it comes to the effects of hybrid work on different work roles (e.g., leaders, employees) there is a paucity of evidence regarding potential differential experiences by role, as most of the research has investigated overall worker effects. Contemporary research identifies several key influences on workplace well-being including workload levels (Warr, & Inceoglu, 2012), autonomy (Morgeson & Humphrey, 2006), and experienced isolation (Hughes et al., 2004) amongst others. Post-Covid research has begun to map the experience of some of these key antecedents of well-being in the new emerging work models (e.g., remote, hybrid working) including benefits for perceived autonomy (Gibson et al., 2023), workload control (Gratton, 2021) although there are concerns regarding experienced isolation (Sewell & Taskin, 2015). However, what remains unclear is whether the employee experience of hybrid working differs from that of their managers/leaders. While evidence exists to suggest that some of the core functions of manager-leaders become more challenging and exacting in hybrid work contexts (Barber et al., 2023), research has thus far neglected to directly understand the impact of new hybrid working models on manager/leader experience of their roles and how these matches or differs from that of their followers.

In this research we seek to understand the attitudes and experiences of both leaders and their followers as they adopt a new hybrid working model. Specifically, we assess both leaders and followers experience of key antecedents of workplace well-being in both remote working and office-based working.

## 2. Methodology

### 2.1. Participants and procedure

Data was collected, upon consent, from an educational institution in Ireland using a 4-wave longitudinal design (collection in 2 time points to date). The survey was distributed to all employees within the institution through a survey monkey link. T1 (N, employees=558; leaders=107) and T2 (N, employees=356; leaders=76) survey used the same four measurement scales but differed in context. In survey 1 participants were asked of their work experience when working remotely, whereas in survey 2 participants were asked of their work experience when working in the office.

### 2.2. Measures

All responses on the focal measures were recorded on a Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). Job Autonomy was measured using Morgeson and Humphrey (2006), 9 item job autonomy scale ( $\alpha=90$ ). Isolation was measured using Hughes et al. (2004), 3 item workload scale. ( $\alpha=72$ ). Workload was measured using Rodell and Judge (2009), 4 item workload scale ( $\alpha=.94$ ). Wellbeing was measured using Goldberg, Waite, and Williams (1988) 12 item General Health Questionnaire ( $\alpha=.83$ ).

## 3. Results

### 3.1. Mean, standard deviations and correlations of survey 1 & 2 leader vs employees

Mean, standard deviations and correlations for the employee Survey 1 (remote work) is presented in Table 1. As depicted, employee wellbeing was positively related to above average workload and low isolation with p values  $<.01$ . No significant relationship was found between employee wellbeing and job autonomy. Mean, standard deviations and correlations for the leader Survey 1 (remote work) is presented in Table 2. As depicted, leader wellbeing was positively related to above average workload and low isolation with p values  $<.01$ . No significant relationship was found between leader wellbeing and job autonomy.

Table 1. Survey 1, Employee, Working Remotely.

| Variables    | M    | SD   | 1     | 2    | 3     |
|--------------|------|------|-------|------|-------|
| 1. Workload  | 5.02 | 1.38 |       |      |       |
| 2. Autonomy  | 5.69 | 1.01 | .11** |      |       |
| 3. Isolation | 2.49 | 1.56 | .18** | -.02 |       |
| 4. Wellbeing | 4.05 | .48  | .37** | -.06 | .36** |

Note: N = 358, \*\*  $p < .01$ , \*  $p < .05$ .

Table 2. Survey 1, Leader, Working Remotely.

| Variables    | M    | SD   | 1     | 2    | 3     |
|--------------|------|------|-------|------|-------|
| 1. Workload  | 6.08 | .87  |       |      |       |
| 2. Autonomy  | 5.91 | .73  | .16   |      |       |
| 3. Isolation | 2.86 | 1.56 | .18** | -.02 |       |
| 4. Wellbeing | 4.39 | .47  | .37** | -.06 | .36** |

Note: N = 107, \*\*  $p < .01$ , \*  $p < .05$ .

Mean, standard deviations and correlations for the employee Survey 2 (working in the office) is presented in Table 3. As depicted, leader wellbeing was positively related to above average workload and low isolation with p values  $<.01$ . No significant relationship was found between employee wellbeing and job autonomy. Mean, standard deviations and correlations for the leader Survey 2 (working in the office) is presented in Table 4. As depicted, leader wellbeing was positively related to high workload, low isolation and high autonomy with p values  $<.01$ .

Table 3. Survey 3, Employee, Working in the office.

| Variables    | M    | SD   | 1     | 2      | 3     |
|--------------|------|------|-------|--------|-------|
| 5. Workload  | 5.50 | 1.23 |       |        |       |
| 6. Autonomy  | 5.69 | 1.08 | .16** |        |       |
| 7. Isolation | 3.01 | 1.72 | .12** | -.11** |       |
| 8. Wellbeing | 4.22 | .60  | .37** | .06    | .28** |

Note: N = 356, \*\*  $p < .01$ , \*  $p < .05$ .

Table 4. Survey 2, Leader, Working in the office.

| Variables    | M    | SD   | 1     | 2      | 3     |
|--------------|------|------|-------|--------|-------|
| 5. Workload  | 6.40 | .91  |       |        |       |
| 6. Autonomy  | 5.98 | 1.09 | .30** |        |       |
| 7. Isolation | 2.57 | 1.63 | .29** | .02    |       |
| 8. Wellbeing | 4.70 | .79  | .55** | -.44** | .46** |

Note: N = 76, \*\*  $p < .01$ , \*  $p < .05$ .

### 3.2. Comparing means between remote working and in office working, leader versus employees

T-tests to determine if there is a significant difference between leader and employee means on the four constructs (wellbeing, workload, autonomy & isolation) in the two time-posts was run using SPSS. Table 5, shows findings with majority of construct comparisons showing a significance of  $p < .01$  or  $p < .05$ , except for isolation in Survey 1, which showed no significance.

Table 5. Leader vs Follower Survey 1 &amp; 2, t-test.

|            | Home Working<br>(Survey 1) |               | t      | df  | Sig    | Office Working<br>(Survey 2) |               | T-value | df  | Sig    |
|------------|----------------------------|---------------|--------|-----|--------|------------------------------|---------------|---------|-----|--------|
|            | Leader<br>M                | Employee<br>M |        |     |        | Leader<br>M                  | Employee<br>M |         |     |        |
| Well-Being | 4.4                        | 4.1           | -6.723 | 668 | .000** | 4.7                          | 4.2           | -5.919  | 431 | .000** |
| Work-load  | 6.1                        | 5.0           | -8.711 | 773 | .000** | 6.4                          | 5.5           | -6.152  | 490 | .000** |
| Autonomy   | 5.9                        | 5.7           | -2.393 | 710 | .017*  | 5.9                          | 5.7           | -2.204  | 468 | .028*  |
| Isolation  | 2.9                        | 2.5           | -.396  | 679 | 0.692  | 2.6                          | 3.0           | 2.030   | 452 | .043*  |

L=Leader, E=Employee, Survey 1= N, (E=558; L=107), Survey2 N, E=356; L=76= \*\* $p < .01$ , \* $p < .05$ .

#### 4. Discussion

The results of the present study show that high workload does not impact wellbeing, as previously suggested in the literature, even for leaders that show a mean score of  $M=6.4$ . Both leader and followers perceive as having a slightly heavier workload when working in the office, which could suggest that when working in the office employees interact more around work related problems. In contrast to the belief that working from home could result in higher employee isolation the results of this study show that employees feel higher isolation when working from the office, this could be due to the educational setting that this study was conducted. However, in agreement with the literature low levels of isolation are positively related to employee wellbeing. Job autonomy, considered in the literature as a predictor of employee wellbeing did not show a significant relationship with employee wellbeing, apart from leaders when working in the office. This result could suggest that leaders are more able to delegate work when in the office managing their own work in a more autonomous manner that could then be attributed to their higher wellbeing.

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# STUDENTS CO-DESIGNING THE CHARACTERISTICS OF A DIGITAL MENTAL HEALTH PROGRAM: INSIGHTS FROM SLOVENIA

**Manja Veldin, Igor Peras, & Maša Vidmar**  
*Educational Research Institute (Slovenia)*

## Abstract

The pandemic-induced decline in the mental health of children and adolescents (Raccanello et al., 2022) underscores the necessity for effective, evidence-based programs promoting their mental health and resilience. The use of digital technologies by youth is increasing (Sevilla-Llewellyn-Jones et al., 2018), which has also led to the emergence of digital prevention programs that effectively address mental health issues (Wright et al., 2023). When tailored to the target group's specific needs, these programs provide flexibility, anonymity, and engagement, facilitating the transfer of skills into daily life (Lucas-Thompson et al., 2019). As part of the Erasmus+ project *me\_HeLi-D*, we are designing a digital program for mental health and mental health literacy through a participatory approach, involving Austrian, Slovenian, and Polish students (12 to 15 years old). A key objective of this initiative is to enhance students' mental health literacy and well-being, emphasising that integrating technology, addressing youth-specific needs, and considering students' preferences are important for enhancing the effectiveness of digital programs (Baños et al., 2017). Two participatory workshops were held in three project partner schools, involving the end-users in identifying needs, generating ideas, and designing programme characteristics. We present the results from the second workshop conducted with 36 students from Slovenia attending the 7th/8th year of schooling. One of the participatory activities in the workshop included filling out feedback forms for students, featuring both closed and open-ended questions about the program's design. Students were asked to discuss avatars and their attributes, envision natural landscapes for presenting mental health components, and provide insights into how they wish to monitor their progress and achievements within the program. Analysing the open-ended questions, specific categories emerged related to the portrayal of natural landscapes (e.g., bodies of water) or the exclusion of certain visual elements (e.g., pollution) in the digital program. A majority of students expressed a preference for customizable avatars (e.g., clothing options). They indicated a desire for the main character to be human while the side character should be a cartoon figure or being. Tracking of progress should be presented with points and achievements as rewards. Our approach is designed to offer a digital tool that is tailored and captivating for the target age group, with the goal of enhancing the user experience and nonetheless overall effectiveness.

**Keywords:** *Mental health, digital program, youth, co-design, participatory workshops.*

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## 1. Introduction

The pandemic has highlighted the urgent need for effective, evidence-based programs promoting the mental health and resilience of children and adolescents (Raccanello et al., 2022). With adolescents' increased use of digital technologies, effective digital prevention programs addressing mental health issues are being developed (Wright et al., 2023). Tailored to the target group's specific needs, these programs offer flexibility, anonymity, and engagement, facilitating skill transfer into daily life (Lucas-Thompson et al., 2019). As part of the Erasmus+ project *me\_HeLi-D: Mental Health Literacy and Diversity*, we are designing a digital program for mental health and mental health literacy through a participatory approach, involving Austrian, Slovenian, and Polish students (12 to 15 years old). Their active participation ensures alignment with their daily experiences, promoting mental health in a relatable way. Emphasizing the integration of technology, addressing youth-specific needs, and considering preferences (Baños et al., 2017), the initiative aims to enhance students' mental health literacy and well-being. This paper presents insights into the preferred design of the digital elements of the programme, which can contribute to a more positive student experience and increased engagement with the programme, thus having direct and indirect effects on mental health (Umberson & Montez, 2010).

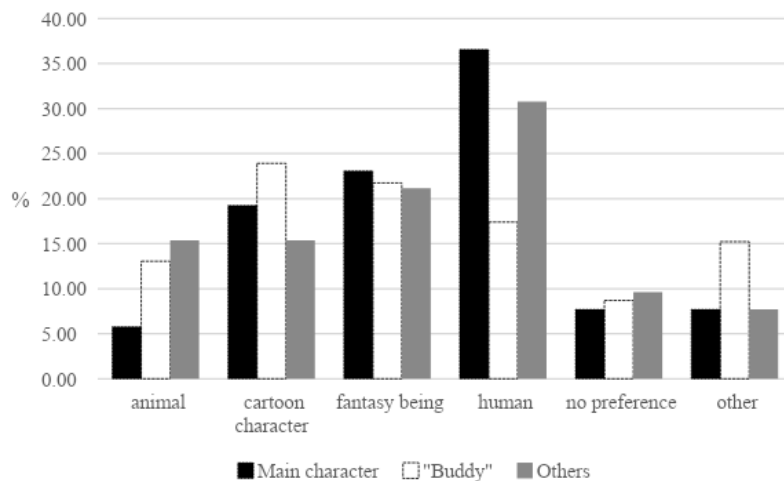
## 2. Method

Two participatory workshops in three partner schools involved students (as end-users) in shaping the program. Results from the second workshop with 36 students from two primary schools in Slovenia (7th/8th year; 12-14 years of age) are presented. Students filled out a form, featuring closed and open-ended questions about the design of the program, where they provided feedback on avatars, envisioned landscapes for mental health components, and shared insights on monitoring progress within the program.

## 3. Results

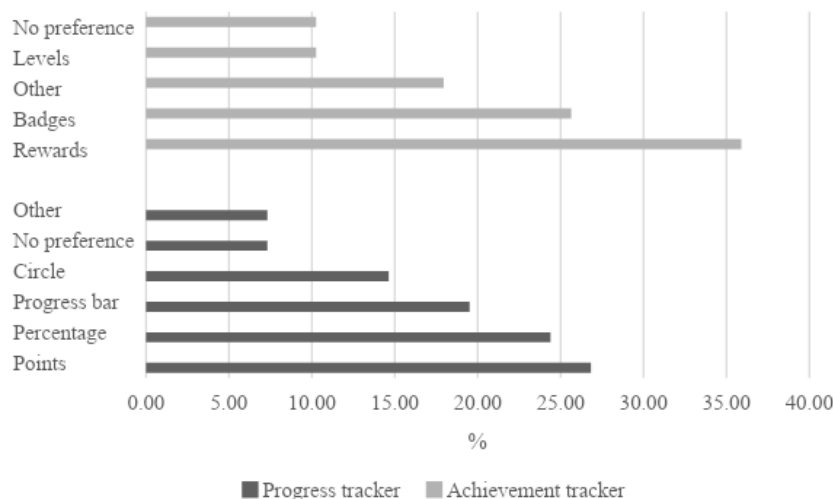
We present results on the students' preferences about avatars (customization, important characteristics, representation of characters), achievements, progress tracking and their envision of the natural landscapes (not) to be used in the programme. The majority of students (99.44%) prefer customizable avatars, particularly enjoying diverse clothing options (64%). Students also show interest in character type selection (39%; e.g., fictional character), avatar naming (36%), and hair customization (31%). They favour characters, both main and other, to be human (36.54% and 30.77%) and suggest a cartoon figure for the buddy figure (23.91%; refer to Figure 1). Additionally, students emphasize the importance of flexibility in freely choosing character representations in the program.

Figure 1. Preferred representation of the characters in the digital programme.



The students provided insights into how they wish to monitor their progress and achievements within the program (see Figure 2). The most preferred option for tracking achievements was rewards (35.90%) and points for monitoring their progress (26.83%). Additionally, students expressed a preference for having the flexibility to freely choose between various options.

Figure 2. Preferred representation of achievement and progress tracker.



Students were asked to envision natural landscapes, which will be used for presenting mental health components in the programme. Analysing the open-ended questions, specific categories emerged related to the portrayal of natural landscapes and the exclusion of certain visual elements in the digital program. In Table 1 we depict the recognized landscape categories, number of answers attributed to the category and specific student examples. The results indicate clear preferences for natural elements, especially for bodies of water and forests, while undesired landscapes are associated with pollution and dark places, or not recognized.

Table 1. Preferred and undesired landscape to be included in the digital programme.

|                            | <b>Landscape categories</b> | <b>f</b> | <b>Student examples</b>   |
|----------------------------|-----------------------------|----------|---|
| <b>Preferred landscape</b> | Body of Water               | 52       | Sea (19), Lake (17), River (10), Beach and sea (2), Stream/creek (2), Waterfall (1), Water (general, 1) |
|                            | Forest/Trees                | 38       | Trees (20), Forest (14), Bushes (3), Glade (1)  |
|                            | Mountains                   | 22       |   |
|                            | Natural places              | 16       | Caves (5), Desert (5), Island (2), Coast (1), Valley (1), Natural units (1), Tundra (1)                 |
| <b>Undesired landscape</b> | Pollution                   | 11       | Litter/ Garbage (11)  |
|                            | Nothing                     | 11       |   |
|                            | Dark places                 | 10       | Swamp (4), Caves (3), Quicksand (1), Dark places (1), Mine (1)  |
|                            | Buildings/ structures       | 3        | School (2), Shops (1)   |
|                            | Natural places              | 3        | Desert (1), Abyss (2)   |

#### 4. Conclusions

Our approach aims to provide a tailored and engaging digital tool for the target age group, enhancing both user experience and overall effectiveness. The results concerning the design of the programme indicate a majority preference for customizable avatars with various features, including human main characters and human or cartoon side characters. Landscape preferences leaned towards bodies of water while depicting pollution is undesired. The favoured tracking methods were achievement rewards and progress points. Additionally, the students emphasized the importance of flexibility in all program features. These insights inform program customization for improved student engagement and experience.

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# A SECONDARY ANALYSIS OF A SYSTEMATIC LITERATURE REVIEW ON NOCTURNAL CAREGIVING FOR JUVENILES WITH TYPE 1 DIABETES - FROM THE PERSPECTIVE OF THE LIVED EXPERIENCE

Vivienne Howard<sup>1</sup>, Rebecca Maguire<sup>2</sup>, & Siobhán Corrigan<sup>1</sup>

<sup>1</sup>*School of Psychology, Trinity College Dublin (Ireland)*

<sup>2</sup>*School of Psychology, Maynooth University (Ireland)*

## Abstract

The nocturnal caregiving burden for parents of juveniles with Type 1 Diabetes (T1D) is significant but underexplored in research to date. To address this, a systematic literature review (SLR) was carried out to capture and aggregate relevant data. This paper describes a secondary, mixed-methods analysis of the 31 publications identified in this SLR, utilising an ‘engaged research’ approach, whereby a patient-researcher carried out the analysis in collaborations with a panel of patient experts. The aim was to respond to the research, interpret the findings and identify issues, through the lens of lived experience. Using thematic analysis, five high-level themes were identified: 1. Distributed knowledge; 2. Maternal burden; 3. Are these conclusions relevant for me?; 4. What about the confounders?; and 5. Outstanding questions. Findings could be helpful for directing future research designs in juvenile T1D and facilitating study outcomes that more accurately reflect the concerns and interests of parent caregivers and their children. This research has demonstrated the value of patient participation in every stage of the health research process.

**Keywords:** *Paediatric Type 1 Diabetes, nocturnal caregiving, engaged research, PPI.*

## 1. Background

Type 1 Diabetes (T1D) is a chronic autoimmune disease, typically diagnosed in childhood. Prevalence rates vary globally, but approximately 1 in 400–600 will receive a diagnosis (Mobasserri et al., 2020). Caring for children with T1D requires around-the-clock care, but little attention has been given to the impact that nocturnal caregiving practice (NCP) has on families. In 2022, a systematic literature review (SLR) was carried out by the authors to explicate nocturnal parental caregiving for juveniles with T1D. This review also aimed to establish the prevalence of NCP, explore associations and predictors, impacts and the role of technology (Howard, Maguire & Corrigan, 2023). The current paper is a commentary on high-level themes and issues that were identified across the body of included literature from the perspective of a researcher with close personal experience of the condition, in collaboration with a PPI (patient and public involvement) expert panel.

## 2. Methods

Thirty-one peer-reviewed papers were included in the SLR (21 quantitative, 7 qualitative, 3 mixed-methods; n = 3,547 parent caregiver participants). A secondary analysis of these publications and the SLR findings was carried out, taking a constructivist standpoint and utilising a thematic analysis methodology. The analytic process was multi-staged and iterative. Stage 1: The patient-researcher carried out an incipient analysis. Stage 2. Initial findings were presented to an expert panel of caregivers for juveniles with T1D (n=4) for discussion and feedback. Stage 3: A Delphi method process (iterative questioning, summarising, questioning) refined diverse opinions to reach a consensus understanding (Linstone & Turoff, 1979). Stage 4: A second focus group facilitated discussion on a high-level rationale for interpreting the analysis, leading to the development of five themes.

### 3. Findings

#### 3.1. Theme 1: Distributed knowledge

Given the collaborative nature of T1D care (patient/caregiver with HCP), as well as the active role required of the patient/caregiver, it was surprising that only two studies referenced stakeholder input in the methodology. Quality assessment found only 10% of the studies were deemed to be of moderately-high quality or above for the item that identifies; ‘evidence that stakeholders have been considered in the design or conduct’. One study developed a questionnaire with a multi-disciplinary team including individuals with T1D, while another developed research materials with a team of experts, but no patients (Barnard et al., 2016; Bergner et al., 2018, cited in Howard et al., 2023).

#### 3.2. Theme 2: Maternal burden in nocturnal caregiving

Across studies reporting caregiver participant gender, 77-100% were female. Interestingly, samples including more fathers appeared to capture a different profile of caregiving behaviour. In Haugstvedt et al., (2011, cited in Howard et al., 2023), utilising a sample that was 48.5% male, only 27% of all the participants engaged in NCP  $\geq 1$  per week - the lowest rate found in the studies reviewed. Given that few caregivers report sharing night-time duties and that more equal division of burden with greater appreciation of a partner’s efforts decreased maternal emotional distress (Feeley et al., 2019; Haugstvedt et al., 2011, cited in Howard et al., 2023), highlighting issues related to gender and caregiving roles is necessary to identify and prioritise targets for intervention and discern requirements for support.

#### 3.3. Theme 3: Is this about me: To what extent are the findings generalisable?

The review included 23 studies that reported mean sample HbA1cs ( $n=2,889$ ). Only one study, Jaser (2017, cited in Howard et al., 2023), used a sample from a clinic and reported both the sample mean A1c and the full, clinic-wide mean A1c (7.8% and 8.4% respectively). The clinic mean serves as a good reference for comparison across the other studies; two studies reported sample means of 8.4%, two reported means above 8.4% and most ( $n=19$ ) reported mean A1cs below 8.4% (lowest = 7.2%). These are not insignificant variations, as shown by the EDIC (epidemiology of diabetes interventions and complications) observational study where a 1% HbA1c increase was shown to be equivalent to an increased risk of T1D complications, which was equivalent to 5.6 - 18 additional years of living with T1D (Bebu et al., 2020).

#### 3.4. Theme 4: What about the confounders?

Analysis of studies, revealed a number of issues or confounding factors, challenging the credibility of some findings for patient-researchers. Lived-experience suggests that the variables identified below would have almost certainly influenced study outcomes if they were not controlled for.

**Treatment regimens.** Many caregivers have experience of a variety of treatment regimens; syringes, insulin pens or pumps for dosing, finger stick blood glucose testing, flash or continuous glucose monitors. Each scenario brings different burdens and challenges. These data were undifferentiated in the majority of studies, making it difficult to find the resulting conclusions convincing.

**Alarm settings and target ranges.** Few studies reported these. For example, Buckhardt et al., (2018, cited in Howard et al., 2023) found that among 49 participants; “most chose a low alert setting between 3.1 and 5.3, and high alert between 8.0 and 20.0”. Where programmed settings on illness-management tools are not explicitly referenced or vary to this degree, it’s difficult to draw meaning from some of the research outcomes.

**Honeymoon period.** The ‘honeymoon period’ is the time it takes for the diseased pancreas to stop producing insulin entirely. During this time illness management can be significantly easier as indigenous insulin is still being produced. It is commonly regarded that a honeymoon period can last up to one year (Sokołowska, Chobot, & Jarosz-Chobot, 2016). While most of the studies referenced a minimum required length of time since diagnosis in their recruitment criteria, these varied significantly (3–12 months), weakening the evidence as the inclusion of ‘honeymooning’ data may obscure and/or dilute findings.

#### 3.5. Theme 5: Outstanding questions of significant interest to caregivers

**Effectiveness of NCP.** Important questions for parents are whether NCP benefits their child’s health and, if it does, what the optimum levels are for balancing burdens with benefits. Only two authors addressed the first question (Monaghan, 2012, 2009; De Beaufort et al., 2021, cited in Howard et al., 2023), with none addressing the second question. No relationship between caregiver sleep and better patient health outcomes was found, however this does not align with lived experience or with evidence across the studies as a whole, where high levels of NCP were found (88% across participants) and, as detailed above, the patient group reported significantly better health outcomes (as measured by A1c) than clinic means.

**Hyperglycaemia.** *Hyperglycaemia* management and mitigation is almost never mentioned in the NCP literature. Feeley et al., (2019, cited in Howard et al., 2023), uses the labels ‘anxiety about blood glucose levels’ and ‘anxiety about hypoglycaemia’ interchangeably, despite the fact that these are not in effect the same thing because ‘blood glucose levels’ could be low (hypoglycaemic) or high (hyperglycaemic). For some parents, the benefits of tight management of hyperglycaemia during the night means that day-time management can afford to be slightly less restrictive. Not all parents can engage at this level. It would be helpful to have the benefits of this facet of NCP justified and validated by the research.

**Myth of overnight blood glucose stability.** Throughout the literature reviewed, there was a marked absence of discussion on overnight blood glucose stability. Evidence is growing, through use of new glucose monitoring technologies that supports what many caregivers have known from their own experience, which is that much greater nocturnal fluctuations in blood glucose occur overnight than previously thought (Gardner et al., 2023). Research is required that responds to these findings.

**Secondary harms for caregivers.** Sullivan-Bolyai, Deatrick, Gruppuso, Tamborlane & Grey et al. (2003) noted that caregiving mothers reporting health problems that they attributed to the impact from caregiving burden. Only three of the other studies identified by the review, from the following 20 years of research, acknowledged this issue and the majority of data referenced was only captured when caregivers incidentally reported impacts from NCP.

#### 4. Discussion and conclusion

This novel approach to engaged research found that the body of literature on nocturnal caregiving for juveniles with T1D contains unintentional biases and confounders that somewhat limit its generalizability and utility. These findings suggest that health-related research would benefit from designing study protocols that incorporate the highest level of patient involvement (driving and directing the work), which will then be more acutely attuned to the specifics of the lived experience, thereby building a more robust evidence base, leading to interventions that have greater acceptability and effectiveness for the target population.

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## HELP-SEEKING INTENTIONS OF SLOVAK UNIVERSITY STUDENTS DURING THE COVID-19 PANDEMIC

Ján Kulan<sup>1</sup>, & Oľga Orosová<sup>2</sup>

<sup>1</sup>Department of Psychology; <sup>2</sup>Department of Educational Psychology and Health Psychology,  
Faculty of Arts, Pavol Jozef Šafárik University in Košice (Slovak Republic)

### Abstract

*Background:* The COVID-19 pandemic had a significant impact on higher education and the lives of university students. This population is often considered vulnerable, with a lower propensity to seek and experience help. *Aim:* The present study aims to investigate the help-seeking intentions and experiences of Slovak university students during the COVID-19 pandemic and other associated factors. *Methods:* During November and December of 2021, 258 students (mean age = 21.86, SD = 2.05; 77.1% women) from Slovak universities participated in an online survey propagated across online Facebook university campus groups in Slovakia. The General Help-seeking Questionnaire (GHSQ) was used to assess students' intentions to seek help (specifically within the next 4 weeks) if they were experiencing a personal or emotional problem. Each source was treated as a separate scale, and an overall scale including all sources of help was utilized. A supplementary question was also included within the GHSQ to assess past help-seeking experiences. The Satisfaction with Life Scale (SWLS) and the Fear of COVID-19 Scale (FCS) were employed in this study. Findings were analysed using the Mann-Whitney U Test and (multiple) linear regression. *Results:* We identified three primary help sources that are likely to be accessed by students when they experience a personal or emotional problem during the COVID-19 pandemic. These sources include informal help from their partner, friends, and parents. The lowest tendency of intentions was to seek help from teachers when students were experiencing a personal or emotional problem. The results indicated that women had a higher tendency of intentions to seek help from informal sources (partner, parents, other relatives) than men. Students with lifetime formal help-seeking experiences (28.2%) had a higher tendency of intentions to seek help from formal sources (such as mental health professionals) than students without lifetime help-seeking experiences. Multiple linear regression revealed associations between gender, satisfaction with life, fear of COVID-19, and help-seeking intentions. Women and students with higher levels of SWLS and FCS exhibited a higher level of help-seeking intentions. *Conclusion:* The results of this study support previous findings related to the willingness of young people, especially to use informal sources for help-seeking. The COVID-19 pandemic has highlighted the need to improve mental health literacy among university students.

*Keywords:* Help-seeking intentions, satisfaction with life, university students, COVID-19.

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### 1. Introduction

The COVID-19 pandemic forced people across the world to change their social life (Arikkatt & Mohanan, 2021). The pandemic has led to high levels of psychological distress, depression, anxiety, and panic behaviors (Giusti et al., 2021). It has had a great impact on the life and well-being of university students. According to research, university students may be at greater risk for poor mental health than the general population (Blanco et al., 2008; in Beks et al., 2018) and are often considered vulnerable, with a lower propensity to seek and experience help (O'Connor et al., 2014).

Help-seeking intention and subsequent behavior have been defined as communication with other people in the sense of obtaining help in terms of understanding, advice, information, treatment, and general support in response to a problem or distressing experience. Help-seeking intention and behavior can be classified into two categories: 1.) informal help-seeking – from family, partner, friends, other relatives, etc., and 2.) formal help-seeking – from mental health professionals, youth workers, teachers, etc. (Rickwood et al., 2005; Çebi & Demir, 2020).

### 2. Design

The study utilized a cross-sectional design.

### 3. Objective

The present study aims to investigate the help-seeking intentions and experiences of Slovak university students during the COVID-19 pandemic, as well as other associated factors such as the well-being and fear of COVID-19 among university students.

### 4. Methods

#### 4.1. Sample and procedure

258 students (mean age = 21.86, SD = 2.05; 77.1% women) from Slovak universities participated in an online survey distributed through various online Facebook university campus groups in Slovakia. The data collection among university students took place between November and December of 2021. Due to the repeated lockdowns caused by the COVID-19 pandemic at the time of the data collection, we were compelled to shift the entire data collection process to an online platform. Participation in the survey was voluntary and anonymous. Data collection was carried out after obtaining informed consent from each participant. The protocol of this study was reviewed and approved by the Ethics Committee at the Faculty of Arts of Pavol Jozef Šafárik University in Košice.

#### 4.2. Measures

The study utilized the General Help-seeking Questionnaire (GHSQ; Rickwood et al., 2005), which comprises 14 items. It was employed to evaluate students' intentions to seek help (specifically within the upcoming 4 weeks) when experiencing personal or emotional problems. Two sources of help-seeking intentions were listed here: 1.) informal sources (e.g., partner like significant boyfriend or girlfriend; friend; parent; other relative/family member) and 2.) formal sources (e.g., mental health professional like a school counsellor, psychologist, psychiatrist; phone helpline; family doctor; teacher). One item was seeking help from someone not listed above, and one item was that a participant would not seek help from anyone. Participants were asked to indicate their level of agreement with the statements on a 7-point scale ranging from 1 (extremely unlikely) to 7 (extremely likely). Each source was treated as a separate scale, and an overall scale including all sources of help was utilized. A supplementary second question was also included within the GHSQ to assess past help-seeking experiences. It was operationalized by asking, whether professional help has been sought in the past for a specific problem and, if help has been sought, how many times it was sought, what specific sources of help were sought, and whether the help obtained was evaluated as worthwhile on a 5-point scale indicating more or less helpfulness (1 – extremely unhelpful; 5 – extremely helpful).

The fear of COVID-19 was measured by the Fear of COVID-19 Scale (Ahorsu et al., 2020) consisting of 7 items. Respondents were asked to indicate their level of agreement with the statements on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The higher score indicates a greater fear of COVID-19 ( $C\alpha=0.622$ ).

The well-being of university students was measured through the construct of subjective well-being within the Satisfaction with Life Scale (SWLS; Diener, Emmons, Larsen, & Griffin, 1985; Džuka & Dalbert, 2002). Respondents were asked to indicate the extent to which they agree with the 5 statements (e.g., “In most ways my life is close to my ideal.”) on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The higher score indicates a higher level of well-being ( $C\alpha=0.877$ ).

#### 4.3. Statistical analyses

Findings were analysed using the Mann-Whitney U Test and (multiple) linear regression.

### 5. Results

#### 5.1. Three primary sources of help which are likely to be accessed by students

We identified three primary sources of help that are likely to be accessed by students when they experience a personal or emotional problem during the COVID-19 pandemic. These sources include informal help from their partner ( $M = 5.37$ ;  $SD = 2.30$ ), friend ( $M = 5.20$ ;  $SD = 2.02$ ), and parents ( $M = 4.94$ ;  $SD = 2.05$ ). The lowest tendency of intentions was to seek help from teachers ( $M = 1.79$ ;  $SD = 1.36$ ). The results indicated that women had a higher tendency of intentions to seek help from informal sources (partner, parents, other relatives;  $M = 19.55$ ;  $SD = 5.32$ ) than men ( $M = 17$ ;  $SD = 6.12$ ). Students with lifetime formal help-seeking experiences (28.2%) had a higher tendency of intentions to seek help from formal sources (such as mental health professionals), than students without lifetime help-seeking experiences.



## 5.2. The associations between gender, satisfaction with life, fear of COVID-19 and help-seeking intention

Multiple linear regression revealed associations between gender ( $\beta = -.19, p < .01$ ), satisfaction with life ( $\beta = .13, p < .05$ ), fear of COVID-19 ( $\beta = .14, p < .05$ ), and help-seeking intentions. Women and students with higher levels of satisfaction with life and fear of COVID-19 exhibited a higher level of help-seeking intentions.

## 6. Discussion and conclusions

The findings of this research study contribute to the important investigation of help-seeking intentions among university students (Rickwood et al., 2005; Çebi & Demir, 2020). The results of this study support previous findings related to the willingness of young people, especially to use informal sources for help-seeking (MZ SR, 2022). The study confirmed the results that females possessed more favorable help-seeking attitudes than males and that perceived social support (friends and significant other), prior help-seeking experience, and gender significantly predicted positive attitudes to seeking psychological help (Çebi & Demir, 2020).

The results of this study could contribute to the implementation of these results into mental health services, counsellors' programs, and university counselling centers, which will focus more on improving help-seeking attitudes, intentions, and behaviors of the university students by targeting and eliminating the main barriers to treatment. The COVID-19 pandemic has highlighted the need to improve mental health literacy among university students. The educational interventions about mental health literacy, de-stigmatization of mental health services, and providing better help-seeking sources of information, as to where exactly the potential providers of help can be found, could be performed. Similarly, this study may contribute to mental disorder treatment among university students and reduce the possible barriers to help-seeking intention and behavior.

The limitations and strengths of this study must be highlighted. The most significant limitation was using only online questionnaires because of the COVID-19 pandemic.

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The background features a teal, textured surface with visible brushstrokes and some cracking. On the left side, there are large, expressive brushstrokes in shades of orange and red. A white square frame is partially visible, overlapping the orange brushstrokes and the teal background.

# Virtual Presentations





## ELKINS HYPNOTIZABILITY SCALE: ADAPTATION OF THE FRENCH VERSION

**Frédérique Robin<sup>1</sup>, Sacha Morice<sup>2</sup>, Elise Le Berre<sup>2</sup>, & Marion Letellier<sup>2</sup>**

<sup>1</sup>*Nantes Université, Univ Angers Laboratoire de psychologie des Pays de la Loire,  
LPPL, UR 4638 (France)*

<sup>2</sup>*Department of Psychology, Nantes University (France)*

### Abstract

This study aims to adapt the Elkins Hypnotizability Scale (EHS, Elkins et al., 2015) to a French sample and to determine its psychometric properties. The EHS was conceived in order to assess individuals' responsiveness towards suggestions guiding hypnotic experiments, ranging from motor responses to imagery and hypnotic amnesia. We also investigated the role of social desirability, attitudes and beliefs towards hypnosis, and vividness of visual imagery on individuals' hypnotizability level. Usually, these factor effects are considered in the light of hypnotizability (see Bret et al., 2023; Koep et al., 2020). Preliminary results revealed that the French version of EHS showed a good internal consistency. The gender effect on EHS scores was not significant. A significant, moderate and positive correlation between the EHS and the attitudes/beliefs towards hypnosis suggest that attitudes/beliefs might predict efficiently the responsiveness to hypnotic suggestions. A moderate and a positive correlation was found between the EHS and the vividness of visual images, no significant correlation was found between the social desirability and the EHS scale, confirming its relevance. These findings tend to show that the French adaptation of the EHS may be an available brief assessment of hypnotic suggestibility, useful for researchers and clinical practitioners.

**Keywords:** *Attitudes, beliefs, hypnosis, hypnotizability, suggestibility.*

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### 1. Introduction

According to Elkins et al. (2015, p. 382) hypnosis is defined as “a state of A state of consciousness involving focused attention and reduced peripheral awareness characterized by an enhanced capacity for response to suggestion.” The hypnotic experiment also called “hypnotic trance” comprises three ingredients: (1) the absorption in the hypnotic experiment. (2) The dissociation, that is, the individual focusing on its internal and subjective sensations, emotions, images and thoughts while inhibiting the external stimuli from the environment. (3) The suggestibility reflecting the inclination to accept and execute the hypnotic suggestions (Kekecs et al., 2014; Robin, 2013). Gueguen et al. (2015) have reported proofs of the hypnosis efficiency as therapeutic for the reduction of pain, anxiety and stress in medical settings (Montgomery et al., 2007). Montgomery et al.'s meta-analysis (2011) emphasized the importance of the suggestions' contents and the hypnotic suggestibility called “hypnotizability”. The therapeutic treatment's efficiency is strongly linked to the individuals' hypnotizability level (Kirsch, 1991; Lynn et al., 2015). The hypnotizability is defined as the inclination of individuals to respond to hypnotic suggestions and has raised important debates between the different theoretical currents of hypnosis (Barnier et al., 2008). Elkins et al. (2015, p. 383) defined the hypnotizability/hypnotic suggestibility as “an individual's ability to experience suggested alterations in physiology, sensations, emotions, thoughts, or behaviour during hypnosis”. Currently, there are more than 25 hypnotic suggestibility scales (Gay, 2007); nevertheless, none of them was translated and validated in a French version.

The Elkins Hypnotizability Scale (EHS, Elkins et al., 2015) was recently developed for a democratization of the hypnotic suggestibility assessment in clinical and experimental settings, less than 10% of hypnotizability scales being used in clinical practice. The lack of resort to these scales hinges on some inconveniences, like a too long testing time, the occurrence of controversial suggestions such as age regression or the sensitivity of the measurement. The EHS is described as pleasant for participants (Yek & Elkins, 2021), quick to administer, with reliable and valid results (Elkins, 2014; Elkins et al., 2015; Kekecs et al., 2016; 2021; Koep et al., 2020; Kvitchasty et al., 2022). The EHS consists of a quick

presentation of the scale, followed by a hypnotic induction of internal focus and relaxation. Then, a series of 12 hypnotic suggestions are orally presented to the participant/patient, one by one. They range from simple motor suggestions to suggestions involving a deeper state of hypnosis such as visual hallucination, and at the end, a post-hypnotic amnesia suggestion. Preliminary analyses showed that the EHS has good internal consistency (.85), test-retest reliability (.93) and convergent validity with the Stanford Hypnotic Susceptibility Scale. Moreover, Form C (.82, see Elkins, 2014) was confirmed with samples of college and university students (see Kekecs et al., 2016; Kekecs et al., 2021). The analysis of the principal components revealed a four-factor structure that accounted for 65.37% of the variance. The first factor is *direct motor levitation/imagery*; the second one is *visual/perceptual*; the third one is *olfactory/perceptual*; the fourth factor is *Motor Challenge* (the presentation of this scale is more detailed in the material section, see below). Nevertheless, this factorial structure requires confirmatory analyses and subsequent cross-validation in order to be confirmed (see Elkins et al., 2015; Zimmerman et al., 2023). As the EHS is considered as the new gold standard for assessing hypnotizability, it is useful for French natives to have this valid and reliable scale to assess individuals' hypnotizability both in clinical and research settings. Actually, French clinicians and researchers do not have a valid tool to measure the inclination of individuals to hypnotic suggestions, which calls into question the studies based on hypnosis. Therefore, the current study aims to adapt the EHS and to test its reliability and validity for a French sample. The outcomes are successful treatments and these are linked to positive attitudes towards hypnosis (Mendoza et al., 2017). Negative and unrealistic beliefs may interfere with the patient's adherence to the treatment and cooperation with the practitioner. Although attitudes and beliefs have been recognized as main determinants in how patients respond to hypnosis, research on this topic is scant. Nevertheless, a few studies have demonstrated that positive attitudes/beliefs about hypnosis are associated with higher levels of hypnotic suggestibility (Lynn & Green, 2011). Therefore, we expected positive correlation between scores resulting from the French version of VSABTH-C (Bret et al., 2023) and the French version of the EHS. Positive attitudes/beliefs towards hypnosis might be high and positively correlated with moderate and high level of hypnotizability, and therefore the ease with which the individuals carry out the hypnotic suggestions. This relationship is crucial to determine the effect of hypnotic therapy on the treatment.

Kirsch and Braffman (2001) considered that variations of hypnotizability level were correlated with the ability to engage in an imaginative experiment. However, some authors have shown that imaging ability does not consistently correlate with hypnotic suggestibility while imagining process seems to be crucial for encoding the hypnotic suggestions (Laurence et al. 2008; Terhune & Cardeña, 2010). Grebot and Paty (2005) found significant relation between mental imagery and hypnotic suggestibility. Therefore, we thought useful to test correlation between hypnotizability and visual imagery abilities by using the Vividness of Visual Imagery Questionnaire (Marks, 1973), as this relationship has never been explored with the EHS. Our assumption was that high and moderate levels of hypnotizability would correlate positively with vividness of visual images, suggesting that imagery abilities may be a predictor of hypnotizability.

Spanos (1991) pointed out that hypnotizability level variations hinge on individuals' compliance by giving the impressive to be a "good" hypnotic participant/patient (whether it is consciously or not). Compliance might result from the social desirability that consists in presenting oneself in a favourable light to one's interlocutors. In this view, the responses to hypnotic suggestions would be likely governed by a personality trait, such as social desirability. Notably, it also turns out that EHS scores might be biased because some participants' responses are imbued with strong social desirability.

Taking into consideration all of the above, the present study aims to analyze: (1) the internal consistency of EHS in a French version; (2) the variation across beliefs/attitudes towards hypnosis, visual imagery abilities, and social desirability since no study has presented these comparisons so far, which would contribute to the knowledge of factors modulating responses to hypnotic suggestibility. The effects of these factors (beliefs/attitudes towards hypnosis, vividness of visual imagery, social desirability) are usually considered in the light of hypnotizability, i.e., the ease with which the individual behaves towards a hypnotic suggestion, such as hand levitation. Nevertheless, the relationship between these factors and Elkins hypnotizability scale has not been studied yet. It therefore seemed useful to examine these personality factors independently of each other. Therefore, the study second purpose was to contribute to a better knowledge of determinants in the hypnotic responses.

## 2. Method

### 2.1. Participants

Forty-two volunteers, aged from 18 to 45 years old ( $M = 26.70$ ;  $SD = 6.21$ ), were recruited on social networks. They were native French speaker and they never had previous experience with hypnosis. Females ( $n = 22$ ;  $M = 25.00$ ;  $SD = 4.95$ ). Male participants ( $n = 20$ ;  $M = 28.60$ ;  $SD = 6.98$ ).

## 2.2. Measures

**The French version of the Elkins Suggestibility Scale (EHS, Elkins et al., 2015)** was used to measure hypnosis suggestibility. As in the original English version, the French version of EHS began with a short introduction followed with a classical hypnotic induction of attentional absorption and relaxation, then followed by a series of 12 hypnotic suggestions guiding hypnotic experiments. Suggestions were ranging from motor responses (5 suggestions) to imagery (6 suggestions) and hypnotic amnesia (1 suggestion). Responses to each suggestion were scored from 0 to 12, according to the extent of response the participant gave to the hypnotic suggestion, indicating the participant's level of hypnotic responsiveness.

**The Valencia Scale of Attitudes and Beliefs Toward Hypnosis - Client Version (VSABTH-C, Capafons et al., 2004; 2018; Bret et al., 2023)** adapted in the French version of a 37-item self-report measurement. Each item is measured on a 6-point scale ranging from: 1 (completely disagree) to 6 (completely agree).

**The Vividness of Visual Imagery Questionnaire (VVIQ, Marks, 1973)** adapted in the French version has 16 items administered twice, the first time with eyes open, the second time with eyes closed. High scores reflect high vividness of images on rating scale with 1-point for "no image at all, you only know that you are thinking of the object" and 5-points for "perfectly clear and vivid like a normal vision".

**The Social Desirability (DS 36)** scale is assessed on two dimensions: self-illusion and impression management (Tournois et al., 2000). Self-illusion (also called self-deception) refers to conscious or automatic positive self-esteem. Impression management (or hetero-deception) is a deliberate strategy used to give others a favourable self-image. Social desirability is defined as the tendency to distort self-descriptions in order to show oneself in a favourable light, i.e., a tendency to give an exaggerated self-profile. The DS36 comprises 36 assertions with 18 items assessing self-illusion (*I am always optimistic*) and 18 items assessing impression management (*I am always polite*). The low correlation between the two factors ( $\alpha = .24$ ) testifies to their quasi-independence.

## 2.3. Procedure

Participants filled the informed consent, then they answered to the demographic questionnaire and to a few questions about their knowledge and potential experience of hypnosis. Thereafter, each participant was individually administered the EHS or the VSABTH-C in a counterbalanced order. After that, they filled the DS36 and then the VVIQ. All participants were examined after the experiment. The experimentation took approximatively one hour and half for each participant. This study followed the ethical principles in line with the Helsinki declaration.

## 3. Results

### 3.1. Reliability analyses

Cronbach's alpha was used to measure the reliability of the French version of the EHS. Descriptive analysis was conducted on each item of the EHS. The average EHS score for females and males were respectively,  $M = 5.41$  ( $SD = 3.03$ );  $M = 5.20$  ( $SD = 3.07$ ). There was no significant difference between females and males,  $t(40) = 0.222$ ,  $p = .826$ . All items indicated good reliability ( $\alpha = .826$ ). Table 1 shows the inter-item correlations of the EHS. Overall, the EHS items correlated significantly.

Table 1. Correlation matrix between 12 items of EHS.

|        | EHS 1    | EHS 2    | EHS 3    | EHS 4    | EHS 5  | EHS 6  | EHS 7  | EHS 8    | EHS 9  | EHS 10 | EHS 11 |
|--------|----------|----------|----------|----------|--------|--------|--------|----------|--------|--------|--------|
| EHS 2  | 0.428**  | —        |          |          |        |        |        |          |        |        |        |
| EHS 3  | 0.548*** | 0.483**  | —        |          |        |        |        |          |        |        |        |
| EHS 4  | 0.337*   | 0.592*** | 0.615*** | —        |        |        |        |          |        |        |        |
| EHS 5  | 0.183    | 0.298    | 0.333*   | 0.542*** | —      |        |        |          |        |        |        |
| EHS 6  | 0.480**  | 0.386*   | 0.340*   | 0.303    | 0.164  | —      |        |          |        |        |        |
| EHS 7  | 0.389*   | 0.432**  | 0.412**  | 0.379*   | 0.085  | 0.350* | —      |          |        |        |        |
| EHS 8  | 0.198    | 0.301    | 0.412**  | 0.506*** | 0.282  | 0.303  | 0.185  | —        |        |        |        |
| EHS 9  | 0.183    | 0.043    | 0.333*   | 0.152    | 0.143  | 0.164  | 0.341* | 0.542*** | —      |        |        |
| EHS 10 | 0.213    | 0.382*   | 0.389*   | 0.397**  | 0.389* | 0.192  | 0.083  | 0.397**  | 0.234  | —      |        |
| EHS 11 | 0.176    | 0.379*   | 0.221    | 0.165    | 0.021  | 0.257  | 0.196  | 0.360*   | 0.021  | 0.358* | —      |
| EHS 12 | 0.064    | 0.149    | 0.116    | 0.189    | -0.070 | 0.057  | 0.164  | 0.189    | -0.070 | -0.082 | 0.142  |

Note. \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

### 3.2. Comparisons between VSABTH-C and EHS scores

The major result highlights moderate and positive correlation between the total EHS scores and the total VSABTH-C scores ( $r = .445, p < .05$ ), especially scores for positive attitude/belief towards hypnosis ( $r = .483, p < .05$ ); correlations were significant for two positive dimensions: Interest ( $r = .427, p < .05$ ) and Control ( $r = .481, p < .05$ ). Correlations for the six other dimensions were not significant. Three sub-groups of participants were formed according to their low, medium and high mean scores on EHS. The repeated ANOVA measures revealed a significant interaction effect between Attitudes/beliefs towards hypnosis x EHS levels ( $F(2, 39) = 3.53, p < .001, \eta^2_p = .153$ ). The *post-hoc Bonferroni* comparisons confirmed no difference between the three levels of hypnotizability as regards negative attitudes towards hypnosis. Conversely, whereas participants with low and medium level of hypnotizability were not influenced by the attitudes towards hypnosis, it appeared that individuals with high level of hypnotizability have more positive attitudes towards hypnosis than ones with a low level ( $t(39) = 4.248, p = .002$ ). These results evidence that the level of hypnotic suggestibility may be affected by positive attitudes and beliefs towards hypnosis.

The order of administration of both scales (EHS vs. VSABTH-C) was examined in order to evidence the impact of the hypnotic experiment on the attitudes/beliefs towards hypnosis when the EHS is presented before the VSABTH-C. The Mann-Whitney test revealed that participants who first experienced hypnosis showed higher scores for two positive factors of VSABTH-C: “help” ( $U(40) = 139, p = .02, rb = .37$ ) and “control” ( $U(40) = 154.50, p = .05, rb = .30$ ). On the contrary, participants who completed the VSABTH before experiencing hypnotic suggestions showed higher scores for one negative dimension of the VSABTH-C: “fear” ( $U(40) = 139, p = .02, rb = .37$ ).

### 3.3. Comparison between VVIQ and EHS scores

Spearman correlation test revealed positive and moderate correlation between the EHS and VVIQ scale on total scores ( $r(40) = .403, p < .05$ ). This result might suggest that vividness of visual images may be one of predictors of hypnotizability level. Nevertheless, we did not find differences between VVIQ scores and the levels of hypnotizability.

### 3.4. Comparison between DS36 and EHS scores

Spearman correlation did not show significant correlation between DS36 scores and the hetero-deception and the self-illusion sub-scales, respectively ( $r = .121; r = .184$ ), confirming the relevance of the EHS scale for which hypnotic behaviors were not biased by a personality trait like social desirability.

## 4. Discussion and conclusion

As many researchers and practitioners have underlined, before using hypnosis as a therapeutic complement, it is important to know patients' hypnotic suggestibility, which might influence treatment outcomes, with high or moderate hypnotizability linked to positive outcomes (Bret et al., 2023). The internal consistency of EHS for the first time in a French version matches with the analyses carried out in previous studies (Elkins, 2014; Elkins et al., 2015; Kekecs et al., 2016; 2021; Koep et al., 2020; Kvitchasty et al., 2022). EHS items showed significant and high correlation values. Gender-related variations, as in most previous studies demonstrated invariance. Using hypnotizability scales, most of the studies did not found correlation between hypnotic suggestion responsiveness and personality dimensions (Green, 2004; Zhang et al., 2017). The present findings revealed that personality dimension such as social desirability was not associated with the level of hypnotizability, testifying the EHS French version validity and applicability. Many studies have observed a significant and positive relationship between imagining abilities and hypnotic suggestibility (Glisky et al., 1993; Grebot et al., 2005). Our findings support these predictions: while correlations remain moderate in size, they likely support the hypothesis about the relevance of the vivid visual images as a predictor about hypnotizability and a fortiori the positive outcomes of hypnotherapy. Overall, our results support our predictions regarding the relationship between hypnotizability level and attitudes/beliefs towards hypnosis. The results indicated that participants with positive beliefs towards hypnosis (Control, and Interest) are also more prone to accomplish hypnotic suggestions and hence to reach a high level of hypnotizability. This finding is in line with the response expectancy theory, based on the assumption that the ease with which individuals respond to hypnotic suggestions hinge on expectations of particular behaviours in hypnosis (Kirsch & Lynn, 1998; Lynn & Kirsch, 2006). In return, the success of the hypnotic suggestions reinforce beliefs and motivation to respond in conformity with expectancies. These preliminary data showed that the French adaptation the EHS is an available brief assessment of hypnotic suggestibility, useful for researchers and clinical practitioners. Current measures were collected among a sample of healthy adults

and tend to confirm Elkins et al. (2015) findings collected with outpatient clinical settings. Nevertheless, this study merits to be pursued notably for exploring the factorial structure of the EHS (Zimmerman et al., 2023).

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# CHILDHOOD EMOTIONAL ABUSE AND PROBLEMATIC INTERNET USE: TRAIT MINDFULNESS AND DISSOCIATIVE EXPERIENCES AS MEDIATORS

Valeria Verrastro<sup>1</sup>, Valeria Saladino<sup>2</sup>, Danilo Calaresi<sup>1</sup>,  
Janine Gullo<sup>1</sup>, & Francesca Cuzzocrea<sup>1</sup>

<sup>1</sup>Department of Health Sciences, Magna Graecia University of Catanzaro (Italy)

<sup>2</sup>Department of Human, Social and Health Sciences, University of Cassino and Southern Lazio (Italy)

## Abstract

The escalating prevalence of internet usage has prompted a heightened curiosity in comprehending the factors contributing to problematic internet use (PIU). Specifically, the study delves into the potential link between childhood emotional abuse (CEA) and PIU based on the Compensatory Internet Use Theory (CIUT), recognizing CEA as a precursor to mental health issues, with PIU as a possible coping mechanism. Additionally, the research explores the mediating roles of trait mindfulness (TM) and dissociative experiences (DE), hypothesizing that trait mindfulness may provide adaptive coping strategies, while dissociative experiences may lead to avoidance behaviors like excessive internet use. The study enlisted 1074 Italian adolescents (537 girls) aged between 14 and 17 years ( $M = 15.65$ ,  $SD = .92$ ). Participants filled out the following self-report instruments: Childhood Emotional Abuse Subscale from the Childhood Trauma Questionnaire-Short Form (CTQ-SF), Five Facets Mindfulness Questionnaire (FFMQ), Adolescent Dissociative Experiences Scale (A-DES), Shorter Promis Questionnaire (SPQ). To mitigate the influence of background variables, a Multivariate Analysis of Covariance (MANCOVA) was conducted. Subsequently, Structural Equation Modeling (SEM) with latent variables was employed to assess the proposed mediation model. Finally, a Multiple-Group Path Analysis (MGPA) was conducted to assess the gender invariance of the hypothesized model. Gender and parental educational level were controlled for based on the findings of the MANCOVA. SEM yielded remarkable fit indices for the hypothesized model:  $\chi^2(72) = 209.92$ ;  $p < .001$ , CFI = .98, RMSEA = .04 (90% CI = .04 – .05), SRMR = .03. All direct and indirect pathways were statistically significant ( $p < .001$ ): from trait CEA to TM ( $\beta = -.35$ ), to DE ( $\beta = .52$ ), to PIU ( $\beta = .27$ ); from TM to PIU ( $\beta = -.17$ ); from DE to PIU ( $\beta = .37$ ); from trait CEA to PIU through TM ( $\beta = .06$ ), to PIU through DE ( $\beta = .19$ ). MPGA highlighted the gender invariance of the model:  $\Delta\chi^2(13) = 19.16$ ,  $p = .12$ ,  $\Delta CFI = .001$ . These findings emphasize the critical significance of recognizing and addressing the distinct and profound challenges confronted by adolescents who have endured CEA, especially those who exhibit heightened levels of dissociation and deficits in trait mindfulness. Such individuals may be at a heightened risk for engaging in maladaptive online behaviors. Consequently, the development and implementation of interventions tailored to target dissociation and enhance mindfulness skills could prove to be clinically effective in preventing and managing PIU among emotionally abused youth.

**Keywords:** *Childhood emotional abuse, trait mindfulness, dissociative experiences, problematic internet use, adolescents.*

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## 1. Introduction

In recent years, widespread internet use, particularly among youths, has created a virtual world where individuals invest time and share activities and opinions (Milyavskaya et al., 2018). However, excessive reliance on the internet for social interaction can impede the development of crucial social and emotional skills and foster a problematic internet use (PIU) (Boursier & Manna, 2019). The Compensatory Internet Use Theory (CIUT) suggests that maladaptive online activities can compensate for psychosocial problems (Kardefelt-Winther, 2014). Indeed, adverse childhood experiences, particularly emotional abuse, appears to be potential contributors to PIU (Kate et al., 2021). Trait mindfulness, the capacity to be aware of present experiences (Bajaj & Pande, 2016), emerges as another key element in mitigating the risk of PIU by promoting self-regulation and functional coping strategies (Li et al., 2017).

Furthermore, emotional abuse leaves lasting scars and is linked to dissociative experiences (Kate et al., 2021), which may be associated with unique features of the internet, such as anonymity (Canan et al., 2012). Because emotional abuse can have detrimental effects on a person's sense of self-worth and self-esteem, it is a significant risk factor for reduced mindfulness (Emirtekin et al., 2019). Finally, gender differences in PIU are conflicting, with different findings across studies (Arpaci, 2022; Durkee et al., 2012).

## 2. Objectives

The current study aimed to investigate the mediating roles of trait mindfulness and dissociative experiences in the connection between childhood emotional abuse (CEA) and problematic internet use (PIU) in adolescents. Additionally, the study sought to assess the gender invariance of the mediation model.

## 3. Methods

### 3.1. Participants

The study included 1074 Italian adolescents, evenly divided between girls and boys, aged 14 to 17 years (average age = 15.65,  $SD = .92$ ), attending various high schools, including lyceums, technical colleges, and vocational colleges. The inclusion criteria specified individuals aged 14 to 17 who were fluent in Italian, engaged on the internet for at least 1 hour daily on average, and had a minimum of six months of internet usage. Participants were recruited from different cities across Italy, and parents' educational levels varied within the sample. For mothers, 28% had an elementary school diploma, 23% had a middle school diploma, 34% had a high school diploma, and 15% had a university degree. Fathers' educational levels were distributed similarly, with 29% having an elementary school diploma, 28% having a middle school diploma, 30% having a high school diploma, and 13% having a university degree.

### 3.2. Procedure

This study received approval from the Institutional Review Board of the Institute for the Study of Psychotherapy, School of Specialization in Brief Psychotherapies with a Strategic Approach, in accordance with international standards such as the Helsinki Declaration and the Italian Association of Psychology (AIP). Participants completed a mandatory online questionnaire with no missing data. Their involvement was voluntary, and no rewards or compensations were provided. Throughout the research phases, the privacy of participants was ensured. The research employed IBM SPSS for descriptive statistics, correlations, and initial analyses, and the primary analyses were carried out in Rstudio utilizing the lavaan package.

### 3.3. Measures

The study measured adolescents' CEA using the CEA subscale of the Childhood Trauma Questionnaire-Short Form (CTQ-SF, Bernstein & Fink, 1998). Participants rated the severity of CEA in childhood by responding to five items, such as "People in my family said hurtful or insulting things to me," on a 5-point Likert scale ranging from 1 (never true) to 5 (very often true). The average score across the five items was calculated, with higher scores reflecting higher levels of CEA in childhood.

Trait mindfulness was assessed using the Five Facets Mindfulness Questionnaire (FFMQ; Baer et al., 2006), which is a 39-item self-report. Participants responded to statements like "When I'm walking, I deliberately notice the sensations of my body moving" on a 5-point Likert scale, ranging from 1 (never or very rarely true) to 5 (very often or always true). Higher scores on the FFMQ indicated higher levels of trait mindfulness.

Dissociative experiences in adolescents were evaluated using the Adolescent Dissociative Experiences Scale (A-DES; Armstrong et al., 1997). The scale comprises 30 items, reflecting instances of dissociative experiences such as "I get confused about whether I have done something or only thought about doing it." Participants rated these items on an 11-point Likert scale, ranging from 0 (never) to 10 (always), with higher scores indicating elevated levels of dissociative experiences.

PIU was assessed using the Shorter Promis Questionnaire (Christo et al., 2003). The Italian version includes three additional scales for problematic video game, internet, and mobile phone use (Couyoumdjian et al., 2006). In this study, only the PIU subscale was utilized. Adolescents responded to 10 items, indicating behaviors and attitudes regarding internet use, such as "I often find myself using the

internet much more than I would like.” Responses were recorded on a 6-point Likert scale, ranging from 0 (strongly disagree) to 5 (strongly agree), with higher scores indicating higher levels of PIU.

#### 4. Results

##### 4.1. Descriptive Statistics, Correlations, and preliminary analyses

Table 1 presents descriptive statistics and correlations among all study variables.

Table 1. Descriptive Analysis and Correlations.

|                              | M    | SD  | Ske  | Kur  | $\alpha$ | 1      | 2      | 3     |
|------------------------------|------|-----|------|------|----------|--------|--------|-------|
| 1. Childhood Emotional Abuse | 1.99 | .76 | .54  | -.18 | .81      | -      | -      | -     |
| 2. Trait Mindfulness         | 2.96 | .38 | -.47 | .78  | .80      | -.30** | -      | -     |
| 3. Dissociative Experiences  | 1.92 | .99 | .17  | .99  | .91      | .47**  | -.38** | -     |
| 4. Problematic Internet Use  | 2.54 | .92 | -.35 | .47  | .81      | .44**  | -.36** | .53** |

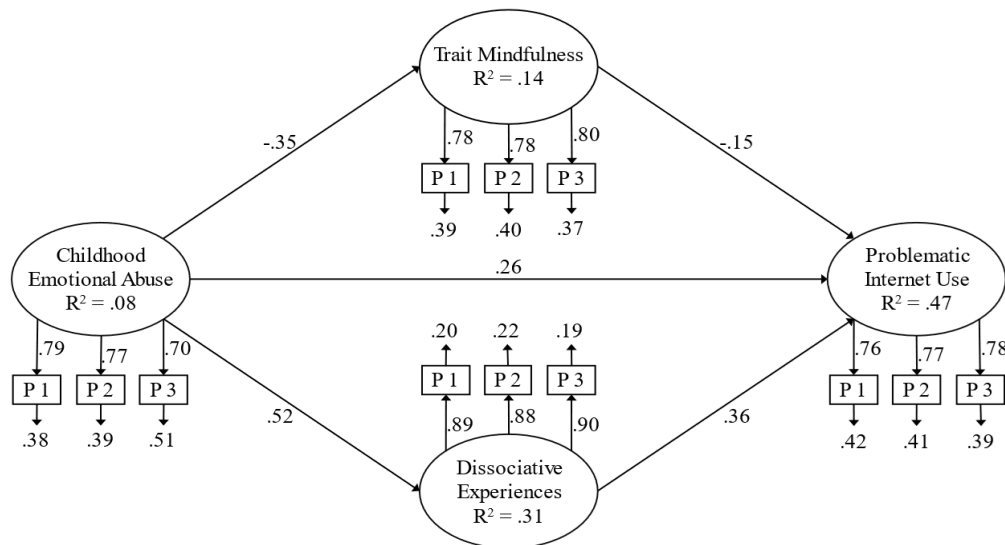
Note: \*  $p < .01$ .

Preliminary analyses were undertaken to examine the influence of gender, mothers’ educational level, and fathers’ educational level on the study variables. A multivariate analysis of covariance (MANCOVA) revealed significant multivariate effects for mothers’ educational level, as indicated by Wilks’s  $\lambda = .97$ ,  $F(4, 1067) = 8.60$ ,  $p < .001$ ,  $\eta^2 = .03$ . Subsequent univariate ANOVAs demonstrated the impact of mothers’ educational level on Childhood Emotional Abuse (CEA),  $F(1, 1070) = 18.26$ ,  $p < .001$ ,  $\eta^2 = .02$ , on trait mindfulness,  $F(1, 1070) = 8.35$ ,  $p = .004$ ,  $\eta^2 = .01$ , on dissociative experiences,  $F(1, 1070) = 29.59$ ,  $p < .001$ ,  $\eta^2 = .03$ , and on Problematic Internet Use (PIU),  $F(1, 1070) = 11.97$ ,  $p = .001$ ,  $\eta^2 = .01$ . Specifically, adolescents with mothers possessing higher education reported lower levels of CEA, dissociative experiences, and PIU, and higher levels of trait mindfulness. No multivariate effects were observed for fathers’ educational level, Wilks’s  $\lambda = .996$ ,  $F(4, 1067) = .94$ ,  $p = .44$ ,  $\eta^2 = .004$ , or gender, Wilks’s  $\lambda = .997$ ,  $F(4, 1067) = .88$ ,  $p = .48$ ,  $\eta^2 = .003$ . While only mothers’ educational level showed multivariate effects, the main analyses were adjusted for gender, mothers’ educational level, and fathers’ educational level to ensure a conservative test of hypotheses.

##### 4.2. Mediation model

The proposed model was examined through Structural Equation Modeling (SEM) with latent variables (see Figure 1), and the findings revealed a good fit between the model and the data:  $\chi^2(72) = 209.92$ ;  $p < .001$ , CFI = .98, RMSEA = .04 (90% CI = .04 – .05), SRMR = .03. Importantly, significant relationships were identified across all direct and indirect paths, as outlined in Table 2.

Figure 1. Structural model of associations between Childhood Emotional Abuse, Trait Mindfulness, Dissociative Experiences, and Problematic Internet Use.



Note: only direct paths are reported for clarity purposes; correlations between background variables and paths from background variables were not presented for clarity purposes; P = parcel.

Table 2. Path Estimates, SEs and 95% CIs.

|  | $\beta$ | $p$    | SE  | Lower Bound (BC) 95% CI | Upper Bound (BC) 95% CI |
|--|---------|--------|-----|-------------------------|-------------------------|
| <b>Direct Effect</b>                                 |         |        |     |                         |                         |
| Childhood Emotional Abuse → Trait Mindfulness        | -.35    | < .001 | .02 | -.22                    | -.13                    |
| Childhood Emotional Abuse → Dissociative Experiences | .52     | < .001 | .05 | .59                     | .79                     |
| Childhood Emotional Abuse → Problematic Internet Use | .27     | < .001 | .06 | .23                     | .46                     |
| Trait Mindfulness → Problematic Internet Use         | -.17    | < .001 | .11 | -.64                    | -.22                    |
| Dissociative Experiences → Problematic Internet Use  | .37     | < .001 | .04 | .26                     | .44                     |
| <b>Indirect Effect via Trait Mindfulness</b>         |         |        |     |                         |                         |
| Childhood Emotional Abuse → Problematic Internet Use | .06     | < .001 | .02 | .04                     | .12                     |
| <b>Indirect Effect via Dissociative Experiences</b>  |         |        |     |                         |                         |
| Childhood Emotional Abuse → Problematic Internet Use | .19     | < .001 | .04 | .18                     | .32                     |

Note:  $p$  = level of significance; SE = Standards Errors; BC 95% CI = Bias Corrected-Confidence Interval.

### 4.3. Moderating role of gender

A multigroup path analysis was executed on the proposed model to assess whether structural paths varied between boys and girls. The fit of a constrained model, where paths were set equal across both groups ( $\chi^2(141) = 284.33$ ,  $p < .001$ , CFI = .982), was compared with an unconstrained model allowing all paths to vary between the two groups ( $\chi^2(128) = 263.47$ ,  $p < .001$ , CFI = .983). The fit indices for the unconstrained model did not significantly differ from the constrained model, suggesting structural equivalence between the two groups ( $\Delta\chi^2(13) = 19.16$ ,  $p = .12$ ,  $\Delta CFI = .001$ ). Consequently, the associations were found to be similar for both boys and girls.

## 5. Discussion

The study explored the mediating roles of trait mindfulness and dissociative experiences in the relationship between CEA and PIU. The results are in line with the CIUT and suggests that emotionally abused adolescents may develop lower mindfulness capabilities and higher dissociative experiences, which in turn may foster PIU as a maladaptive coping mechanism. CEA can hinder the development of emotional regulation skills (Emirtekin et al., 2019). In turn, trait mindfulness, emphasizing awareness and acceptance of emotions (Bajaj & Pande, 2016), acts as a mediator by fostering healthier emotional regulation strategies, reducing the need for maladaptive coping mechanisms like PIU (Li et al., 2017). Specifically, individuals with high trait mindfulness may mitigate the negative impact of CEA by enhancing their ability to cope with emotional distress (Emirtekin et al., 2019), reducing the likelihood of resorting to problematic internet use as a coping mechanism (Raj et al., 2022). Furthermore, dissociative experiences may serve as a coping strategy to avoid confronting the emotional consequences of CEA (Kate et al., 2021). This avoidance mechanism, in turn, may lead individuals to engage in PIU as a means of escaping or distancing themselves from the emotional distress associated with past abuse (Canan et al., 2012). The internet, with its features like anonymity, may thus provide a virtual escape for individuals with dissociative experiences (Kate et al., 2021). The current study further validates the applicability of its findings to both genders, indicating that the differences in PIU observed between boys and girls in existing literature could be attributed to individual differences in CEA, trait mindfulness, and dissociative experiences (Arpaci, 2022; Durkee et al., 2012). This study has limitations. It is cross-sectional, preventing predictions about the direction of effects, necessitating confirmation through longitudinal research. Online data collection may limit generalization to those with internet access, and face-to-face methods could mitigate this bias in future studies. Additionally, reliance on self-report instruments might introduce biases, suggesting the need for multi-informant instruments in future research to enhance result accuracy.

## 6. Conclusion

This research provides practical insights into adolescents' problematic internet use (PIU), emphasizing the role of childhood emotional abuse (CEA), trait mindfulness, and dissociative experiences. The findings underscore the significance of addressing emotional awareness and acceptance, linking CEA, trait mindfulness, and dissociative experiences. Treatments targeting emotional awareness and acceptance have demonstrated positive effects on PIU and psychological well-being. Therapies focused on trait mindfulness and dissociative experiences are statistically and clinically effective, promoting overall quality of life and preventing psychopathology. Recognizing gender differences in these constructs suggests the clinical importance of tailored interventions for both boys and girls with PIU issues. Future research should explore the generalization of these interventions to diverse populations, including early adolescents and children, in order to address CEA exposure and prevent the development of PIU.

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## DEMORALIZATION AFFECTS QUALITY OF LIFE IN TERMINAL CANCER PATIENTS IN PALLIATIVE CARE

Valentina Tesio<sup>1</sup>, Andrea Bovero<sup>2</sup>, & Ada Ghiggia<sup>3</sup>

<sup>1</sup>Department of Psychology, University of Turin, Turin (Italy)

<sup>2</sup>Clinical Psychology Unit, AOU Città della Salute e della Scienza, Turin (Italy)

<sup>3</sup>Department of Life Sciences, University of Trieste, Trieste (Italy)

### Abstract

**Objective:** Demoralization implies a persistent inability to cope with a stressful situation and is characterized by feelings of hopelessness and helplessness due to loss of purpose and meaning in life. Although years of research have demonstrated its clinical importance, there are few studies that deepen the relationship between demoralization and health-related quality of life (HRQoL) in terminal cancer patients in palliative care. The aim of this study is to specifically examine the prevalence of demoralization in a sample of terminally ill cancer patients and assess its independent effect on patients' HRQoL, controlling for other clinical and psychological variables.

**Methods:** Data were collected from 372 terminal cancer patients undergoing palliative care. The Edmonton Symptom Assessment System (ESAS) for symptoms of palliative care patients, the Hospital Anxiety and Depression Scale (HADS) for psychological distress, the Functional Assessment of Cancer Therapy Scale - General Measure (FACT-G) for HRQoL and the Functional Assessment of Chronic Illness Therapy - Spiritual Well-Being for spirituality (FACIT-Sp) were used. In addition, Demoralization was assessed using the Demoralization Scale - Italian version (DS-IT).

**Results:** According to the DS-IT, 48.4% of the recruited terminal cancer patients were severely demoralized, and 13.7% showed moderate demoralization. Demoralization was strongly correlated with HRQoL, which was severely impaired (mean FACT-G (SD) = 53.52 (14.7)). The regression analysis showed that psychological distress (HADS:  $\beta = -0.42$ ,  $p < .001$ ), as well as "Disheartenment" ( $\beta = -0.21$ ,  $p < .001$ ) and "Sense of Failure" ( $\beta = -0.11$ ,  $p = .003$ ) subscales of the DS-IT were the strongest contributors for HRQoL, followed by the "Dysphoria" subscale ( $\beta = -0.07$ ,  $p = .034$ ) of the DS-IT and the "Appetite" ( $\beta = -0.09$ ,  $p = .012$ ), "Lack of Well-Being" ( $\beta = -0.08$ ,  $p = .032$ ), and "Drowsiness" ( $\beta = -0.07$ ,  $p = .035$ ) subscales of the ESAS, with the final model explaining 70% of the variance of the FACT-G.

**Conclusions:** The results of the present study highlight the presence of high levels of demoralization in terminal cancer patients and show that psychological distress and demoralization are the main independent negative factors affecting HRQoL in these patients. From a clinical perspective, the high prevalence and impact on HRQoL highlight the need to adequately assess demoralization and psychological distress in terminal cancer patients and to identify psychological interventions that focus on preventing existential distress and thus improve the quality of life of dying patients and accompany them until the end of life.

**Keywords:** *Psycho-oncology, Demoralization, end-of-life, palliative care, quality of life.*

### 1. Introduction

Demoralization is characterized by feelings of hopelessness and helplessness due to the loss of meaning and purpose in life and implies a persistent inability to cope with a stressful situation (Kissane et al., 2001). In the context of distressing situations or circumstances that affect the patient's integrity, life and well-being, such as a chronic and/or progressive illness, patients may experience a spectrum of clinical manifestations ranging from an initial sense of discouragement to a deeper sense of hopelessness and failure to a strong sense of loss of meaning and purpose (Robinson et al., 2016). From a clinical perspective, demoralization is often dismissed or unrecognized, although it is associated with suicidal ideation and a desire to hasten death, and various therapies have been shown to help reduce it (Robinson et al., 2015; Gan et al., 2021).

Several studies have investigated the prevalence of demoralization in oncology and palliative care, with a recent literature review finding an average prevalence of 35.8% severe demoralization in cancer patients (Gan et al., 2021). The presence of demoralization is associated with the number and type of physical symptoms, and demoralized cancer patients have low levels of quality of life (QoL) (Robinson et al., 2015; Nanni et al., 2018; Gan et al., 2021), although no studies have delved into the relationship between demoralization and QoL in end-of-life cancer patients.

Following our previous work, in which we first examined the relationship between demoralization and QoL in a sample of 170 cancer patients in palliative care with a life expectancy of 4 months or less (Bovero et al., 2023), in the present study we explored this relationship in greater depth in a large sample. Specifically, we examined the independent impact of demoralization on patients' health-related QoL (HRQoL) in a larger sample of terminal cancer patients in palliative care, controlling for other clinical and psychological variables.

## 2. Methods

### 2.1. Participants and procedure

The participants were recruited at the “Città della Salute e della Scienza” hospital and the “V. Valletta” hospice in Turin. Hospitalized patients diagnosed with cancer and meeting the national criteria for access to palliative care were evaluated as potential candidates. Criteria for palliative care were end-stage disease, an unfavourable/poor prognosis or no possible or appropriate curative treatment, a Karnofsky Performance Status (KPS) of 50 or less and an expected life expectancy of 4 months or less. Other inclusion criteria were age over 18 years, ability to give informed consent and complete the test battery, sufficient knowledge of the Italian language and no history of neurological and/or severe psychiatric illness. Participants who met the inclusion criteria were invited to participate in the study and were enrolled after providing written informed consent.

The socio-demographic and clinical data were recorded by the palliative care physicians. The psychologist conducted the psychosocial assessment at the bedside and asked the patients to read and complete the test battery at their own pace and according to their needs.

The sample included in the present study consisted of 372 patients. The study was approved by the institution's ethics committee (protocol number 0034403, procedure number CS2/1178) and was conducted in accordance with the Declaration of Helsinki.

### 2.2. Measures

A test battery containing the Italian versions of validated self-report scales commonly used in the cancer population was used.

The Edmonton Symptom Assessment System (ESAS) was used to assess the presence and intensity of symptoms in palliative care patients on a Likert scale from zero (no symptom) to 10 (worst possible symptom).

The Hospital Anxiety and Depression Scale (HADS) was used to assess psychological distress (depressive and anxiety symptoms) during the last week; the total score ranges from 0 to 42, with higher scores indicating a high level of symptoms.

The Functional Assessment of Cancer Therapy Scale - General Measure (FACT-G) was used to assess HRQoL; the total score ranges from 0 to 100, with higher scores indicating higher HRQoL.

The Functional Assessment of Chronic Illness Therapy - Spiritual Well-Being (FACIT-Sp-12) was used to assess spirituality in the cancer setting; the total score ranges from 0 to 48, with higher scores indicating better spiritual well-being.

The Demoralization Scale - Italian Version (DS-IT) was used to assess demoralization on a Likert scale ranging from 0 (never) to 4 (always). The DS-IT is divided into five subscales: Loss of Meaning and Purpose in Life, Dysphoria, Disheartenment, Helplessness, and Sense of Failure. The total score ranges from 0 to 94, with a cut-off score of  $\geq 37$  and  $\geq 31$  indicating the presence of severe and moderate demoralization, respectively.

### 2.3. Data analysis

The Statistical Package for Social Sciences - 27.0 (IBM SPSS Statistics for Macintosh, Armonk, NY, USA: IBM Corp.) was used to perform the statistical analyses. All variables were normally distributed (all absolute values for skewness and kurtosis were below 3.0 and 8.0, respectively).

Hierarchical multiple regression analysis with stepwise method was performed to assess whether demoralisation was a significant predictor of HRQoL (FACT-G) in end-of-life cancer patients, controlling for other variables. The predictor variables (age, gender, cancer stage, KPS, ESAS symptoms, psychological distress, spiritual well-being and demoralization) were only included in the regression

models if they were significantly correlated with the outcome variable (Pearson and Spearman bivariate correlations) ( $p$ -value < 0.05). Collinearity was assessed using the statistical factors of tolerance and Variance Inflation Factor.

### 3. Results

The terminally ill cancer patients (men: 189 (50.8 %); women: 183 (49.2 %)) had an average age of 67.1 (12.3) years, and most patients were married or in a partnership (226 (60.9 %)) and had a middle (138 (37.1 %)) or high school degree (123 (33.1 %)). The mean KPS score was 40.65 (8.8), and the most common cancers were lung cancer (83 (22.4%)), hepatic-pancreatic cancer (54 (14.6%)) and breast cancer (46 (12.4%)), with 259 (70.8%) of patients having metastatic cancer.

Mean and standard deviations of the physical and psychological symptoms and their correlation with Health-Related Quality of Life were listed in Table 1. Anxiety, lack of well-being, fatigue and depression were the most distressing symptoms in ESAS. The high level of psychological distress symptoms was confirmed by the HADS total score, with 287 (77.2%) patients reporting a score  $\geq 15$ , indicating a clinically relevant level of psychological distress. The FACIT-Sp12 indicated low spirituality, and the FACT-G total score indicated that HRQoL was severely impaired.

The DS-IT data showed high level of demoralization, with "Disheartenment", "Helplessness" and "Sense of failure" being the most affected domains: 180 (48.4%) patients reported a score indicating the presence of severe demoralization, and 51 (13.7%) patients showed moderate demoralization.

Table 1. Data regarding physical and psychological symptoms and their correlation with Health-Related Quality of Life (FACT-G) (N=372).

|                                   | Mean (SD)    | Pearson's <i>r</i> coefficients |
|-----------------------------------|--------------|---------------------------------|
| FACT-G                            | 53.52 (14.7) |                                 |
| KPS                               | 40.65 (8.8)  | .236*                           |
| ESAS_Pain                         | 1.84 (2.7)   | -.181*                          |
| ESAS_Fatigue                      | 4.86 (2.8)   | -.438*                          |
| ESAS_Nausea                       | 1.4 (2.5)    | -.171*                          |
| ESAS_Depression                   | 4.39 (2.6)   | -.627*                          |
| ESAS_Anxiety                      | 5.07 (2.5)   | -.386*                          |
| ESAS_Drowsiness                   | 2.66 (3)     | -.378*                          |
| ESAS_Appetite                     | 2.73 (3)     | -.403*                          |
| ESAS_Lack of Well-Being           | 4.69 (2.7)   | -.556*                          |
| ESAS_Shortness of Breath          | 1.97 (3)     | -.234*                          |
| HADS                              | 19.5 (6.7)   | -.779*                          |
| FACIT-Sp12                        | 23.7 (7.7)   | .586*                           |
| DS-IT                             | 36.09 (14.4) | -.735*                          |
| DS-IT_Loss of meaning and purpose | 5.3 (4.4)    | -.539*                          |
| DS-IT_Dysphoria                   | 6.15 (3.3)   | -.514*                          |
| DS-IT_Disheartenment              | 12.83 (4.2)  | -.716*                          |
| DS-IT_Helplessness                | 6.31 (3.6)   | -.686*                          |
| DS-IT_Sense of failure            | 5.63 (2.3)   | -.537*                          |

Note. \* $p$ -value < .001. FACT-G: Functional Assessment of Cancer Therapy-General scale; ESAS: Edmonton Symptom Assessment System; HADS: Hospital Anxiety and Depression Scale; FACIT-Sp12: Functional Assessment of Chronic Illness Therapy-Spiritual Well-Being Scale; DS-IT: Demoralization Scale-Italian version.

To investigate whether demoralization is a significant predictor of HRQoL (FACT-G) in end-of-life cancer patients, a hierarchical multiple regression analysis was performed. Age, gender and cancer stage did not correlate with FACT-G. The KPS and ESAS scores were entered into the first regression block, the HADS and FACIT-Sp12 score into the second block and the DS-IT subscales scores into the third block. The final model (Model 9 – Table 2) explained 70% of the variance of the FACT-G ( $F(9,362) = 97.9$ ,  $p < 0.001$ ). Psychological distress ( $\beta = -0.401$ ,  $t(362) = -8.7$ ,  $p < 0.001$ ) and the dimensions "Disheartenment" ( $\beta = -0.211$ ,  $t(362) = -4.5$ ,  $p < 0.001$ ) and "Sense of failure" ( $\beta = -0.114$ ,  $t(362) = -3.0$ ,  $p = 0.003$ ) of demoralization were the strongest and statistically significant influencing factors for HRQoL, followed by the "Dysphoria" subscale ( $\beta = -0.07$ ,  $t(362) = -2.1$ ,  $p = 0.034$ ) of the



DS-IT and the “Appetite” ( $\beta = -0.09$ ,  $t(362) = -2.5$ ,  $p=.012$ ), “Lack of Well-Being” ( $\beta = -0.08$ ,  $t(362) = -2.1$ ,  $p=.032$ ), and “Drowsiness” ( $\beta = -0.07$ ,  $t(362) = -2.1$ ,  $p=.035$ ) subscales of the ESAS.

Table 2. Final model of the hierarchical multiple regression with Health-Related Quality of Life (FACT-G) as dependent variable ( $N=372$ ).

| Predictor                | $R^2$ | Adj $R^2$ | $F$     | $F- \Delta R^2$ | $B$    | $SE B$ | $\beta$ | $P$   |
|--------------------------|-------|-----------|---------|-----------------|--------|--------|---------|-------|
| 9 (Constant)             | 0.71  | 0.70      | 97.92** | 4.53*           | 86.368 | 4.463  |         | <.001 |
| ESAS_ Lack of Well-Being |       |           |         |                 | -0.455 | 0.211  | -0.084  | .032  |
| ESAS_ Drowsiness         |       |           |         |                 | -0.348 | 0.164  | -0.070  | .035  |
| KPS                      |       |           |         |                 | 0.056  | 0.050  | 0.034   | .259  |
| ESAS_ Appetite           |       |           |         |                 | -0.428 | 0.169  | -0.088  | .012  |
| HADS                     |       |           |         |                 | -0.888 | 0.102  | -0.402  | <.001 |
| FACIT-Sp12               |       |           |         |                 | 0.094  | 0.082  | 0.049   | .254  |
| DS-IT_Disheartenment     |       |           |         |                 | -0.749 | 0.165  | -0.211  | <.001 |
| DS-IT_Sense of failure   |       |           |         |                 | -0.735 | 0.248  | -0.114  | .003  |
| DS-IT_Dysphoria          |       |           |         |                 | -0.334 | 0.157  | -0.074  | .034  |

Note. \*p-value < .05; \*\*p-value < .001

ESAS: Edmonton Symptom Assessment System; KPS: Karnofsky Performance Status Scale; HADS: Hospital Anxiety and Depression Scale; FACIT-Sp12: Functional Assessment of Chronic Illness Therapy–Spiritual Well-Being Scale; DS-IT: Demoralization Scale-Italian version.

#### 4. Discussion and conclusion

In the present study, we delved into the relationship between demoralization and QoL in a sample of end-of-life cancer patients in palliative care, controlling for other clinical and psychological variables. In a previous work, where we examined this relationship for the first time in a smaller sample of 170 terminally ill cancer patients, we found a high prevalence of severe demoralization, and the data showed that demoralization was also the most important factor influencing patients' HRQoL (Bovero et al., 2023).

The results of the present study indicate that while physical symptoms are adequately managed in palliative care, much remains to be done regarding the management of psychological and emotional distress symptoms. Indeed, not only did patients report higher psychological symptom scores on the ESAS, but the HADS showed that two-thirds of the sample reported clinically significant psychological distress. In addition, the present results confirmed the very high prevalence of demoralization in end-of-life cancer patients, with a cumulative prevalence of 62.1% moderate to severe demoralization, which is consistent with the prevalence recently found in palliative care patients in Hong Kong (64.8%) (Chan et al., 2022). The perception of an uncontrollable future and the inability to cope with the terminal phase of the disease may lead to demoralization symptoms such as discouragement, helplessness and sense of failure, which emerged as the most important aspects of demoralization in our sample.

From a clinical perspective, the high prevalence of psychological and emotional distress in end-of-life cancer patients suggests that these aspects are not always adequately addressed and that there is still much to be done in palliative care in terms of prevention and therapeutic interventions. According to the present findings, psychological therapeutic interventions should address the emotional distress and feelings of discouragement and failure that dying patients experience, leading to feelings of incompetence and diminished self-esteem, by helping patients cope with illness-related losses and worries about the future (Vehling & Philipp, 2018).

Consistently with the few other studies on advanced cancer patients, the present data confirmed that demoralization was associated with poorer QoL in end-of-life cancer patients (Bovero et al., 2023; Robinson et al., 2017; Tang et al., 2020). The regression analysis showed that not only demoralization was associated with patients' HRQoL, but that the demoralization dimensions “Disheartenment” and “Sense of Failure” were the most important predictors of HRQoL, in addition to psychological distress. The fact that HRQoL was mainly predicted by the psychological symptoms and not by the cancer-related variables, and only marginally by the physical symptoms, underlines the need for the health care system to adequately assess psychological distress and demoralization in dying cancer patients.

In summary, the present findings underscore the need for adequate assessment of demoralization in cancer patients at the end of life, both because of its high prevalence and because it independently affects multiple aspects of patients' HRQoL. As the disease progresses, alongside helplessness, poor coping and giving up, a sense of futility may emerge and patients may become hopeless, socially isolated and suffer from feelings of shame and personal failure (Clarke & Kissane, 2002; Robinson et al., 2015). Psychological interventions should focus on preventing existential distress and demoralization triggered by physical discomfort and loss of function, recognizing their existential suffering and supporting the meaning of life in the therapeutic relationship, in order to optimize their QoL (Breitbart et al., 2018).

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## **PARENT TRAINING BASED ON PARENTAL REFLECTIVE FUNCTION ON THE WELL-BEING OF THE FAMILY IN ASD**

**Antonella Cavallaro, Luca Simione, & Alessandro Frolli**  
*Università degli Studi Internazionali di Roma (Italy)*

### **Abstract**

Parents play a crucial role in the development of their children. Literature emphasizes the significance of parent training in the treatment of all neurodevelopmental disorders, but it is particularly crucial in the treatment of Autism Spectrum Disorder. In the last years took place a lot of treatment for Autism that involve directly the parents to work with their children. These studies have shown a high level of integrity in delivering strategies for managing problem behaviors by parents and supporting the development of their child's abilities. Working with parents has shown better levels of generalization, improvement in adaptive skills, and greater satisfaction with the results obtained by the child. Several studies also suggest that parent training reduces stress within the family. Different approaches used have been found to be effective. We want to investigate the effects of different types of parent training on the well-being of families and on the adaptive skills of the children. We divided a sample of 200 couple of parents into three groups. One group follows a parent training program based on applied behavior analysis, another group follows a parent training program based on behavioral strategies and the support of parental reflex functioning. The third group does not participate in parent training. We used the Child Behavior Checklist (CBCL) to assess the level of problem behavior in children, the Parenting Stress Index (PSI) to measure the stress index of parents, and the Vineland Adaptive Behavior Scale to assess children's daily life skills. Our results confirm that parent training, regardless of the approach used, can decrease problem behaviour and improve the adaptive behavior of children and the well-being of parents by reducing stress levels. However, parent training programs that focus on supporting the educational role of parents and their emotional well-being result in a greater reduction in family stress levels and, simultaneously, an decrease in problem behavior.

**Keywords:** *Parent training, Autism Spectrum Disorder, Parental Stress Index.*

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### **1. Introduction**

Parents play a crucial role in all aspects of their children's development. They contribute to the acquisition of language skills, foster cognitive development, and ensure emotional regulation, which forms the foundation for emotional development (Barone, 2007). In recent years, most of the intervention on children showed the inclusion of a programme of parent training to their parents (Wyatt Kaminski et al., 2008). It showed an increase in terms of the objectives aimed - in parent-child communication, acquisition of new skills for children and the decrease of problem behaviour (Ho & Lin, 2020; Gross et al., 1995; Kazdin & Wassell, 2000). Indeed, the results of parent training appear to maintain positive effects over time (Long et al., 1994; Lundahl et al., 2006). In the treatment of Autistic Spectrum Disorder, one of the best evidenced parent trainings is behavioural (McMahon, 1999; Shaffer et al., 2001; Schaefer & Andzik, 2021). As synthesized by Shaffer et al. (2001) the core elements of a behavioral parent training include: (a) focusing more on parents than the child; (b) moving from a preoccupation with antisocial behavior to an emphasis on prosocial behavior; (c) teaching parents to identify, define, and record child behavior; (d) instructing parents in social learning principles (e.g., reinforcement of prosocial behavior, withdrawal of attention for misbehavior through the use of ignoring or time-out); (e) teaching new parenting skills via didactic instruction, modeling, role playing, practicing with the child in the clinic and home; (f) discussing ways to maximize generalization of skills from the clinic to the home; and when necessary, (g) addressing parental (e.g., depressive symptoms), family (e.g., marital conflict), and community (e.g., neighborhood violence) risks which may interfere with acquisition or maintenance of new parenting skills and adaptive child behavior. Furthermore, the effectiveness of parent training is also influenced by factors that are not dependent on the child's functioning, particularly socio-economic status

and maternal mental health (Reyno & McGrath, 2006). Some studies, such as Frolli et al. (2023), emphasise the importance of supporting not only the behavioural competencies but also the reflective function of parents. Parental reflective functioning (PRF), also known as parental mentalizing, refers to a parent's ability to understand their child's internal mental states, such as feelings, wishes, and desires, and to reflect on their own internal mental experiences and how they are shaped and changed by interactions with their child. The assessment of parental fitness also includes the criterion of reflexivity, as defined by Fonagy et al. (1998). This refers to the psychological processes that underlie the ability to mentalize, which is also known as the capacity for abstraction and reflective awareness. This plays a central role in cognitive and developmental psychology. The study aimed to investigate the effects of different types of parent training on family well-being and children's adaptive skills. Specifically, we compared a behavioral parent training program based on applied behavior analysis with a program based on behavioral strategies and support for parental reflex functioning.

## 2. Methods

### 2.1. Participants

In this study we initially considered a sample of 236 couples of parents of ASD children who were following a behavioral treatment based on applied behavior analysis in clinics and rehabilitation centers in Campania region. Participants were selected according to the main inclusion criteria: 1) have a child who was diagnosed with ASD, according to the criteria of the DSM-IV-TR; 2) the age of the child (from 30 months to 8 years old); 3) child followed a program treatment based on Applied Behavior Analysis. Exclusion criteria were: 1) non accordance with the weekly meeting of parent training or the non compliance with a program scheduling weekly. From this sample we excluded 36 couples of parents for their poor adherence with parent training protocol scheduling.

The total sample therefore includes 200 couples of parent. A total of three group were created according to the type of parent training disposed by clinics. Group 1 is composed by 75 couples of parents that followed weekly a parent training based on Applied Behavior Analysis Procedures. Group 2 is composed by 70 couples of parents that followed a parent training program that included behavioral strategies and parental functions support work. Group 3 is composed by parents who didn't followed any kind of parent training support.

### 2.2. Instruments

The protocol used is composed of the following tests: PSI/SF (Parenting Stress Index-Short Form authored by Abidin (Abidin et al., 2006), CBCL (Child Behaviour CheckList authored by Achenbach & Rescorla, 2000) and Vineland Adaptive Behavior Scale II (Sparrow et al., 2005).

*PSI-SF (Parenting Stress Index-Short Form)*. It is a self-assessment questionnaire that measures the level of stress in the parent-child system, consisting of two domains: child domain and parent domain. The child's domain measures the sources of parental stress caused by child characteristics, while the Parent's Domain assesses the sources of stress related to the parental role.

*Child Behavior CheckList (CBCL / 1½-5 e 6-18)*. It is a self-administered questionnaire by parents for pre-school children that provides a profile of the child's psychopathological behavior. It is composed of three syndromic scales: internalizing, externalizing, and total problem scales. The internalizing scales include Emotionally reactive, Anxious / Depressed, Somatic Complaints, and Withdrawn. Outsourcing problems evaluate Attention Problems and Aggressive Behavior. Besides, this scale also allows us to monitor problems related to the sleep-wake rhythm (Sleep Problems) Child Behaviour CheckList authored by Achenbach & Rescorla, 2000).

*The Vineland Adaptive Behaviour Scales (VABS II)* is an interview used to measure the level of adaptation of an individual's behaviour. It consists of three main scales: Communication Scale, Daily Living Skills Scale and Socialisation Scales. For children under the age of 8 and for the elderly over the age of 56, the Motor Skills Scale is also included (Sparrow et al., 2005).

### 2.3. Procedures

The level of parental stress was investigated by the administration of the PSI-SF. The presence of problem behavior and the level of adaptive skills of the child were administered respectively with the somministrazione of CBCL and VABS II to the parents. We conduct first administration of the protocol before started the parent training, to measure the levels of stress and of problem behavior of the children, to ensure no significative differences between groups. PT began after the pre-tests for all participants and lasted six months. It took place four times a month, totaling 24 meetings. The total sample of 200 families, divided into three natural groups as described below, were subjected to a specific type of PT. In particular, Group 1 followed a PT of behavioral approach that was inspired by the Applied Behavior

Analysis (ABA). Group 2 underwent a PT intervention aimed at restructuring parental reflective functions, which were inspired by pre-mentalization and emotional mirroring (Fonagy et al., 1998) and they acquired also behavioral strategies to intervene on problem behavior of their children and to support adaptive behavior. Group 3 didn't participate to any kind of parent training program. At the end of the treatment, questionnaires were re-administered to the parents in order to identify the differences on the children's behavior (CBCL), parental stress and adaptive behavior (PSI / SF and VABS II).

### 3. Results

Data analysis was performed using SPSS 26.0 statistical survey software. An analysis of variance (ANOVA) was used to evaluate significant differences between the means of the three groups. Significance was accepted at the 5% level ( $\alpha < 0.05$ ). No differences were found between the groups on the variables Stress Index (PSI) and Problem Behavior (CBCL\_I; CBCL\_E) before the training started. Significant differences were found in the variable of adaptive behavior in daily skills between group 1 and group 2, as well as between group 1 and group 3. The analysis of the VABS score after training was not conducted due to these differences. Significant differences were also found in the Parental Stress Index (PSI) and in Externalizing Problems (CBCL\_E). No significant differences were found in the Interanilizing score or the total score of CBCL. Tukey Post Hoc was used to analyse the differences between groups. For group 1, we compared the scores that resulted from the administration of the PSI/SF test after the PT surgery with the scores of group 3, and significant results emerged in the Total Score (PSI\_tot) [ $t = -5.162$ ;  $p < 0.05$ ] after treatment. The study compared the PSI\_tot scores of group 2 with those of group 1 and group 3, revealing significant differences [ $t = -3.475$ ;  $p < 0.05$  and  $t = -8.648$ ;  $p < 0.05$ , respectively]. These results provide evidence of the effectiveness of parent training in reducing stress levels among parents, particularly in group 2 (refer to Table 1).

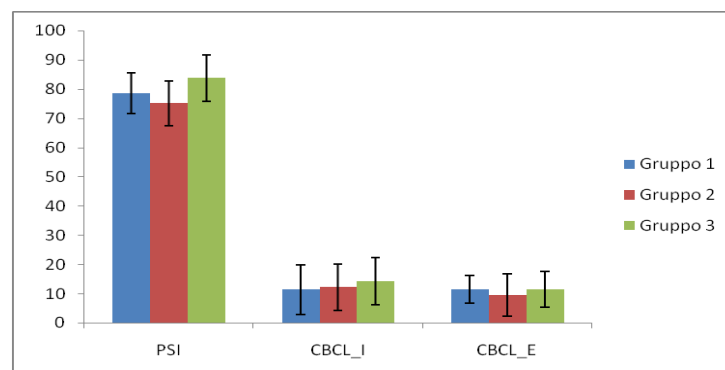
Table 1. Post Hoc Results.

|                |         | PSI_SF          | CBCL_I         | CBCL_E          |
|----------------|---------|-----------------|----------------|-----------------|
| <b>Group 1</b> | Group 2 | 3,475<br>,011*  | 1,619<br>,890  | 2,009<br>0,107  |
|                | Group 3 | -5,162<br>,000* | -4,921<br>,391 | -2,915<br>,017* |
| <b>Group 2</b> | Group 1 | -3,475<br>,011* | -1,619<br>,890 | -2,009<br>,107  |
|                | Group 3 | -8,638<br>,000* | -6,540<br>,201 | -4,923<br>,000* |
| <b>Group 3</b> | Group 1 | 5,162<br>,000*  | 4,921<br>,391  | 2,915<br>,017*  |
|                | Group 2 | 8,638<br>,000*  | 6,540<br>,201  | 4,923<br>,000*  |

\* Significance was accepted at the 5% level ( $\alpha < 0.05$ ).

Finally, we compared the CBCL scores between the groups and found significant differences in the CBCL\_E score on the Externalizing Index between groups 1 and 2 with group 3, but no differences between groups 1 and 2 (see Table 1). No significant differences emerged on the CBCL\_I index, which measures internalizing problem behavior in children.

Figure 1.



\* Means and Standard Deviations with significative differences to tests

#### 4. Conclusions

The results suggest that the parent training intervention effectively helped parents modify their children's dysfunctional behaviours and promote the development of functional ones. The differences between the two groups of parent training are primarily reflected in the parental stress index. The parent training approach has been shown to significantly reduce parental stress. As parents gain confidence in their ability to manage their child's behaviour effectively, overall stress levels within the family environment decrease. This reduction in stress benefits not only parental well-being but also creates a more nurturing and supportive atmosphere for the entire family. The group that integrated reflective parenting strategies with behavioral approaches likely experienced superior stress reduction due to the comprehensive nature of the intervention. This approach targeted specific behaviours and enhanced coping mechanisms. It also improved the parent-child relationship and potentially yielded lasting benefits for parental well-being (Eyberg & Robinson, 1982; Adams, 2001; Pennefather et al., 2018).

Furthermore, both groups that participated in parent training exhibited superior outcomes in reducing their children's externalizing problem behaviors compared to the group that did not undergo any form of parent training. This improvement occurred even though children in all three groups were concurrently receiving Applied Behavior Analysis (ABA) methodology-based behavioral therapy in various settings, including home and school. These data suggest that the Parent Training (PT) intervention yields significant results, particularly in reducing externalizing behavioral symptoms (see Gershly & Gray, 2020; Frolli et al., 2023).

#### 5. Discussions

Parental Training (PT) is a psychological intervention aimed at improving parenting skills, including both communication and behavioural management strategies. Different theoretical approaches to PT may prioritize specific aspects, reinforcing various skills and abilities (Frolli et al., 2023). The study findings suggest that two types of parent training are effective in improving parental wellness by reducing stress and decreasing externalizing problem behaviour in children. These results align with existing literature that supports parent training as an evidence-based intervention for children with disruptive behaviour, both typical and atypical (Bearss et al., 2015). Various programs have emerged as effective for ASD, particularly parent training based on applied behavior analysis. This is considered a best practice in reducing problem behavior due to its ability to be administered in various service settings (Van Camp et al., 2008). However, our results showed that a parent training programme that focuses on both the reflective function of the parent and improving their mentalization processes, in addition to behavioural strategies, is more effective in reducing frustration and stress in parents and improving their sense of efficacy. The reflective function of a parent pertains to their ability to comprehend and interpret their child's thoughts, feelings, and behaviours, and to consider how these internal mental states influence their own and their child's actions. It involves the capacity to mentally adopt the perspective of the child and understand the underlying emotional and cognitive processes. A parent with a well-developed reflective function is better equipped to respond sensitively to their child's needs, fostering a secure attachment and promoting healthy socio-emotional development. This reflective capacity is crucial for effective parenting and building a strong parent-child relationship (Fonagy et al., 1998). We suggest integrating sessions focused on parenting and their reflexive function into the behavioural programme for parent training. By becoming more proficient in managing their children's behaviour and fostering positive development, parents can improve the overall family environment. This can lead to increased awareness of themselves as individuals and as parents, making them feel more competent and confident in their parenting abilities. This, in turn, can contribute to better parent-child relationships and improved child outcomes over the long term. This intervention's success is rooted in its ability to empower parents, actively involve them in the change process, reduce parental stress, and set the stage for positive, long-term family outcomes.

Several limitations of the study have been identified. Firstly, the study used a non-random sample, as participants were recruited from a clinic where children were receiving ABA treatment and their parents were receiving different types of training. To better isolate independent variables, a controlled randomized group sampling is required. One limitation of the study is the lack of data analysis on the different scales of PSI. This analysis would have identified which variable, among Parental Distress, Parent-Child Dysfunctional Interaction, and Difficult Child is most impacted by parent training.

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# PSYCHOLOGICAL INTERVENTIONS FOR MESOTHELIOMA PATIENTS AND THEIR CAREGIVERS

**Isabella Giulia Franzoi, Maria Domenica Sauta, Francesca Barbagli,  
Alessandra De Luca, & Antonella Granieri**  
*Department of Psychology, University of Turin (Italy)*

## Abstract

**Objective:** Malignant Mesothelioma (MM) has a striking impact on the somatopsychic balance of patients and their families, including physical, psychological, and interpersonal problems. The aim of this systematic literature review was to investigate what psychological interventions are offered to patients with MM and their caregivers worldwide. **Methods:** The review was conducted using the Preferred Reporting Items for Systematic Reviews and Meta-Analyses. The literature search led to the identification of 12 articles. Results were categorized into five categories. 1. Individual psychological support, 2. Group psychological support, 3. Cognitive-behavioral group psychotherapy, 4. Brief psychoanalytic groups, 5. Multifamily group. **Results:** The interventions differed in terms of form, duration and resources used. Most of them were group-based and psychoanalytically oriented, although individual and cognitive-behavioral interventions were also described. Despite the differences, the interventions appeared to be fundamental in facilitating the processing of mental pain and anger related to the diagnosis. **Conclusion:** Our study has shown that there are still few psychological interventions available for MM patients and their caregivers. The somatopsychic consequences of MM in patients and caregivers should encourage institutions and healthcare professionals to develop assessment and intervention models that address the different dimensions of their suffering and promote their residual vitality.

**Keywords:** *Malignant mesothelioma, cancer, caregivers, psychotherapy, interventions.*

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## 1. Introduction

Furuya et al. (2018) emphasized the magnitude of the phenomenon of asbestos-related diseases and referred to an estimated 255,000 deaths per year related to asbestos exposure, of which 233,000 were due to occupational exposure. Asbestos exposure in the workplace is currently considered a leading cause of work-related deaths, with more than half of deaths due to oncologic diseases, including Malignant Mesothelioma (MM) (Ulla-Mari, 2023; Wilk & Krówczyńska, 2021). MM is a rare cancer, accounting for only 0.17% of estimated cancer cases in 2020 (Ferlay et al., 2021). The survival rate of patients with MM is significantly lower than for other cancers (median between 8 and 12 months after diagnosis) (Huang et al., 2023; Marinaccio et al., 2018). In addition, it has a remarkably long latency period, which can typically be 30 to 40 years between the first exposure to asbestos and the onset of the disease (Alpert et al., 2020). Therefore, the diagnosis is usually made at an advanced age (with an average age of around 70 years, with no differences between genders) (INAIL, 2021).

In terms of the experience of MM specifically, the poor prognosis, reduced effectiveness of treatments, occupational etiology, poor quality of life for those in the latter stages of the disease, and advanced age at diagnosis exacerbate the psychological impact and make the experiences of individuals and family members even more problematic (Bonafede et al., 2020; Demirjian et al., 2024; Nagamatsu et al., 2022; Warby et al., 2019). Both patients and their families may experience somatic and psychosomatic symptoms, impaired quality of life, anxiety, depression, fear, and mistrust as well as post-traumatic symptoms (Bonafede et al., 2022; Demirjian et al., 2024; Gonzalez-Ling et al., 2023; Nagamatsu et al., 2022). We strongly believe that an interdisciplinary approach to the treatment of MM is fundamental to restore and promote in both patients and caregivers the ability to tolerate, symbolize, mentalize and narrate the traumatic effects of the disease, but also the vital aspects that live on in them and in their relationships (Granieri et al., 2018). For these reasons, the provision of specialized clinical-psychological interventions for MM patients and their families would be of paramount importance and an important objective of environmental health policies, especially in the areas most



affected by asbestos contamination and where the population is therefore most frequently affected by the diagnosis of MM.

This paper therefore presents the results of a systematic literature review aimed at investigating the provision of psychological and psychotherapeutic interventions for MM patients and their caregivers worldwide.

## 2. Design

This systematic literature review was conducted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) Guidelines (Page, et al., 2021).

The studies were identified by searching the following electronic databases: Scopus, Web of Science, PubMed, ProQuest Psychology Journals, PsycINFO, and PsycARTICLES.

We used a combination of the following keywords: (psych\*) AND (intervention\* OR treatment\* OR help OR support OR assistance OR “mental support” OR “psychological service” OR “psychological services” OR “clinical intervention” OR “clinical interventions” OR psychotherapy OR “group therapy” OR “group intervention” OR “group interventions” OR “emotional support” OR counseling OR counselling) AND (mesothelioma OR asbestos).

The articles were retrieved in May 2023, and a new search was conducted on November 15, 2023 to update the results.

Data analysis was performed using a standardized data extraction form that included: (a) general study details (e.g., authors, title, publication source, year of publication); (b) study type; (c) sample characteristics (e.g., age, gender, country, patients vs. caregivers); (d) intervention characteristics (e.g., setting, duration, etc.); and (e) results.

## 3. Methods

In the electronic database search, 6,327 articles were found, while 3 works were identified manually. After duplicates had been removed, 5,744 articles remained. Of these, 5,689 articles were excluded on the basis of title and abstract and 43 articles on the basis of full text evaluation (Figure 1).

The remaining 12 articles were subjected to data extraction and qualitative analysis. Table 1S summarizes the information on the studies. Results were classified according to the type of intervention offered to patients with MM and their caregivers: 1. individual psychological support, 2. group psychological support, 3. cognitive-behavioral group psychotherapy, 4. brief psychoanalytic groups, and 5. multifamily group.

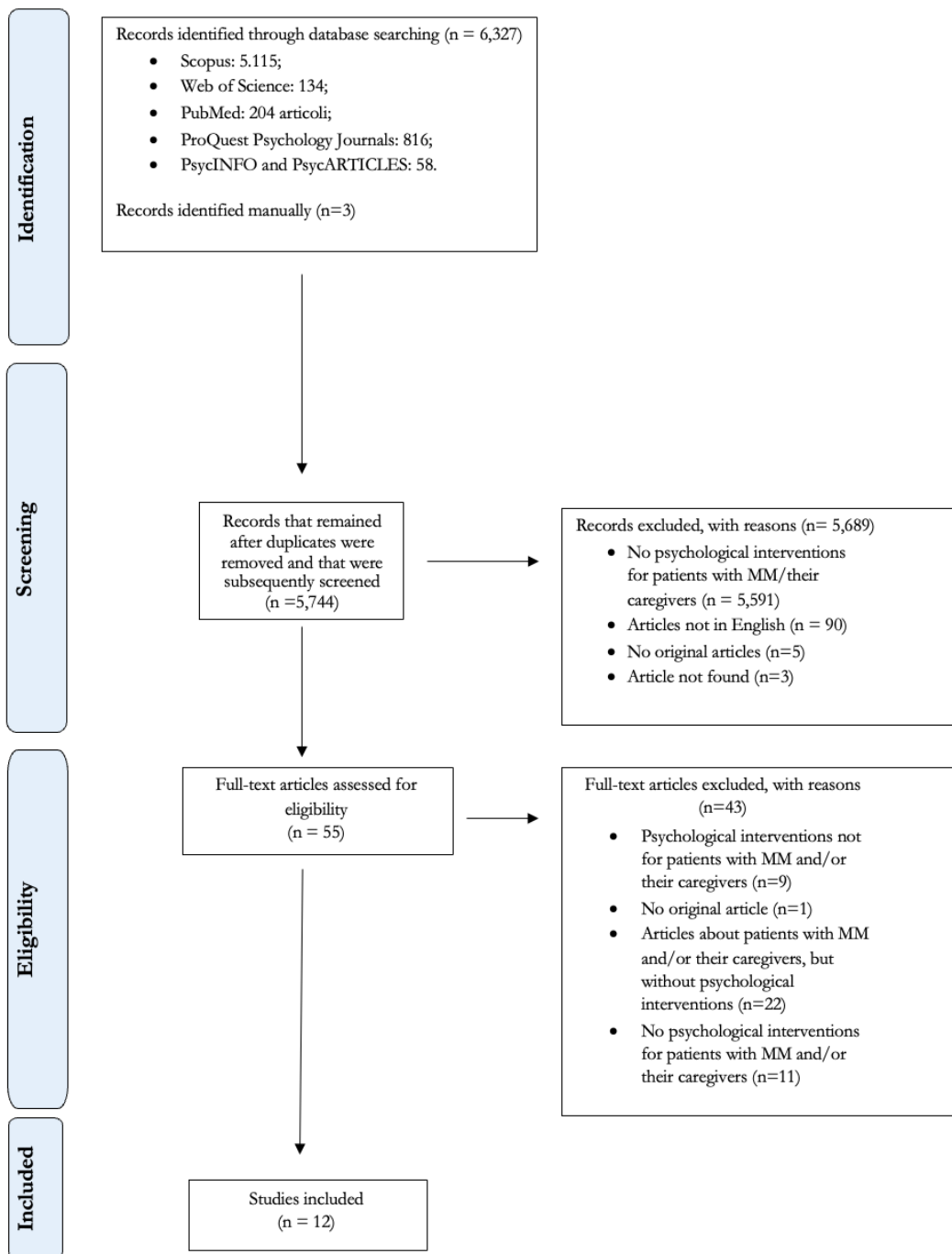
## 4. Discussion

While previous research on the impact of MM on patients and their caregivers (Gonzales-Ling et al., 2023; Nagamatzu et al., 2022;) shows the importance of integrating psychological interventions into the management of patients and caregivers, as they allow them to work on the somatopsychic balance that can be undermined by the oncologic disease and thus offer an improvement in residual quality of life, our systematic literature review has shown that such interventions are still very rare. We are of course aware that the results of our systematic review are necessarily incomplete, as what is reported at the clinical level is not necessarily published in the form of scientific papers, particularly in English. The lack of studies on psychological interventions for MM patients and their caregivers is a major concern for public health and patient advocacy, as the problem of asbestos-related diseases is still relevant today and can still affect many individuals and families around the world. Although previous research emphasizes that the care experience of cancer patients in general (Karimi Moghaddam et al., 2023; Park et al., 2022) and MM patients in particular (Bonafede et al., 2022; Bonafede et al., 2020; Warby et al., 2019) can also affect the mental health of family members and therefore it is important to also provide interventions for caregivers (Demirjian et al., 2024; Yang et al., 2021), but most of the interventions described in our systematic review did not include caregivers. The results of our systematic literature review confirm that the integration of clinical psychology in oncology is fundamental for both patients and caregivers, as it can activate the egoic resources of each individual, i.e. the ability to tolerate one's own emotions, the traumatic impact of which often lead to dissociation and denial. Promoting the processing, symbolization and signification of emotions related to the impact of the diagnosis allows the recovery of residual aspects of life and health of a body-mind perceived by itself and its environment as sick and dying (Franzoi et al., 2023; Schore, 2021). This also enables greater awareness of one's own clinical condition, which leads to the possibility of more appropriate management of the disease and reducing inappropriate use of local health services (Andermann, 2016; Molina-Mula et al., 2020).

## 5. Conclusions

Our systematic literature review emphasizes the need and opportunity to integrate psychological interventions into the care of MM patients and their caregivers, and that this goal is currently largely unmet. Efforts still need to be made at the public health level to move towards multidisciplinary care protocols that adequately address the interrelationships between the physical, psychological, and environmental components of the illness experience (Rosen et al., 2018). Integrated multidisciplinary interventions that point in this direction enable the construction of a space in which it is possible for patients and caregivers to deal with the illness and its somatopsychic impact. Through the collaboration of the entire care team, it is thus possible to promote the possibility of not feeling alone and helpless in the face of illness and possibly death, to support and strengthen patients' responsibility for their own health, to increase adherence to treatment and to improve the residual quality of life.

Figure 1. Preferred reporting items for systematic reviews illustrates the study selection process.



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## POST-TRAUMATIC GROWTH EFFECTS IN SEVERE COVID-19 SURVIVORS: A QUALITATIVE STUDY

**Gabriela Aissa Suciu, & Adriana Baban**

*Department of Psychology, Babes-Bolyai University, Cluj-Napoca (Romania)*

### Abstract

The COVID-19 pandemic has led to concerning mortality rates worldwide and long-term health risks for the survivors. COVID-19 patients have endured physical and psychological stress during infection, hospitalization, and recovery. Recent research indicates that some discharged patients exhibit Post-Traumatic Growth (PTG) demonstrating the possibility to flourish despite adversity. Although studies have explored psychiatric outcomes among COVID-19 survivors, few have examined PTG specifically. This research aims to explore former patients' experiences within the post-acute period, in terms of positive long-term post-COVID effects and the role of coping resources in the recovery period. Semi-structured interviews were conducted from November 2022 to April 2023, involving 21 participants (57% female), mean age 64, residing in Romania. All participants were hospitalized for severe COVID-19, from 5 to 32 days. Thematic analysis identified four major themes: (1) Coping strategies - including reframing the experience positively, break the recovery path into manageable actions, self-care, support seeking, and acceptance; (2) Inner Strengths - optimism, actively living life, determination, independence, and experience with hardship helped many participants endure this difficult illness; (3) Changed Life Perspective - including increased compassion, helping others more, and valuing close relationships; (4) Gratitude - the awareness of personal wellbeing's value prompted gratitude and hope for many survivors. Some participants described making concerted efforts to appreciate each new day, others increased prosocial and altruistic behaviors, while others conveyed gratitude to God following the trauma of COVID-19. The findings underscore the factors that contributed to participants' PTG and provide unique insights into the pathways to thriving utilized by former COVID-19 patients. This research contributes to a better understanding of multifaceted post-acute experiences of hospitalized survivors, highlighting avenues through which medical adversity catalyzed enduring positive changes across cognitive, emotional, behavioral, and relational domains.

**Keywords:** *Post-Traumatic Growth, COVID-19 survivors, positive changes, hospitalization, pandemic.*

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### 1. Introduction

The COVID-19 pandemic has led to high mortality rates and concerning long-term health risks worldwide (World Health Organization, 2024). Former COVID-19 patients have endured physical and psychological stress during infection, hospitalization, and recovery (Del Rio et al., 2020; Higgins et al., 2021; Pan et al., 2021). The pandemic presented challenges in terms of uncertain health conditions, unreliable and confusing information, feelings of helplessness and fear, difficulties in coping, and a strong desire to return to normality (Alkhamees et al., 2020; Raihan, 2021; Suciu & Baban, 2024; Veazie et al., 2022). Despite all this, some discharged COVID-19 patients managed to break through and achieve post-traumatic growth (PTG), showing a tendency to recover from the negative experience (Hyun et al., 2021).

Although studies have explored psychiatric outcomes among COVID-19 survivors, such as affective disorders among COVID-19 survivors (Raihan, 2021; Veazie et al., 2022), few have examined PTG specifically, while using quantitative measures (Landi et al., 2022; Li & Hu, 2022). Recent research indicates that some discharged patients exhibit growth (Qie & Onn, 2023; Hyun et al., 2021), demonstrating the possibility to thrive despite adversity, still, limited knowledge exists regarding the PTG experience after acute illness.

While quantitative data highlights the effects of COVID-19, qualitative methodologies are essential for a comprehensive exploration of survivors' experiences. This research will provide unique insights into positive change process after trauma among COVID-19 survivors, while identifying potential targets for promoting PTG in patient populations facing significant health-related trauma.

Understanding positive psychological outcomes post-hospitalization can guide recovery-oriented interventions for survivors.

The aim of the present research is to explore former severe COVID-19 patients' experiences in the post-acute period, in terms of positive long-term effects, the role of personal traits and coping resources during recovery. Recognizing these potential influencers can guide more effective psychological intervention strategies following public health disasters.

## 2. Design and methods

### 2.1. Study design

To address the research aims we conducted a qualitative study using semi-structured one-on-one telephone interview. We included participant who had been (a) hospitalized for severe COVID-19, and who were (b) adults (+18 years).

Participants were recruited through advertisements on social media, snowball sampling, and referrals from physicians. A purposive sample of former Romanian COVID-19 patients (N = 21) was recruited. To minimize risk of bias, we included participants from different regions and hospitals.

### 2.2. Data collection & analysis

A semi-structured interview guide was used to explore participants' perspectives on the COVID-19 experience, covering the period before, during, and after the illness. The interview guide encompassed queries that explored illness experience, perceptions of the COVID-19 illness, difficulties, coping strategies, personal features, and positive changes. Following each interview, participants were invited to share additional reflections through a final open-ended question. Interviews were conducted from November 2022 to April 2023 with an average duration of 40 minutes. Interviews were audio recorded and transcribed verbatim. We used an inductive approach for the thematic analysis (Braun and Clarke, 2022).

## 3. Results

Interviews were conducted with 21 participants, with a mean age of 64, all residing in Romania (see Table 1). The medium stay in hospital was 17 days, with 24% of participants having been hospitalized in an Intensive Care Unit. At the time of the interviews, all were discharged.

Table 1. Characteristics of study participants.

| Category                    | N  | Mean (SD) or %   |
|-----------------------------|----|------------------|
| <b>Gender (%)</b>           |    |                  |
| Male                        | 9  | 42.9             |
| Female                      | 12 | 57.1             |
| Other                       | 0  | 0                |
| <b>Age</b>                  |    |                  |
| Mean age                    | 21 | 64.48 (SD=12.85) |
| <b>Marital Status (%)</b>   |    |                  |
| Single                      | 2  | 9.6              |
| Married/living with partner | 13 | 61.9             |
| Divorced                    | 1  | 4.7              |
| Widow                       | 5  | 23.8             |
| <b>Education (%)</b>        |    |                  |
| Less than Highschool        | 5  | 23.8             |
| Highschool                  | 10 | 47.7             |
| Higher Education            | 6  | 28.5             |

Four main themes were identified from the qualitative analysis: (1) Coping strategies; (2) Inner Strengths; (3) Changed Life Perspective; (4) Gratitude.

### 3.1. Coping strategies

The participants used a range of coping strategies to deal with the short, medium, and long-term effects of COVID-19, and they managed the various challenges of recovering from this potentially life-threatening illness, post-COVID challenges and further grow from it.

Appraisal-focused coping strategies were evident for some of the participants. Some used logical analysis when faced with the symptoms onset and then when it worsened, breaking the recovery process into smaller, more manageable gradual actions to rebuild functioning, such as walking to the window, and

over time walking longer distances outside. Some participants sought to reframe the experience in a positive light, focusing on being grateful for still breathing and surviving rather than lingering fatigue or weakness, and using the experience to further cope with difficulties. As some participants stated: "Nobody's life is perfect. You can make it good, or you can make it bad. It depends on you whether you make it good or make it bad. It's up to what you do." (P.20) "Many times, when I have tougher days at work or in general, I think about my experience with Covid, and I tell myself - Look, it could have been worse, and that gives me the energy to keep going." (P.4)

Many participants engaged in problem-focused strategies like seeking information from doctors or other former patients, about COVID-19 symptoms and recovery actions. Self-care activities like improving diet, exercising within limits, and seeking medical care for persisting symptoms were also utilized. Participants identified alternative rewards to provide a sense of satisfaction despite ongoing limitations. Some focused on achievable tasks like getting dressed or washing a few dishes and emphasized the importance of not dwelling on limitations but finding modified ways to keep living life through adapted activities. Building knowledge, taking practical incremental steps, self-care, and finding other achievable activities helped participants in making tangible improvements during the difficult and often slow recovery process. As one participant described: "What helped me was to go see the doctor. It's good to stay at home for two or three days, and take some cold medicine, but after that, if you see that it's still the same or getting worse, you need to seek out for medical advice otherwise you won't get better." (P.21)

Participants also used emotion-focused coping strategies such as maintaining hope that they would eventually fully recover, or talking to family members, friends, or other survivors about difficult feelings such as fear or sadness. Support and connection from family were emphasized, whether in the form of daily phone calls, having meals brought, or help with chores after discharge. As one participant described: "I believe that family is an important factor to have by your side in challenging situations, communication within the family has helped me primarily, everyone being attentive, including siblings."(P.3)

### **3.2. Inner strengths**

Participants revealed a range of inner strengths and personal resources enabling them to confront the challenges posed by COVID-19 in a constructive manner. Optimism was frequently mentioned, as many described themselves as naturally optimistic people who believed they would recover even during difficult points. This positive attitude motivated health behaviors during illness and recovery, provided motivation to keep fighting. As some participants described: "I am quite spirited, yet also quite well-behaved, and obedient when I'm unwell. I do as I'm told and follow what I believe is right. I've always fought in life, not only with the virus." (P.20) "The character makes the difference, I think it's your own state of being, your character as a person who helps you to overcome or not."(P.3) "I am the most optimistic person you will ever see." (P.4)

A heightened sense of actively living life was evident for some of the participants. Constant busyness reflected an aversion to idleness and a preference for purposeful existence. They perceived the illness as something requiring work to actively regain normalcy. "I am used to be physically active daily. After 15 days in hospital, I couldn't wait to go out and do some activity, so I did all that was in my power just to get well and go home." (P.4)

Some demonstrated profound trust in their ability to handle unexpected challenges. Characterized by perseverance, conscientiousness, and determination, they insisted on completing tasks despite difficulties, working diligently to accomplish goals of getting a little bit better daily, focusing on themselves, leaving in those moments the existence of the loved ones on a second place. Some individuals also described drawing strength from their past life experiences surviving adversity, from wars to serious surgeries, revealing a high level of confidence. Self-reliance and independence were important for some participants in caring for themselves. As one participant describes: "I believe that the old life experiences have helped me. I've been through a lot of life-and-death experiences. If you have hope, you take them as life offers them to you. Dangers? I've been close to them, so I'm not scared of death. I've always had hope that I'll get better, that I won't die. So, I've treated all life experiences in the same way." (P.12)

Overall, optimism, actively living life, determination, independence, and experience with hardship helped many participants endure this difficult illness.

### **3.3. Changed life perspective**

For many participants, confronting the possibility of mortality during severe COVID-19 sparked a reconsideration of one's way of looking at the relationships, with a sense of moral purpose and motivation to extend altruism, empathy, and greater compassion, a greater sense of care and helping behaviors, and a sense of closeness with others. While struggling with adversity, their ability to understand and shoulder the burden of others became amplified. This moral growth was often translated

into action. As some participants stated: "I have learned that people need more attention. And if there was something I could do to make it better, I must make it. I started to think that we can die so easily, and it's important for something to remain after us." (P.20) "We have a 40-years old lady upstairs on the first floor, she has no one, and she broke her ankle. We brought her food cooked from our home, and shopping, without asking her any money, for weeks. This experience made me try to become somewhat better." (P.17)

The same confrontation proved transformative also for some of the closest survivors' relationships. The fragility of existence urged several participants towards solidifying bonds with loved ones and disengaging from other ones. As one participant described: "I've learned to appreciate life more, cherish my loved ones, and cultivate greater tolerance. I've always been the type to lend a helping hand, and that hasn't changed, but I've become more discerning about the people I choose to help. I now navigate my life with a more pragmatic approach and with the focus on the loved ones." (P.3)

### 3.4. Gratitude

The COVID-19 experience markedly heightened awareness of personal wellbeing's value and prompted gratitude and hope for many survivors. Their awareness of personal health following illness, led to greater gratitude and appreciation for life and health. A tendency to try to greet each morning with a conscious effort to be more present and thankful, appreciate each day, and appreciate the health status was noticed. As one participant described: "In tough times, you truly form some ideas about life. Priority is family, because that's it, and health. About life, it's really like we often read - Live today as if it were the last, seize the moment. At a young age, you don't give it much thought, but as you grow older, you start to appreciate and believe that days should be lived like that, one by one." (P.1)

Survivors' ongoing health appreciation and commitment was evident through continuously adapting to post-illness limitations and preventative attitudes. They emphasized regular check-ups and preventive measures. As one survivor stated, they had never before taken their health so seriously, diligently seeing doctors and caring for their wellbeing. As one participant described: "I was engaging in health check-ups even before, but now going through what I went through, if something doesn't feel right, I take action immediately to seek a doctor." (P.21)

A renewed sense of faith surfaced in the narratives of some participants. As they attributed meaning to their experiences, survivors conveyed gratitude to God for their health, for overcoming the illness, for their loved ones, or for the doctor healing them. Faith and prayer fostered trust, provided encouragement, and instilled a positive belief in favorable outcomes.

## 4. Discussion and conclusions

This research contributes to a better understanding of the experience of COVID-19, its positive effects, and strategies for adjusting with the new life and health status while thriving after trauma. Thematic analysis has shown the role of coping strategies and inner strengths, while highlighting the positive changes that emerged from the experience.

The COVID-19 illness represented a highly stressful and traumatic event for survivors. Coping with physical, mental, and emotional effects also caused significant difficulties. The use of diverse coping strategies, along with inner strengths like optimism, actively living life, strengths from past experiences, allowed participants to adjust to the trauma of COVID-19. Inner resources such as determination and independence, or trust in their personal ability to handle difficulties facilitated perseverance in health-related behaviors. Appraisal, problem, and emotion-focused coping aided practical improvement and emotional processing. These coping strategies and personal strengths enabled survivors to confront the trauma in a constructive manner. Result in line with previous research where the findings indicated that following a stressor, adaptive coping strategies and inner strengths contribute to PTG (Na et al., 2021; Qie & Onn, 2023; Yan et al., 2021). Following the illness, the confrontation with mortality sparked deep introspection for many participants. This existential pondering led to changed perspectives, including increased compassion, altruism, prosocial behaviors, and valuing of relationships. Priorities were realigned to focus more on loved ones, helping others, and purposeful living. Gratitude and faith were also heightened, with participants thanking and appreciating health, life, and everyday moments more after trauma. These shifts exemplify key PTG outcomes of relating to others differently (including spirituality), establishing new priorities, and appreciating life more deeply. Other research found that religiosity was predictive for PTG in a nurse sample in Hong-Kong (Yeung et al., 2022) and values and committed actions to be related with PTG (Landi et al., 2022).

Overall, the study demonstrates that despite COVID-19's challenges, positive change is possible through coping, inner strengths, and intentionally forging new perspectives while moving forward. Supporting survivors in processing trauma, leveraging strengths, and cultivating gratitude, compassion, and purpose may facilitate thriving. Further qualitative research is needed to advance understanding of PTG following COVID-19. Healthcare providers can apply these findings to promote holistic recovery and growth among survivors.



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## DYNAMICS OF AUTISM SYMPTOMS IN 3-6-YEAR-OLDS WITHIN THE FRAMEWORK OF A 4-FACTOR MODEL

**Andrey Nasledov, Sergey Miroshnikov, & Liubov Tkacheva**

*Department or Department of Pedagogy and Pedagogical Psychology,  
Saint Petersburg State University, 7/7 Universitetskaya Emb., 199034 Saint Petersburg (Russia)*

### Abstract

In 2020 – 2022 we conducted a survey of 926 children (383 with ASD, 200 with DD, 343 Norm group) in order to elaborate a screening scale for the expert diagnosis of ASD in 3-4-year-olds. For the examination we used an online questionnaire developed by us to identify 436 possible symptoms of autism. The questions were answered by specialists involved in correctional work with children. The main result of the study was elaboration of Autism Scale based on 40 autism symptoms (points) representing 4 vectors of its manifestation: 1) difficulties in establishing emotional contact, expressing one's emotions and decoding the emotions of others in the context of social interaction; 2) sensory disintegration; 3) difficulties in verbal and non-verbal communication and social skills; 4) hyperactivity, including excessive movements, motor disinhibition and restless behavior. The Scale has a prediction accuracy of 88.91% (sensitivity 92.1%, specificity 87.2%) (Nasledov, Miroshnikov, Tkacheva, Miroshnik, & Semeta, 2021). The structural and measurement invariance of this model was confirmed for boys and girls, 3- and 4-year-olds (Nasledov et al., 2021). In 2023 233 5-6-year-olds with ASD were examined using an online questionnaire including 40 points of the mentioned above Scale, in order to study the suitability of the developed Scale for diagnosing children of this age and identification of possible age-related changes. A multigroup confirmatory factor analysis showed that the Autism Scale, the 4-factor version of which was developed for 3-4-year-old children, retained structural and measurement equivalence for 5-6-year-olds. The accuracy of differentiation of the group of children with ASD from other children for this age remained high (85.8%), only slightly lower than for 3-4-year-olds. Apparently, this is due to the fact that the identified 4 factors (vectors) of ASD symptoms are the areas in which children with ASD differ the most from other children, and are least susceptible to age-related changes. Further, the values of the factors were calculated for children as the average values of the points included in each factor. A multidimensional ANOVA was used to study age shifts: Gender factor (1st, 2nd), Age factor (1 – 3-4-year-olds, 2 – 5-6-year-olds), dependent variables – 4 calculated factors. Multidimensional criteria revealed statistically significant main effects of the factors Gender and Age, the effect of the interaction of these factors was not statistically significant. According to one-dimensional criteria, girls, regardless of age, have statistically significantly stronger symptoms of Communication disorders than boys. Regardless of gender, the influence of age according to one-dimensional criteria was revealed in relation to Communication disorders and Sensory disorders. These symptoms decrease with age, apparently under the influence of corrective interventions. Regarding Emotional disorders and Hyperactivity/Disinhibition age differences are far from statistically significant. These symptoms remain at a consistently high level with age, apparently as more resistant to corrective interventions.

**Keywords:** *ASD, 3-6-year-olds, factor structure of autism, autism vectors.*

### 1. Introduction

Autism spectrum disorder (ASD) is a neurodevelopmental disorder characterized by problems in social interactions and repetitive and restrictive behaviors and interests (American Psychiatric Association, 2013). The problem of autism timely diagnosis and optimal psychological and behavioral intervention is very relevant nowadays, due to the high prevalence of this complex neurodevelopmental disorder (Maenner et al., 2020) and the serious consequences it causes for social adaptation and quality of life for those who suffer from it and their families (Mason et al., 2021). There is a wide variety of autistic symptoms and scenarios of its manifestation; however, it is customary to distinguish a triad of core features, such as impaired social communication, limited and repetitive behavior and sensory

disintegration (Happé & Frith, 2020). The etiology of autism is heterogeneous. To date, it is believed that the etiology of ASD includes but is not limited to such parameters as genetic risks (Lord, Elsabbagh, Baird, & Veenstra-Vanderweele, 2018), atypical brain maturation (Hadders-Algra, 2022), environmental, immunological, perinatal, neuroanatomic and biochemical factors (Pennington, Cullinan, & Southern, 2014). Such heterogeneity makes differential diagnosis of autism and early intervention a complicated task (van 't Hof et al., 2021). At the same time, it is known that the earlier signs of ASD are detected, the faster rehabilitation begins and the better the expected results (Clark, Vinen, Barbaro, & Dissanayake, 2018). The structure of autism symptoms is still unclear; in addition, existing diagnostic screening tools also have known limitations (Hus, & Lord, 2013; Kim et al., 2016). It is also necessary to note the gap in the literature regarding ASD factor structure, the understanding of which is crucial for studying its mechanisms and identifying specific phenotypes of autism to choose optimal interventions.

Our previous large-scale study was devoted to the identification of ASD factor structure in early childhood and the detection of its predictors and indicators. In 2020-2022, we examined 926 children (383 with ASD, 200 with developmental delay (DD), 343 groups of norm) in order to develop a screening scale for rapid diagnosis of ASD in 3-4-year-olds. An extensive online questionnaire was used for the examination, which we elaborated to identify 436 possible symptoms of autism. The main result of the study was the creation of an autism scale based on 40 autism symptoms (points) representing 4 vectors of its manifestation: "Emotional disorders", "Sensory disintegration", "Communication disorders" and "Hyperactivity/disinhibition". The accuracy of the scale prediction is 88.91% (sensitivity 92.1%, specificity 87.2%) (Nasledov et al., 2021). A multigroup confirmatory factor analysis of structural and measurement equivalence confirmed the 4-vector structure of ASD for children with autism only. Thus, the obtained scales reflect the vectors of ASD or specific phenotypes of ASD, depending on the predominance of the one of the four domains symptoms severity over the others. The purpose of this work was a comparative empirical analysis of age-related changes in autism phenotypes, conducted on 3-4-year-olds and 5-6-year-olds with ASD to identify trends in reducing or maintaining the severity of symptoms in each of the 4 domains.

## 2. Method

In 2023, we examined 346 children (233 with ASD, 46 with DD, 67 of norm groups) using a modified online questionnaire similar to the one we used earlier (Nasledov et al., 2021). The questionnaire included the same 40 items that formed 4 vectors of autism for 3-4-year-olds. This survey aims to verify the structural and measurement equivalence of that 4-factor model for 5-6-year-olds with ASD. Additionally, the hypothesis of age differences in dynamics of ASD symptoms was tested. For that purpose, a multi-group confirmatory factor analysis (CFI) was used for 12 packages of items (3 packages per factor, 3-4 items per package, with a random distribution of items in packages within each factor). The CFA was conducted according to the same scheme as before (Nasledov et al., 2021). The sample consisted of 383 3-4-year-olds and 233 5-6-year-olds with ASD. Due to the equivalence of the 4-factor model for the both age groups, it appeared correct to compare these samples by the selected factors. The values of the factors were calculated as the average values of the items included in them, so the value of the factor represented the proportion of affirmative responses to the items included in it. To analyze the influence of age on the values of 4 primary factors a multidimensional ANOVA was used according to the following scheme: 4 dependent variables corresponding to the values of primary factors, factors Gender and Age. IBM SPSS Statistics 28 version (Armonk, NY: IBM Corp.) was used.

## 3. Results

Checking the invariance of the 4-factor model for 3-4- and 5-6-year-olds is presented in Table 1.

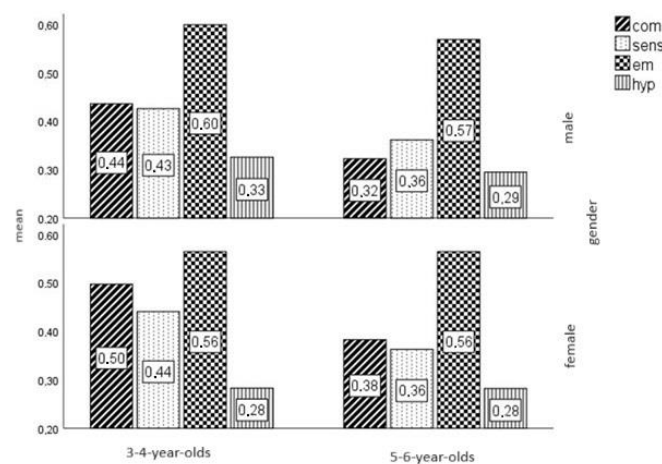
*Table 1. Fit indices for 3-4 and 5-6-year-olds with ASD.*

| Levels of restrictions | $\chi^2$ | df  | CFI   | TLI   | RMSEA |
|------------------------|----------|-----|-------|-------|-------|
| Unconstrained          | 208.555  | 100 | 0.94  | 0.921 | 0.042 |
| Measurement weights    | 224.047  | 108 | 0.936 | 0.922 | 0.042 |
| Structural weights     | 233.828  | 111 | 0.932 | 0.919 | 0.042 |
| Structural covariances | 241.239  | 112 | 0.929 | 0.916 | 0.043 |
| Structural residuals   | 285.213  | 116 | 0.907 | 0.894 | 0.049 |
| Measurement residuals  | 305.297  | 128 | 0.902 | 0.899 | 0.047 |

The unconstrained model corresponds well to the initial data for most of the indicators: CFI > 0.95 and TLI > 0.90; RMSEA < 0.05 (Pclose = 0.948). The ratio  $\chi^2/df$  is only slightly higher than 2, which, given the total sample size is acceptable. Thus, the configuration equivalence of the model is confirmed for the following levels of limitation: a) the level of explicit variables measurements (Measurement weights); b) the level of primary factors measurements (Structural weights); c) the level of covariances between factors (Structural covariances). The strict invariance of the models with respect to the remnants of primary factors (Structural residuals) and the remnants of explicit variables (Measurement residuals) is questionable. However, the arguments in favour of the models equivalence at the previous levels of constraints are sufficient for the model to be suitable for measuring 4 factors for 5-6-year-olds with ASD.

Figure 1 shows the results of comparing the average values of the percentages of affirmative answers from specialists to the questions concerning the severity of 4 groups of ASD symptoms in children, depending on gender and age.

Figure 1. The proportion of affirmative responses to 4 groups of ASD symptoms, depending on gender and age of the child (Com – Communication disorders, Sens – Sensory disorders, Em – Emotional disorders, Hyp – Hyperactivity/Disinhibition).



The use of multivariate analysis of variance by multivariate criteria (Pillai's Trace) revealed statistically significant main effects of Gender factor ( $F(4; 605) = 2.994; p = 0.018; \eta^2 = 0.019$ ) and Age factor ( $F(4; 605) = 6.770; p < 0.001; \eta^2 = 0.043$ ). The effect of the interaction of these factors is not statistically significant ( $F(4; 605) = 0.350; p < 0.884; \eta^2 = 0.002$ ). According to one-dimensional criteria, girls, regardless of age, statistically significantly show symptoms of Communication disorders more strongly than boys ( $F(1; 608) = 6.605; p = 0.010; \eta^2 = 0.011$ ). Regardless of gender, the influence of age according to one-dimensional criteria was revealed only in relation to Communication disorders (Com) ( $F(1; 608) = 23.409; p < 0.001; \eta^2 = 0.037$ ) and Sensory disintegration ( $F(1; 608) = 7.929; p = 0.005; \eta^2 = 0.013$ ). Regarding Emotional disorders and Hyperactivity age differences are not statistically significant ( $p > 0.390$ ).

#### 4. Discussion

Checking the invariance of the 4-factor model of autism for 3-4- and 5-6-year-olds confirmed its configurational equivalence for the compared samples of children, boys and girls, which corresponds to the previously obtained results on the stability of the main symptoms of autism in childhood (Li et al., 2022), and their possible persistence throughout lifespan (Shulman et al., 2020). We found a greater severity of communication disorders symptoms for girls than for boys. The results obtained highlight the possibility of the existence of gender-specific phenotypes within the framework of ASD. Previously it was shown, that females with autism without mental impairment have a special profile associated with the presence of communication problems, which makes them prone to negative social and emotional consequences (Sturrock, Adams, & Freed, 2021). Also in our study was the tendency revealed for decrease the severity of communicative and sensory problems within the age shifts from 3-4 to 5-6 years for all children, which may be explained due to timely performed behavioral and sensory interventions well known for positive outcomes (Paul, 2008; You, Gong, Guo, & Ma, 2024). However, the limitations of these methods in maintaining and generalizing skills suggests that many children with autism will need

to supplement these methods with actions less focused on adults in order to increase communicative initiation and transfer acquired skills to new conditions and new communicative partners (Carruthers, Pickles, Slonims, Howlin, & Charman, 2020).

The most important result of our study, apparently, was the discovered tendency to preserve the symptoms of emotional disorders and hyperactivity within the framework of age shifts for children with ASD of both genders. The results obtained go in accordance with the data of other authors. It has been shown that in about 30% of cases, autism is burdened with emotional disorders such as anxiety/OCD, including phobias, generalized and social anxiety disorders; mood disorders; oppositional defiant disorder; Tourette's disorder/nervous tic; eating disorders (Fucà et al., 2023). It is also believed that 50 to 70% of people with ASD have concomitant hyperactivity and attention deficit disorder (Hours, Recasens, & Baleyte, 2022). The similar neuropsychological difficulties common to ASD and ADHD due to comparable endophenotypes were found (Ghirardi et al., 2019). It was suggested that ADHD and ASD have similar patterns, including difficulties with emotion regulation, social awareness, and externalizing behavior (Rommelse, Geurts, Franke, Buitelaar, & Hartman, 2011). Apparently, this coincidence may explain the severity and duration of hyperactivity symptoms in children with autism.

Summarizing, it was revealed that in preschoolers with autism, sensory and communication problems decrease with age, presumably due to interventions. However, emotional disintegration and hyperactivity remain at a high level. The presence of the latest makes the prognosis for the child's development less favorable.

## 5. Limitations

The stability of the identified 4 structural components of autism symptoms for 3-6-year-olds is probably due to the fact that these components were initially isolated from a mixed sample of children with and without ASD (DD, Norm), as the areas in which children with ASD differ from other children most strongly. At the same time, the structure of the autism symptoms is more complex; highly likely, it has a greater age dynamic, which will be the subject for the further research.

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## UNRAVELING THE COMPLEX INTERPLAY OF AFFECTIVE NEUROPERSONALITY AND EMPATHY

İbrahim Gökşin Başer<sup>1</sup>, Zeynep Temel<sup>2</sup>, Melek Astar<sup>1</sup>, & İtir Tarı Cömert<sup>1</sup>

<sup>1</sup>Department of Psychology, Fatih Sultan Mehmet Vakıf University, Istanbul (Türkiye)

<sup>2</sup>Department of Psychology, CogRes Lab, Fatih Sultan Mehmet Vakıf University, Istanbul (Türkiye)

### Abstract

Individual discrepancies in expressing, regulating, and interpreting emotions not only explain a substantial portion of personality variability but also underlie diverse psychogenic expressions. Emotions and their regulatory processes serve as the very foundation of human personality. Building on neurobiological and evolutionary findings, Panksepp et al. (2011) explored the brain systems at the core of human emotions, leading to the development of the Affective Neuroscience Personality Scales (ANPS), which assess seven primary emotional systems underlying human emotional processes in a contemporary and interdisciplinary approach. This study aims to investigate the relationship between primary emotional systems and cognitive and emotional empathy processes. A total of 818 participants, consisting of 506 females and 312 males aged between 18-45 ( $M = 26.36$ ,  $SD = 7.36$ ), voluntarily participated in the study, declaring no psychiatric/neurological diagnoses. Data collection instruments included a sociodemographic information form, the Turkish versions of the Questionnaire of Cognitive and Affective Empathy (QCAE), and the Affective Neuroscience Personality Scale (ANPS). Data were collected online through SurveyMonkey, and the analysis was conducted using SPSS 26.0. To investigate the connections between QCAE and ANPS subscale scores, we utilized multiple linear regression models with a stepwise variable selection procedure. The results indicate that affective empathy is predicted by FEAR ( $\beta = .274$ ,  $t(812) = 8.778$ ,  $p < .001$ ), CARE ( $\beta = .215$ ,  $t(812) = 6.825$ ,  $p < .001$ ), SPIRITUALITY ( $\beta = .153$ ,  $t(812) = 4.856$ ,  $p < .001$ ), PLAY ( $\beta = .120$ ,  $t(812) = 4.037$ ,  $p < .001$ ), and SADNESS ( $\beta = .120$ ,  $t(812) = 3.390$ ,  $p < .01$ ) ( $R^2 = .346$ ,  $F(5,812) = 85.804$ ,  $p < .001$ ), while cognitive empathy is predicted by SEEK ( $\beta = .429$ ,  $t(814) = 7.675$ ,  $p < .001$ ), CARE ( $\beta = .269$ ,  $t(814) = 5.511$ ,  $p < .001$ ), and SPIRITUALITY ( $\beta = .151$ ,  $t(814) = 2.960$ ,  $p < .001$ ) ( $R^2 = .177$ ,  $F(3,814) = 58.486$ ,  $p < .001$ ). Our results indicate that ANPS subscales positively predict both affective and cognitive empathy, signifying the influence of primary emotional systems on higher-order empathic abilities. Furthermore, these results aligns with the broader discourse on the dynamic interaction between emotional and cognitive processes, further enriching our comprehension of human behavior and its underlying neurobiological correlates.

**Keywords:** *Affective Neuroscience Theory (ANT), affective neuropersonality, cognitive empathy, affective empathy, MLR.*

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### 1. Introduction

Affective Neuroscience Theory (ANT) is a framework that focuses on the emotional aspects of brain function and behavior. It posits that emotional processes are fundamental to understanding human behavior and personality (Montag & Davis, 2018). ANT was first introduced by Jaak Panksepp, who identified seven primary emotional systems that underlie psychological well-being and various affective brain disorders (Montag & Davis, 2018). These primary emotional systems are considered essential for shaping individual differences in emotionality, motivation, and cognition, which in turn influence behavioral patterns (Montag & Davis, 2018). ANT has been applied in various fields, including psychology, neuroscience, and personality research. It has been used to investigate the associations between emotional traits, ideological attitudes, and personal value types (Sindermann et al., 2023). Additionally, ANT has been utilized to develop personality assessment tools, such as the Affective Neuroscience Personality Scales, which aim to capture neurobiologically based temperament dispositions (Neumann, 2020). Affective Neuroscience Theory provides a valuable framework for studying the neural mechanisms underlying emotions, personality traits, and emotional regulation. By emphasizing the role of

emotions in shaping behavior and psychological well-being, ANT contributes to a deeper understanding of how affective processes influence various aspects of human functioning.

Cognitive empathy and affective empathy are two distinct components of empathy which is a well-studied component of emotionality. Research has shown that while, cognitive empathy is more related to perspective-taking and understanding the mental states of others such as person's experiences, concerns and perspectives and often associated with theory of mind, affective empathy is more about being able to detect and share or experience the emotional states of others (Nachane et al., 2021). Cognitive empathy involves understanding another person's thoughts, feelings, and perspective, while affective empathy involves sharing and resonating with the emotions of others (Zhang et al., 2021). Studies shown that cognitive empathy plays a significant role in understanding the perspective of others and is linked to higher-order brain functions, particularly in the prefrontal cortex, while affective empathy is associated with internalizing problems and the activation of various brain regions including insula (Terry et al., 2009; Chun-hua et al., 2019; Eres et al., 2019; Knight et al., 2019; Rizkyanti et al., 2021).

Research has also highlighted differences in the development of cognitive and affective empathy. For instance, cognitive empathy tends to increase with age, as observed in adolescents, while affective empathy may not show the same age-related pattern (Geng et al., 2012). Additionally, studies have demonstrated that individuals with different levels of cognitive and affective empathy may exhibit varying behaviors, such as in cyberbullying scenarios where males with low cognitive empathy are more likely to engage in such behaviors (Şincek et al., 2020). In summary, cognitive empathy involves understanding the cognitive aspects of another person's experience, while affective empathy entails sharing and responding to their emotional states. Both forms of empathy play distinct roles in social interactions, behavior, and emotional responses, highlighting the importance of considering both cognitive and affective empathy in understanding human empathy and behavior.

The relationship between affective neuroscience theory (ANT) and empathy is crucial in understanding the neural mechanisms underlying emotional processes and social interactions. ANT provides a framework that emphasizes the importance of emotions in shaping behavior and personality. Research has shown that empathy is implicated in various aspects of social cognition, prosocial behavior, and moral development (Decety, 2010). Affective neuroscience theory offers insights into the neural basis of empathy, highlighting the integration of emotional and cognitive processes in empathic responses (Lévy et al., 2019). Studies have demonstrated that empathy relies on shared neural processes similar to those involved in experiencing emotions firsthand (Rütgen et al., 2015).

Moreover, ANT has been instrumental in exploring the impact of empathy on social behavior, moral decision-making, and interpersonal relationships (Decety & Cowell, 2014). Understanding the neural underpinnings of empathy is essential for elucidating how individuals perceive, understand, and respond to the emotions of others (Rameson & Lieberman, 2009). By integrating affective neuroscience theory with empathy research, a deeper understanding of the neural mechanisms that underlie empathic responses and social interactions can be achieved. In conclusion, the relationship between affective neuroscience theory and empathy provides valuable insights into the neural basis of emotional processes, social cognition, and prosocial behavior.

By examining how emotions and empathy are interconnected at the neural level, researchers can gain a better understanding of human behavior, interpersonal relationships, and emotional regulation.

## **2. Methods**

### **2.1. Participants**

The sample of the study consisted of 818 participants between ages 18-45, of which 61.90% (506) were women and 38.10% (312) were men. Participation in the study was on a voluntary basis and consisted of people with no psychiatric or neurological diagnoses.

### **2.2. Instruments**

The Questionnaire of Cognitive and Affective Empathy (QCAE) developed by Reniers, Corcoran, Drake, Shryane and Völlm (2011) and adapted to Turkish by Gıca, Büyükavşar, İyisoy and Güleç (2021), the Affective Neuropersonality Scale (ANPS-v2.4) developed by Davis and Panksepp (2011) and adapted to Turkish by Özkarar-Gradwohl, Panksepp, İçöz, Çetinkaya, Köksal, Davis and Scherler (2014) were used.

### **2.3. Procedure**

While the use of the empathy total score makes it difficult to make an in-depth interpretation of the relationships between the variables, it was decided to use the Cognitive Empathy and Affective Empathy subscales since the use of other subscales obtained from the scale (e.g., Perspective Taking,



Online Simulation, Emotion Contagion, Proximal Responsivity, Peripheral Responsivity) may also result in too specific inferences.

### 3. Results

Multiple regression analysis reveals that affective empathy is significantly predicted by FEAR ( $\beta = .274$ ,  $t(812) = 8.778$ ,  $p < .001$ ), CARE ( $\beta = .215$ ,  $t(812) = 6.825$ ,  $p < .001$ ), SPIRITUALITY ( $\beta = .153$ ,  $t(812) = 4.856$ ,  $p < .001$ ), PLAY ( $\beta = .120$ ,  $t(812) = 4.037$ ,  $p < .001$ ), and SADNESS ( $\beta = .120$ ,  $t(812) = 3.390$ ,  $p < .01$ ), with an overall explained variance of 34.6% ( $R^2 = .346$ ,  $F(5,812) = 85.804$ ,  $p < .001$ ). On the other hand, cognitive empathy is significantly predicted by SEEK ( $\beta = .429$ ,  $t(814) = 7.675$ ,  $p < .001$ ), CARE ( $\beta = .269$ ,  $t(814) = 5.511$ ,  $p < .001$ ), and SPIRITUALITY ( $\beta = .151$ ,  $t(814) = 2.960$ ,  $p < .001$ ), with an overall explained variance of 17.7% ( $R^2 = .177$ ,  $F(3,814) = 58.486$ ,  $p < .001$ ). Detailed results of the multiple regression analysis are provided in the tables below (Table 1 for Affective Empathy and Table 2 for Cognitive Empathy).

Table 1. Regression Analysis Results for Predicting Subscale Scores of Affective Empathy by ANPS Subscale Scores.

| Effect       | Estimate | SE   | t     | p    | 95% CI |      |
|--------------|----------|------|-------|------|--------|------|
|              |          |      |       |      | LL     | UL   |
| FEAR         | .274     | .031 | 8.778 | .000 | .213   | .336 |
| CARE         | .215     | .032 | 6.825 | .000 | .153   | .277 |
| SPIRITUALITY | .153     | .032 | 4.856 | .000 | .091   | .215 |
| PLAY         | .120     | .030 | 4.037 | .000 | .062   | .179 |
| SADNESS      | .120     | .035 | 3.390 | .001 | .050   | .189 |

Note. CI = confidence interval; LL = lower limit; UL = upper limit.

Table 2. Regression Analysis Results for Predicting Subscale Scores of Cognitive Empathy by ANPS Subscale Scores.

| Effect       | Estimate | SE   | t     | p    | 95% CI |      |
|--------------|----------|------|-------|------|--------|------|
|              |          |      |       |      | LL     | UL   |
| SEEK         | .429     | .056 | 7.675 | .000 | .319   | .538 |
| CARE         | .269     | .049 | 5.511 | .000 | .173   | .364 |
| SPIRITUALITY | .151     | .051 | 2.960 | .003 | .051   | .251 |

Note. CI = confidence interval; LL = lower limit; UL = upper limit.

### 4. Discussion

The claim that ANPS scales are an important tool in understanding the neural mechanisms underlying emotional processes seems justified, since cognitive and affective empathy defined in different ways in the literature are predicted by different ANPS subscales. From this perspective the findings seems to be in line with the literature based on ANPS's ability to distinguish different neural mechanisms underlying emotional processes and empathy being related with different regions (Knight et al., 2019; Eres et al., 2019). For this reason, it is thought that it would be reasonable for further research on the relationships between these two variables to combine self-report measurement tools and neuroimaging.

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## ATTITUDE TOWARDS MENTAL ILLNESS AND ITS EFFECT ON SEEKING PSYCHOLOGICAL TREATMENT AMONG UNIVERSITY STUDENTS

Getrude Cosmas<sup>1</sup>, Eric Manuel Torres<sup>2</sup>, Lua Pei Lin<sup>3</sup>, & Kok Ann Gie<sup>4</sup>

<sup>1,3,4</sup>*Faculty of Psychology and Education, University Malaysia Sabah (Malaysia)*

<sup>2</sup>*Catholic Theological College, University of Divinity (Australia)*

### Abstract

Mental illness among university students is an ever-growing concern. The many challenges arising from both academic and social life are factors that likely contribute to mental illness in this population. Indeed, the often-hectic university lifestyle can lead to stress, depression, and anxiety for some students. This might accumulate with other stressors (e.g., interpersonal conflict, family relationships, and socio-environmental factors) thereby affecting a student's capability to cope when experiencing difficulties. Without adequate psychological support, certain students may develop mental illnesses. Although most universities offer various means to access psychological assistance or counselling, many students nonetheless feel hesitant to seek help. A major barrier in help-seeking is the perceived negative attitude towards mental health issues, including feeling ashamed for being diagnosed with a mental illness and worrying about the potential consequences of such a diagnosis. Thus, negative attitudes can impede students from seeking psychological support. To investigate this phenomenon, a study involving 236 university students was conducted. It found that negative attitudes towards mental illness play a significant role in students not seeking psychological help. Students exhibiting positive attitudes towards mental illness demonstrated fewer barriers to obtaining psychological help (i.e., less fear of stigmatization, less difficulty in self-disclosure, and less perceived devaluation). Positive attitudes towards mental illness might derive from greater knowledge and awareness about mental health. Therefore, it is imperative for universities and similar institutions to implement mental health advocacy programs to promote positive attitudes towards mental illness. This may decrease certain barriers among university students considering obtaining psychological help.

**Keywords:** *Attitude, mental illness, psychological help, barriers.*

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### 1. Introduction

Since the COVID-19 pandemic, mental health has increasingly become a topic of conversation within Malaysia (Bahari, 2022). It is commonly noted that mental illness is the second leading health concern impacting Malaysians, with the majority of those affected being within the 16 to 19 age group and coming from low-income families (Yusry, 2022). During the recent pandemic, mental health issues in Malaysia have become more prominent due to several unexpected social challenges. For instance, the Malaysian Mental Health Association report (dated October 2020) showed that the incidence of mental illness increased by two-fold amid the COVID-19 lockdowns (Yusry, 2022). During the COVID-19 pandemic, the number of calls that the Mental Health and Psychosocial Support (MHPSS) hotline received significantly increased. The Malaysian government received a barrage of calls, many of which were related to mental health. Of the 145,173 calls to the Malaysian government from 25 March 2020 until 20 May 2021, 85.5% were in regard to mental health issues that need emotional support and counselling precipitated by the loss of jobs, no income, family conflict, problem in interpersonal relationship, and lack of access to help services (Roslan, 2021). Among those affected by mental health issues and illnesses were many university students. Students do not only struggle with their academic and social challenges but also with the adversities resulting from local and global events. During the pandemic, these anxieties included the fear of the spreading COVID-19 virus, the loss of loved ones, the restrictions on certain freedoms, and the inability to experience in-person campus life. Indeed, mental health issues among university students are a major concern and it has become increasingly prominent since the pandemic because of the harmful effects of quarantine upon such students as compared to the general population (Kumaran et al., 2022). Kumaran et al.'s (2022) study found that many Malaysian

university students were – and some still are – facing mental health issues as a result of high levels of stress, anxiety, and depression, much of which relates to the drastic changes to teaching delivery and learning methods (i.e., fully online classes). Furthermore, research by the Institute for Youth Research Malaysia (2023) showed that the main sources of stress, anxiety, and depression among youths include worry about their future (82%), feeling guilty after breaking promises (73%), feeling inadequate of themselves (71%), economic problems (61%), and academic load (52%).

A study conducted by Maung et al. (2023) found that the prevalence of depression, anxiety, and stress among university students at one private university in Northern Malaysia to be 34.8%, 42.2%, and 33.5%, respectively. Maung et al.'s (2023) study also showed that older-aged students have a greater risk of developing depression and stress than their younger-aged counterparts. This finding supports Lee et al.'s (2023) statement that, although older students have a better understanding of mental illness than younger students, older students tend to hold a greater number of negative attitudes toward the mentally ill than younger students. Although COVID-19 is no longer considered a global health emergency, university students are still struggling with mental health issues arising from the pandemic. Ho et al. (2022) observe that the Malaysian government has encouraged COVID-19 to become endemic and this can gradually allow students to return once again to campus and back to the previous learning and teaching style. Following the recent reopening of most universities in Malaysia, undergraduate students have expressed a high amount of concern regarding academic stress and anxiety with the sudden transition from two years of online learning to a physical environment (Ho et al., 2022).

For this reason, most universities have provided various social support systems, such as counselling centers, peer support groups, academic social support, and psychological services. Yet, despite the many offerings of support, not all students, including those potentially requiring help, have taken the opportunity to obtain psychosocial assistance. Past researchers have identified several barriers to seeking treatment, namely a lack of understanding about mental health problems, fear of social stigma or embarrassment (Abolfotouh et al., 2019; Shi et al., 2020), negative attitudes towards mental illness (Sangeeta et al., 2020; Shi et al., 2020), and a lack of social support or difficulty in accessing professional services (Shi et al., 2020). Many students exhibit a lack of interest in seeking psychological support. This lack of interest might be influenced by negative attitudes towards mental illness held by students. Moreover, a sense of shame and fear arising from being isolated due to lockdowns has, arguably, led them to similarly feel shame and fear should their peers find out about their mental illness. In addition, students do not only hold negative attitudes towards mental illness itself but also towards people with mental illness (e.g., avoiding contact with individuals with diagnosed – or perceived – mental illness). Consequently, the negative attitudes towards mental illness and people with mental illness may decrease motivation among students to seek psychological assistance from relevant social support available at their universities or via other support organizations. Duncan (2022) observed that one's attitudes towards mental health are an important aspect of help-seeking behaviors. Attitudes towards mental illness can be influenced by stigmatization from society, such as feeling afraid to have contact with people with mental illness or feeling ashamed of having family members diagnosed with mental illness. Additional barriers to seeking psychological help include a lack of trust in the effectiveness of social support systems, difficulties in disclosing personal matters, and a lack of knowledge regarding the effectiveness of psychological treatment in alleviating mental health issues. Such negative views towards mental illness may further decrease motivation among students to seek psychological assistance from mental health professionals. Some students may (erroneously) believe that it is better to keep their mental health problems secret instead of sharing their concerns with loved ones or seeking psychological support.

## 2. Objectives

The main objective of this study was to examine the effects of attitudes towards mental illness on barriers to seeking psychological help such as fear of stigmatization, lack of trust in the mental health services and professionals, difficulties in self-disclosure, perceived devaluation, and lack of knowledge regarding psychological treatments. Previous research has noted that studies about attitudes towards mental disorders among university students are lacking in Malaysia (Al-Naggar, 2013; Sangeetha et al., 2022) and other non-Western countries. A review of studies on public perceptions and attitudes towards mental illness revealed that of 61 studies, only nine were conducted in non-Western countries (Angermeyer & Dietrich, 2016).

## 3. Methods

The study presented in this paper involved 236 students from various faculties at one public university in Sabah, Malaysia. In order to obtain the participants, students were randomly approached

during a mental health program organized by a group of psychology students. For example, potential participants were approached by volunteers of the mental health program outside the university library, faculty buildings, lecture halls, and other areas within the university grounds where students congregate. The mental health program had the theme of ‘H.E.L.P’ which stood for ‘Help, Empathy, Laugh, and Embrace’. Students who were interested in taking part in this study were provided with a Google survey link. Before proceeding into the study questions, the survey required all participants to provide their consent by ticking ‘Yes’ in the consent section thereby indicating their agreement to take part in this study voluntarily. Each participant was asked to answer the following three sets of questions that measured targeted variables in the study: a demographic scale, attitudes towards mental illness scale, and barriers to seeking psychological help scale.

The demographic scale measured the participants’ academic and personal backgrounds, including the participant’s age, gender, ethnicity, university, faculty, campus accommodation and educational level. The attitudes towards mental illness scale consisted of 14 items that measured the participants’ attitudes towards mental health. This scale was adapted from the attitudes towards mental illness scale created by Weller and Grune scale (1988) and a similar scale developed by Topkaya et al. (2017). Responses to each statement were scales from 1 ‘strongly disagree’ to 5 ‘strongly agree’. There were eight negative items, and these need to be reversed score before running the reliability values and analysis. The higher the score obtained, the greater the number of positive attitudes towards mental health illness indicated by the participant. The barriers to seeking psychological help scale was developed by Topkaya et al. (2017) and it consists of 17 items within five subscales. The following are examples of items used “I worry about whether my friends would mock me if I seek psychological help (fear of being stigmatized); “I worry about whether the professional would listen to me adequately” (trust in mental health professionals); and “I refuse to give information about my private problems (violence, etc.), even to a professional” (difficulties in self-disclosure). The responses were scaled from 1 ‘strongly disagree’ to 5 ‘strongly agree’. The higher the score obtained, the greater the barriers to seeking psychological help displayed by the participant.

#### 4. Results

The reliability of each of the scales used in this study were acceptable and the values ranged from .67 to .92. Of a total of 236 participants, a majority were female, 171 (72.5%), while 65 (27.5%) were male. The participants’ mean age was 21.21 (SD=1.06). Table 1 shows that there was a negative significant effect of attitudes towards mental health on barriers to seeking psychological help.

*Table 1. Simple Regression Value of the Effect of Attitudes towards Mental Illness on Barriers to Seeking Psychological Help.*

| Barriers to seeking help         | R square | Beta  | t     | Significant value |
|----------------------------------|----------|-------|-------|-------------------|
| Attitudes towards mental illness | .034     | -.185 | -2.88 | 0.04              |

Note:  $k < .05$

The attitudes towards mental health contributed 3.4% to the barriers to seeking psychological help. This indicates that participants who showed a greater amount of positive attitudes towards mental illness tended to demonstrate fewer barriers to seeking psychological help ( $B = -.185$  ( $_{1,233}$ ),  $t = -2.88$ ). In terms of the five barriers to seeking psychological help, the biggest or most significant barrier was the fear of being stigmatized (mean=12.06; SD=4.08). On the other hand, the smallest or least significant barrier to seeking help was perceived devaluation (Mean=9.09; SD=3.09). Table 2 shows the mean and standard deviation for each of the five barriers.

*Table 2. The Mean and Standard Deviation for each subscale of Barriers to Seeking Psychological Assistance (N=236).*

| Barriers to seeking psychological help   | Mean  | SD   |
|--|-------|------|
| Fear of being stigmatized                | 12.06 | 4.08 |
| Trust in the mental health professionals | 12.21 | 4.06 |
| Difficulties in self-disclosure          | 9.54  | 2.65 |
| Lack of knowledge                        | 9.10  | 3.30 |
| Perceived devaluation                    | 9.09  | 3.09 |

## 5. Discussion

The results of this study indicate that participants who showed a greater amount of positive attitudes towards mental illness exhibited fewer obstacles in seeking psychological help. Such positive attitudes refer to the participants' view that people who are diagnosed with mental health illnesses should be given a chance to make decisions and have similar rights as others. Holding positive attitudes towards mental health could reduce certain barriers to seeking help for mental health problems. People with positive help-seeking attitudes tend to be more active in trying to find a solution to their problems (Buanasari et al., 2023). In this study, barriers to seeking psychological help were measured based on five factors: fear of being stigmatized, trust towards mental health professionals (or services), difficulties in self-disclosure, perceived devaluation, and lack of knowledge. The findings of this study support the conclusions of past studies that show that positive attitudes towards mental illness can predict people's intention to seek professional help when needed (e.g., Abolfotouh et al., 2019; Sangeetha et al., 2022). The positive attitudes towards mental health shown by the participants might be derived from external factors such as their knowledge or awareness about mental illness. Such knowledge can be gained through mental health awareness campaigns as well as one's direct experience of mental illness or via that of friends or family. Additionally, a person's own experience dealing with their academic and social challenges, particularly during the recent COVID-19 pandemic, might also inform their attitudes towards mental health. Indeed, previous studies (Ah Gang & Torres, 2022; Cosmas et al., 2022), have revealed that during the pandemic's turbulence, many students searched within themselves to find their inner strengths so as to manage and cope with their mental issues, such as stress, depression, and anxiety. Past studies have shown that the incidence of mental illness among university students had already been increasing at an alarming rate each year (Zivin et al., 2009). Indeed, according to Hamdan-Mansour et al. (2009), students studying at higher learning institutions are at more risk of developing mental health problems as compared to peers of similar age. Al-Naggar (2013) observed that globally there is growing evidence of stigmatization of people with mental illnesses. Stigmatization is a major barrier for people to seek and obtain psychological support. If a person has positive attitudes towards mental illness, this may help to reduce the concern of being stigmatized. To combat the stigmatization of people with mental illness, the Malaysian government, under the fifth strategy of the Malaysian National Strategic Plan for Mental Health 2020–2025, is focusing on forming intra- and inter-sectoral collaboration. One proposed program is to incorporate the topic of mental health topics into the school curriculum and co-curricular activities. Successful intervention programs should be replicated across all schools. Teachers and other school staff should also receive continuous education regarding mental health (Lee et al., 2023). Moreover, as was suggested by students participating in Oláh et al.'s (2022) study, universities should provide programs that may foster a reduction in barriers to seeking psychological assistance, such as psychoeducation and stigma reduction campaigns in addition to offering online counselling as well as standard in-person counselling.

## 6. Conclusions

In sum, the study presented in this paper showed that one's attitudes towards mental illness can significantly impact one's intention to obtain psychosocial support from the professional when required. Indeed, it was found that students with positive attitudes towards mental illness showed less hesitancy in asking for psychological support. Positive attitudes towards mental illness can be enhanced through mental health literacy. This can be achieved by conducting mental health awareness campaigns that foster positive attitudes towards mental illness. To be sure, such campaigns should not be reduced to an 'awareness month' but ought to be part of a continuous effort to improve mental health among students and their attitudes towards mental illness.

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## **SENSORY PROFILE AND ADAPTATION IN ADULTS WITH AUTISM SPECTRUM DISORDER WITHOUT COGNITIVE IMPAIRMENT**

**Antonella Cavallaro, Luca Simione, & Alessandro Frolli**

*Università degli Studi Internazionali di Roma (Italy)*

### **Abstract**

Autism Spectrum Disorder (ASD) is a disorder included into neurodevelopmental disorders. ASD is characterized by social and communication issues, restricted and repetitive patterns of behavior or interests, and alterations in sensory perception. These impairments significantly impact people's lives, leading to a decrease in their quality of adaptation. Autism Spectrum Disorder can manifest either in comorbidity with other neurodevelopmental disorders or in isolation. Due to increased sensitivity and awareness, many individuals seek a diagnosis in adulthood. Many of them seek a diagnosis because one or more relatives have received an Autism diagnosis. Some individuals learn about the disorder through friends or social channels, while others receive a diagnosis after developing secondary symptoms such as depression or anxiety disorders. Literature shows that not all individuals with autism traits experience impairments in their lives; they are often referred to as having a 'broader phenotype.' However, some individuals experience difficulties in school and work even in the absence of disabilities, while others exhibit challenges in adapting to various aspects of life. In our study, we aim to investigate whether sensory alterations have a negative impact on adaptive functioning in adults with autism who received their diagnosis in adulthood. Specifically, the goal of our study is to examine the correlation between the sensory profile, adaptive quotient, and the development of depression and anxiety disorders. We used the Wechsler Adult Intelligence Scale, 4th edition, to assess cognitive impairment and the Ritvo Autism Asperger Diagnostic Scale–Revised (RAADS–R) for diagnosing autism in adulthood. A total of 25 subjects met our criteria. To assess sensory processing dysfunction, we utilized the Glasgow Sensory Questionnaire (GSQ). For investigating the adaptive quotient, we administered the Vineland Adaptive Behavior Scale II. Depression is assessed using the Beck Depression Inventory (BDI), while anxiety traits or disorders are measured with the Hamilton Anxiety Rating Scale" (HAM-A). Correlation between sensory profile and depression/anxiety levels measured. Our results show that a significant change in sensory processing correlates with prominent symptoms of anxiety and depression. In addition, changes in sensory processing are also correlated with low adaptive functioning in the daily and social domains.

**Keywords:** *Autism Spectrum Disorder, sensory impairment, adaptive quotient, Autism in adulthood, adults.*

### **1. Introduction**

Autism Spectrum Disorder (ASD) is a neurodevelopmental disorder characterized by persistent and pervasive impairments in communicative and social development and the presence of repetitive and inflexible patterns of thought and behaviour. The disorder also involves an alteration in sensory perception (American Psychiatric Association, 2013). The most common comorbidities in ASD are intellectual disability in 50 to 80 per cent (Simonoff et al., 2008; Mpaka et al., 2016), attention deficit hyperactivity disorder (ADHD) in 20 to 85 per cent (Simonoff et al., 2008; Rommelse et al., 2011; Mpaka et al., 2016) and epilepsy in 30 per cent (Tuchman & Rapin, 2002). The presence of these comorbidities and especially the presence of intellectual disability are predictors of the worst adaptive quotient (AQ), especially the intellectual quotient (IQ) can be considered a good predictor of adaptive behaviour, moreover the gap between IQ and AQ decreases in low functioning individuals with autism and increases in older individuals (Kanne et al., 2011). The diagnosis of ASD is typically made in early childhood, although in some cases, it may not be made until a person reaches adulthood and undergoes a specialized assessment. In such cases, no cognitive impairment is typically observed, and their AQ scores are only slightly worse than those of controls. However, other psychological difficulties such as anxiety disorders or depression are measured (Piven & Palmer., 1999). Sometimes, a neuropsychological assessment may



be requested due to a family member being diagnosed with ASD. Relatives of people with autism may exhibit milder traits associated with autism, known as the Broader Autism Phenotype (BAP). However, it does not appear to indicate a clinical severity of the disorder or a significant impairment of adaptation. BAP is characterized by impairment in pragmatic language skills and social responsiveness, as well as other areas of reciprocal social interaction (Dawson et al., 2002). However, it does not meet the clinical criteria for autism spectrum disorder or result in a lack of adaptability. Finally, research has shown that individuals with the Broad Autism Phenotype (BAP) exhibit elevated rates of certain personality traits, such as 'aloofness', 'rigidity', and 'hypersensitivity', as well as increased rates of comorbid psychiatric conditions, including anxiety and depression (Sucksmith, Roth, & Hoekstra, 2011). However, there is limited research on the sensory profile of individuals with BAP and those diagnosed with Autism Spectrum Disorder (ASD). Due to the increased clinical sensitivity regarding the range of autism symptoms, more individuals with BAP are now diagnosed with ASD level 1. In recent years, there has been an increase in studies examining sensory profiles in individuals with ASD. Sensory reactivity is a diagnostic criterion for ASD and has been linked to poorer functional outcomes, behavioural difficulties, and increased autism severity throughout the lifespan (DuBois, Lymmer, Gibson, Desarkar, & Nalder., 2017). Leekman et al. (2007) found that over 90% of children with autism exhibit sensory abnormalities across multiple domains, which persist into adulthood. It is important to note that these evaluations are objective and based on empirical evidence. Age and IQ level may affect some sensory symptoms, but further research is needed. The objective of this study is to examine the influence of sensory profiles on adaptive behaviour in individuals who meet the criteria for BAP or are diagnosed with Autism Spectrum Disorder (ASD) level 1 without cognitive impairment and low autistic symptoms. The study will investigate the correlation between sensory profiles, anxiety, depression, and adaptation.

## 2. Methods

### 2.1. Participants

This study involved the blind participation of 25 subjects recruited among patients of FINDS Neuropsychiatry Clinic. The participants were selected by expert clinicians based on their diagnosis and cognitive profile. To be included in the study, participants had to meet the following criteria: (a) An ASD diagnosis (DSM-5, 2013) is received when the individual is over 18 years old. (b) Participants' scores on the RAADS scale should not exceed 130. (c) IQ should be assessed using the Wechsler Adult Intelligence Scale (WAIS-IV) and should not be less than 100. (d) Participants should not have any comorbidities or defined genetic syndromes. The Ritvo Autism Asperger Diagnostic Scale–Revised (RAADS–R) was used to diagnose autism in adulthood (Ritvo et al., 2008; Ritvo et al., 2011). The final sample consisted of 23 subjects (17 male and 6 female) aged between 22 and 34 years (mean age 29,09). Two subjects did not complete one or more tests.

### 2.2. Procedures

After the sampling procedure, the participants were administered with experimental protocols. The sensory profile of the participants was identified using the Glasgow Sensory Questionnaire (GSQ); the Vineland II was used to measure the adaptive profile in communication, social skills, and daily skills. The Beck Depression Inventory (BDI) and Hamilton Anxiety Rating Scale" (HAM-A) were respectively used to assess depression and anxiety symptoms. Informed consent was obtained for the treatment of the results without any prior explanation of experimental hypotheses before administering the tests.

*The Glasgow Sensory Questionnaire (GSQ)* is a self-administered questionnaire for adults that investigates both hypersensitivity and hyposensitivity to sensory stimuli (Robertson and Simmons, 2013).

*The Beck Depression Inventory (BDI)* is a self-report questionnaire that evaluates the presence and severity of depressive symptoms. It consists of 21 items divided into two scales: the somatic-affective scale, which measures somatic affective symptoms such as sleep problems and anhedonia, and the cognitive scale, which measures cognitive characteristics of depression such as belief and guilt (Sica & Ghisi, 2007).

*The Hamilton Anxiety Rating Scale (HAM-S)* is a self-report questionnaire used to evaluate anxiety levels in individuals from adolescents to adults. It comprises 15 items that assess various anxiety symptoms related to feelings, beliefs, and behaviour (Hamilton, 1959).

*The Vineland Adaptive Behavior Scale II (VABS II)* is an interview used to measure an individual's level of adaptive behaviour. It consists of three main scales: Communication, Daily Living Skills, and Socialisation. For children under 8 and the elderly over 56, the Motor Skills Scale is also included (Sparrow et al., 2005).

### 2.3. Methods

The statistical survey software SPSS 25.0 (2017) (ARMONK, NY and CHICAGO) was used for data analysis. The statistical test used is the Pearson correlation coefficient test. The correlation coefficient measures the strength and direction of the relationship between two variables. The significance threshold was set at  $p < 0.01$ . Results are showed in Tab.1. The data analysis showed a significant positive correlation between the GSQ (total) variables and the BDI and HAM-S variables. The former measures the levels of alteration in total sensory perception (both hypo and hyper), while the latter measures depressive symptoms (BDI) and anxiety-related symptoms (HAM-S). A significant negative correlation was found between the GSQ variables and the VABS-Daily and VABS-Soc variables, which respectively indicate daily living skills and socialization abilities. In particular, higher levels of HY (hypersensitivity) are associated with lower values on the VABS-D and VABS-S scales, while higher levels of HO are associated with greater levels of depressive symptoms. Higher levels of anxiety measured by HAM and depression measured by BDI are also associated with lower levels of domestic and social autonomy.

Table 1. Results.

|                | <b>BDI</b>     | <b>HAM - S</b> | <b>VABS - C</b> | <b>VABS - D</b>   | <b>VABS -S</b>  |
|----------------|----------------|----------------|-----------------|-------------------|-----------------|
| <b>GSQ tot</b> | ,892**<br>,000 | ,893**<br>,000 | -,490<br>,018   | -0,796**<br>0,000 | -,909**<br>,000 |
| <b>GSQ HO</b>  | ,685**<br>,000 | ,657**<br>,001 | -,387<br>,068   | -,321<br>,136     | -,626**<br>,001 |
| <b>GSQ HY</b>  | ,710**<br>,000 | ,602**<br>,002 | -,485<br>,019   | -,841**<br>,000   | -,792**<br>,000 |

\*\* The correlation is significant at the 0.01 level (two-tailed).

### 3. Discussion

A preliminary analysis of the data revealed a positive correlation between altered sensory perception and anxious and depressive symptoms in adult subjects diagnosed with level 1 ASD, both when they presented hypersensitivity to sensory stimuli and in cases of sensory hyposensitivity. This data appears to indicate that an alteration in sensory processing is associated with higher levels of anxiety symptoms. This finding has been reported in the literature even in individuals without a diagnosis of autism spectrum disorder or other neurodevelopmental disorders (Cervin, M., 2023, and Conelea, Carter & Freeman, 2014). Paquet et al. (2022) found that high levels of sensory processing difficulties are associated with symptoms of anxiety, depression, and low self-esteem. Difficulties in sensory processing, both excessive and deficient, are also linked to lower performance in daily life tasks, even in the absence of cognitive disabilities. In addition, sensory processing difficulties would affect socialization skills but not communication skills, highlighting the integrity of underlying cognitive processes and an influence on the ability to adapt one's behavior to environmental contingencies, which are more difficult to process due to altered sensory stimulus processing.

### 4. Conclusions

The presence of sensory processing alterations has been found to be correlated with a higher tendency to develop anxious or depressive symptoms. Additionally, it appears to cause greater difficulty in environmental adaptation for these individuals, both in domestic and community daily life tasks, as well as in interpersonal relationships, resulting in greater difficulties in the workplace and social settings in general. The presence of sensory processing alterations in close relatives of individuals with autism or other neurodevelopmental disorders such as ADHD (Ghanizadeh, 2011) may suggest a sort of phenotypic anticipation or typical neuropsychological profile that should be further investigated in order to identify the underlying neuropsychological processes that would make such individuals more vulnerable to the development of anxious or depressive symptoms. Our study has highlighted the presence of sensory processing profiles in adult subjects, both in terms of hypo and hyper reactivity. This is consistent with the findings in the literature for children (Ashburner, Ziviani & Rodgers 2008; Ben-Sasson et al., 2009; Tomchek, Little, & Dunn 2015). According to Dellapiazza F. et al. (2019), children who exhibit sensory seeking behaviour have lower adaptive scores in all Vineland domains, particularly in socialization skills (Tomchek et al., 2015). Our findings suggest that a similar pattern of impairment in adaptive social skills is present in adults with ASD without cognitive impairment. The text stresses the importance of focusing on sensory stimuli and its impact on various aspects of an individual's life, including school, work, and

socialization. It highlights the need to improve the quality of life for individuals with ASD by addressing this issue. We identify several limitations in this study. First of all the sample is very small size. It need to investigate the effect on a sample bigger. In second place, correlation does not provide information about the direction of the changes. It is interesting to verify if the effect is influenced by the sensory profile. In addition, it would be interesting to include data on the levels of autistic symptoms and impairment in the various domains involved in the diagnosis of autism to understand which domain has the greatest impact on levels of adaptation and symptomatology. In our study, we only investigated the sensory level.

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## GENERATIONAL CONTINUITY: A STUDY ON EARLY MALADAPTIVE SCHEMAS PASSED FROM MOTHERS TO ADULT CHILDREN

**Ziřan řarođlu, & Melek Astar**

*Psychology, Fatih Sultan Mehmet Vakif University (Türkiye)*

### Abstract

This study aims to investigate the potential similarity between the early maladaptive schemas of mothers and their adult children and explore whether such similarity varies based on defense mechanisms and personality traits. To achieve these objectives, defense mechanisms (Mature Defense, Neurotic Defense, Immature Defense) and personality traits (extraversion, agreeableness, conscientiousness, emotional stability or neuroticism, and openness to experience) were examined, with each sub-dimension categorized into three levels: low, moderate, and high. A total of 318 participants, comprising 159 mothers ( $M = 48,58$ ,  $SD = 5,74$ ) and 159 children ( $M = 22,67$ ,  $SD = 3,92$ ) voluntarily participated in the study. Participants completed the Young Schema Questionnaire, Short Form 3 (YSQ-SF3), The Big Five-50 Personality Questionnaire (B5KT-50-Tr), Defense Style Questionnaire (DSQ-40), and a Demographic Data Form. Statistical analyses were conducted using SPSS 26. The Dependent Sample t-Test, considering the normal distribution of the difference series, was employed to assess the similarity between the schema scores of mothers and adult children. The results reveal a significant similarity in the domains of early maladaptive schemas between mothers and adult children ( $p < 0.05$ ). Additionally, certain schema domains showed differences in response to adult children's low level mature defense, moderate-level mature defense, moderate-level neurotic defense, high-level neurotic defense, moderate-level immature defense, high-level immature defense ( $p < .05$ ). Regarding personality traits, statistical differences were identified in various schema domains for extraversion, emotional stability, and openness to experience at each level. Notably, moderate agreeableness trait was associated with impaired boundaries and other-directedness; low conscientiousness trait with impaired autonomy and hypervigilance; and moderate conscientiousness trait with impaired boundaries and hypervigilance, all exhibiting statistical differences in schema domains ( $p < .05$ ).

**Keywords:** *Early maladaptive schema, defense mechanisms, five factor personality, schema transmission.*

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### 1. Introduction

Schemas are mental frameworks that are constantly used to perceive, interpretate and response to stimuli in the environment (Piaget, 1964; Beck, 1967; Young, 1999). Although schemas are a structure that positively supports a person's cognitive and emotional development, it is known that early maladaptive schemas significantly damage their functionality. Young et al. (2003) have made the most extensive explanation of the early maladaptive schemas. They defined early maladaptive schemas as 'repetitive, rigid mental patterns that start with childhood and continue to develop after, negatively affecting a person's cognition, emotions and memories in his relationship with himself and the other'. Adverse childhood experiences, unmet core emotional needs and emotional temperament constitute the origin of early maladaptive schemas (Young, 1999). As a result of examining these origins, it can be seen that parents have a significant influence on early maladaptive schemas of children. Moreover, it has suggested by some studies that thinking patterns of mothers and children are positively related to each other (Stark et al., 1996; Seligman, & Peterson, 1986). Thus, there are studies in the literature that show the relationship between the early maladaptive schema areas of parents and adult children (Macik et al., 2016; Sundag et al., 2018). In addition, different mechanisms such as adverse childhood experiences (Zeynel, & Uzer, 2020), defense mechanisms (Karaarslan et al., 2021) and parenting styles (Gibson, & Francis, 2019) were also indicated that explain the schema transmission. There are studies that examine the relationship between the big five personality traits, defense mechanisms and the early maladaptive schema domains (Sava, 2009; Thimm, 2010; Muris, 2006; Ekři et al., 2020; Walburg, & Chiaramello, 2015; Bashiri Nejadian et al., 2017; Price, 2007).

The aim of this study is to evaluate of the similarity relationship between the early maladaptive schemas of mother and adult children. In addition, it is aimed to examine the effect of children's defense mechanisms and personality traits in this similarity relationship.

## 2. Method

### 2.1. Participants

The research sample was selected by the purposeful sampling method. Although there were 160 mother and adult child pairs participating in the survey, as a result of the outlier analysis, 1 mother and adult child pair was excluded. Thus, 159 adult children (age ranged between 19 and 40 years;  $M = 22,67$ ,  $SD = 3,92$ ) and 159 mothers (age ranged between 38 and 66 years;  $M = 48,58$ ,  $SD = 5,74$ ) were evaluated.

### 2.2. Materials

In the study Young Schema Questionnaire, Short Form 3 (YSQ-SF3), The Big Five-50 Personality Questionnaire (B5KT-50-Tr), Defense Style Questionnaire (DSQ-40), and a Demographic Data Form were used.

### 2.3. Statistical analysis

Statistical analyses were conducted using SPSS 26 (statistical package for social science), including frequency analysis for demographic data and the calculation of descriptive statistics. The Paired Sample t-Test, considering the normal distribution of the difference series, was employed to assess the similarity between the schema scores of mothers and adult children. The significance value was accepted as  $p < ,05$ .

## 3. Results

As a result of the Kolmogorov-Smirnov analysis, it was founded that Young Schema Total Difference score, Impaired Limits Difference sub dimension showed a normal distribution. Since the result of analysis is not normally distributed in Disconnection and Rejection Difference, Impaired Autonomy and Performance Difference, Other-directedness Difference, Overvigilance and Inhibition Difference sub dimension scores, they were assumed to be normally distributed based on the analysis of Skewness and Kurtosis coefficients.

Table 1. Mother and Adult Child Young Scheme Total and Scheme Sub-Dimensions Difference Normality Test.

| Total scale                             | Kolmogorov-Smirnov |     |       | Skew.  | S     | Kurt. | S     |
|---|--------------------|-----|-------|--------|-------|-------|-------|
|   | Statistics         | sd  | p     |        |       |       |       |
| Young Schema Total Difference           | 0,044              | 159 | 0,200 | -0,81  | 0,192 | 0,495 | 0,383 |
| Disconnection and Rejection Difference  | 0,076              | 159 | 0,024 | 0,246  | 0,192 | 2,120 | 0,383 |
| Impaired Autonomy Difference            | 0,074              | 159 | 0,034 | 0,265  | 0,192 | 0,785 | 0,383 |
| Impaired Limits Difference              | 0,056              | 159 | 0,200 | -0,309 | 0,192 | 3,150 | 0,383 |
| Other-Directedness Difference           | 0,073              | 159 | 0,035 | -0,354 | 0,192 | 0,002 | 0,383 |
| Overvigilance and Inhibition Difference | 0,075              | 159 | 0,030 | 0,452  | 0,192 | 0,452 | 0,383 |

In the study the Paired Sample t-Test was used for defense mechanisms and personality traits, due to the normal distribution of the difference series of the schema sub-dimensions.

The Paired Sample t-Test results showed that for adult children who have the low level of Mature Defense; Impaired Autonomy scores of mothers and adult children are statistically different ( $t(19) = -3.772$ ;  $p < 0.01$ ); Disconnection and Rejection ( $t(19) = -0.526$ ;  $p > 0.05$ ), Impaired Limits ( $t(19) = -0.884$ ;  $p > 0.05$ ), Overvigilance and Inhibition ( $t(19) = -0.985$ ;  $p > 0.05$ ) and Other-directedness ( $t(19) = -0.463$ ;  $p > 0.05$ ) it was observed that there is no statistically significant difference. As a result of

the analyses conducted for children with moderate Mature Defense level, it was found that Impaired Autonomy ( $t_{(19)} = -1,742$ ;  $p < 0,05$ ), Other- Directedness ( $t_{(19)} = 4,202$ ;  $p < 0,001$ ) scores are statistically different; there was no difference in Disconnection and Rejection ( $t(19) = 0,582$ ;  $p > 0,05$ ), Impaired Limits ( $t(19) = -2,339$ ;  $p > 0,05$ ), Overvigilance and Inhibition ( $t(19) = -0,260$ ;  $p > 0,05$ ). In addition, analyzing for adult children with a high level of Mature Defense, no differences was observed in all schema sub-dimensions

The Paired Sample t-Test results showed that for adult children who have the low level of Neurotic Defense; there was no significant difference in all schema sub-dimensions of mothers and children. As a result of the analysis, adult children with a moderate Neurotic Defense level Impaired Limits ( $t(19) = -2,871$ ;  $p < 0,01$ ) and Other- directedness ( $t(19) = 0,387$ ;  $p < 0,001$ ) scores were found statistically different, while in Disconnection and Rejection ( $t(19) = 1,275$ ;  $p > 0,05$ ), Impaired Autonomy ( $t(19) = -1,544$ ;  $p > 0,05$ ) and Other- directedness ( $t(19) = -0,490$ ;  $p > 0,05$ ) schema sub-dimensions there was no significant difference.

The Paired Sample t-Test results showed that for adult children who have the low and moderate Immature Defense; there was no difference in all sub-dimensions except the Other- directedness ( $t(19) = -3,514$ ;  $p < 0,001$ ) for moderate immature defense. On the other hand, while in the high level of immature defense), Impaired Autonomy ( $t(19) = -3,132$ ;  $p < 0,05$ ), Impaired Limits ( $t(19) = -3,087$ ;  $p < 0,05$ ) scores were found statistically different, Disconnection and Rejection ( $t(19) = -1,264$ ;  $p > 0,05$ ), Overvigilance and Inhibition ( $t(19) = -1,068$ ;  $p > 0,05$ ) Other- directedness ( $t(19) = 0,879$ ;  $p > 0,05$ ) was observed that there is no statistical difference.

It was found that there was a difference in Impaired Autonomy ( $t(19) = -2,482$ ;  $p < 0,05$ ) Overvigilance and Inhibition ( $t(19) = -2,544$ ;  $p < 0,05$ ), Other- directedness ( $t(19) = 2,388$ ;  $p < 0,05$ ) scores for low level of extraversion personality; in Other- directedness ( $t(19) = -2,482$ ;  $p < 0,05$ ) scores for moderate extraversion personality; in Impaired Limits ( $t(19) = 0,368$ ;  $p < 0,05$ ) score for high level extraversion personality.

As result of the analysis adult children with Agreeableness Personality, it was found that there was a difference in Impaired Limits ( $t(19) = -2,799$ ;  $p < 0,05$ ), Other- directedness ( $t(19) = 3,776$ ;  $p < 0,001$ ) scores for moderate Agreeableness Personality.

As result of the analysis adult children with Conscientiousness Personality, it was found that there was a difference in Impaired Autonomy ( $t(19) = -2,453$ ;  $p < 0,05$ ), Overvigilance and Inhibition ( $t(19) = 2,268$ ;  $p < 0,05$ ) scores for low level of conscientiousness personality; Impaired Limits ( $t(19) = -2,956$ ;  $p < 0,05$ ), Overvigilance and Inhibition ( $t(19) = 2,745$ ;  $p < 0,05$ ) scores for moderate level of conscientiousness personality.

As result of the analysis adult children with Neuroticism Personality, it was found that there was a difference in Impaired Autonomy ( $t(19) = -2,925$ ;  $p < 0,05$ ) scores for low level of neuroticism personality; Impaired Limits ( $t(19) = -2,496$ ;  $p < 0,05$ ), Overvigilance and Inhibition ( $t(19) = -2,909$ ;  $p < 0,01$ ) scores for moderate level of neuroticism personality.

As result of the analysis adult children with Openness to Experience Personality, it was found that there was a difference in Overvigilance and Inhibition ( $t(19) = 2,787$ ;  $p < 0,01$ ) scores for low level of for low level of neuroticism personality; Impaired Autonomy ( $t(19) = -2,226$ ;  $p < 0,05$ ), Impaired Limits ( $t(19) = -2,455$ ;  $p < 0,05$ ) and Overvigilance and Inhibition ( $t(19) = 3,602$ ;  $p < 0,01$ ) scores for moderate level of neuroticism personality; Disconnection and Rejection ( $t(19) = 0,023$ ;  $p < 0,05$ ), Overvigilance and Inhibition ( $t(19) = -0,600$ ;  $p < 0,01$ ) scores for high level of neuroticism personality.

#### 4. Discussion

It was known that the parent is in a decisive position in the development of the child's early maladaptive schemas (Young et al., 2003; Muris, 2006; Thimm, 2010). It was considered inevitable that the parent, who has such a fundamental role, will have a direct or indirect influence on the child's schema areas of his own schema areas. However, it has been understood in the relevant literature that there is an extremely limited number of studies on the relationship between the early maladaptive schema areas of parents and adult children (Macik et al., 2016; Sundag et al., 2018). Based on this, it was aimed to examine the possibility of similarity between the early maladaptive schema areas of mothers and adult children, and also this relationship was studied with the adult children's personality traits and defense mechanisms.

According to the first hypothesis of the study, it was examined whether there is a similarity between the early maladaptive schemes of mothers and adult children. As a result of the analysis, in accordance with the findings in the literature, it was found that mothers and adult children were similar between the early maladaptive schemes.

Moreover, the effect of the adult child's personality traits and defense styles on the similarity of the mothers' and adult children's early maladaptive schema was revealed for some specific schema areas. As indicated in the relevant findings, the adult child's personality traits and defense mechanisms in the form of a level has a significant impact on the similarity between some schema areas of the mother and the adult child.

Besides the fact that this study makes important contributions to the literature, it is thought that there are some limitations of the study. The first of these limitations is that the study cannot explain any causal relationship due to the fact that it is a cross-sectional study. The number of women in the adult child sample is more than the number of men (88,1% women, 12,9% men). The fact that the sample group does not have a balanced distribution affects the generalizability of the study. Finally, it is known that the role of the father in raising children, as well as the mother, is undeniably important. It has also been stated that the father's contribution is a protective factor in early maladaptive schema transitions (Zeynel, & Uzer, 2020). For this reason, in future studies, the father can also be re-examined by adding him to the sample group.

This research examined schema and psychodynamic theories as a whole and indicated the relationship between them. It was thought that making use of the interaction of different theories to contribute to each other in theoretical and clinical applications would prepare the ground for the formation of a holistic perspective for future studies.

In addition, making sense of the schema transition will also help to understand pathological questions. Therefore, curative intervention in the parent's schemes is a preventive measure against incompatible schemes that may occur in the child.

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# SELF-HANDICAPPING IN ADULTS: RELATIONSHIP WITH PERFECTIONISM, SELF-CRITICAL RUMINATION AND METACOGNITIVE BELIEFS

Arzu Nur Manav, & Zeynep Temel

*Psychology, Fatih Sultan Mehmet Vakif University (Türkiye)*

## Abstract

Self-handicapping refers to an individual creating verbal or behavioral obstacles to their own performance, adversely impacting psychological well-being and potentially leading to maladaptive behaviors such as procrastination and substance abuse. Previous studies have highlighted that perfectionists, individuals prone to self-critical rumination, and those with negative metacognitions employ diverse strategies to avoid failure and negative self-evaluation. This study aims to investigate the influence of perfectionism, self-critical rumination, and metacognitions (including positive beliefs, uncontrollability and danger, cognitive confidence, the need to control thoughts, and cognitive self-consciousness) on self-handicapping in adults, as well as explore the interrelationships among these variables. A total of 351 participants, aged 18-65 ( $M = 29.39$ ,  $SD = 9.18$ ), voluntarily participated in the study. Data collection instruments included a socio-demographic information form, Self-Handicapping Scale (SHS), Almost Perfect Scale-Revised (APS-R), Self-Critical Rumination Scale (SCRS), and Metacognitions Questionnaire-30 (MCQ-30). Data were collected online employing Multiple Linear Regression models to identify predictors of the self-handicapping. The results revealed that self-handicapping scores were positively predicted by self-critical rumination subscale, maladaptive perfectionism subscale of APS-R, and uncontrollability and danger beliefs subscale of MCQ-30, while they were negatively predicted by adaptive perfectionism subscale of APS-R. The findings suggest that self-handicapping tendencies are influenced positively by self-critical rumination, maladaptive perfectionism, and beliefs related to uncontrollability and danger. Conversely, adaptive perfectionism has a negative predictive effect on self-handicapping. Given these findings, intervention strategies aimed at reducing self-handicapping behaviors should acknowledge the multifaceted nature of perfectionism, considering its maladaptive elements alongside the potential protective factors residing within its adaptive aspects. Furthermore, the significant role of metacognitive beliefs concerning uncontrollability and danger in self-handicapping has been observed.

**Keywords:** *Perfectionism, self-critical rumination, metacognitions, self-handicapping, MLR.*

## 1. Introduction

It is known that people try to avoid negative feedbacks by reflecting their self-concepts positively to feel satisfied and happy. (Sedikides, 1993; Taylor, & Brown, 1988). Self-handicapping is one of the strategies that focused on avoiding negative feedback. It is defined as creating an obstacle before performance. to provide an external cause for failure (Jones, & Berglas, 1978). It is seen that those who self-handicap uses these obstacles to blur the connection between their abilities and performances (Török, & Szabó, 2018). Just as a person can handicap himself by creating obstacles to performance, he can also talk about his physical or psychobiological conditions and attribute his failures to these symptoms instead of their inadequacies (Snyder & Smith, 1982, 1986). It is stated that Jones and Berglas (1978) used the reduction and augmentation principles of Kelley's attribution model to explain this phenomenon. According to these principles, a person does not want failure to be attributed to his or her abilities. For this reason, the person creates an obstacle where he/she cannot perform adequately. In case of failure, he/she attributes the cause of the failure to the obstacle. If he/she is successful, his/her abilities will be highlighted even more because he/she will have succeeded despite the obstacle. It helps protects or increases self-esteem (Jones, & Berglas, 1978). These strategies can be exemplified by a student not studying the night before the exam or an athlete expressing the discomfort he feels before the sports competition starts (Török et al., 2016). However, it is known that people who self-handicapping use a

variety of excuses, from harmful health practices to incompetent problem-solving attempts (Zuckerman, & Tsai, 2005). Therefore, it is emphasized by Zuckerman et al. (1988) that the cumulative effect of using these strategies will be negative in the long term.

The research conducted by Warner and Moore (2004) revealed that people who self-handicap use more dysfunctional coping strategies and people are handicapping themselves for the purpose of preventing negative affects of rumination. It is emphasized that content of ruminations is important in explaining the specific symptoms that are characterized by many different psychological problems or disorders (Smart et al, 2016). By the light of this information, it is thought that, in our research, determining the one of the contents of rumination that increases self-handicapping; contribute to improve interventions for its treatment. One of the phenomena that focuses on specific content of rumination is self-critical rumination. It is stated that self-criticism, which becomes ruminative, turns into a more serious problem (Smart et al., 2016). Besides Self-criticism found relational with self handicapping in study of Yavuzer (2015), and rumination are known in relation with self-handicapping (Warner, & Moore, 2004); the relationship between of self-critical rumination and self-handicapping is unknown due to the lack of any research on literature.

Considering the psychological distress, they experience in the face of failure, it appears that self-handicapping is one of the strategies that perfectionists use to avoid negative consequences of failure (Kearns et al., 2008). It is stated by Kearns et al. (2008) that perfectionism goes hand in hand with the concept of self-handicapping. Considering this relationship; to reduce self-handicapping, interventions addressing perfectionistic personality tendencies and cognitions appear important. In addition, it is thought that elaborating the relationship between maladaptive and adaptive perfectionism and self-handicapping would be useful in specifying intervention areas. (Kearns et al., 2008).

Perfectionism and self-critical rumination are desired to be investigated as variables that can help us explain self-handicapping. In addition, although there are different opinions, it is seen that a cognitive theory or framework that explains self-handicapping has not yet been established in the literature, and the frameworks that are tried to be created are either based only on perfectionism. For this reason, it is thought that an explanation of self-handicapping can be provided by the S-REF Model developed by Matthews and Wells (2003), which tries to explain how metacognitions predict psychological disorders. At this point, it seems that there are not ant studies explaining the relationship between self-handicapping and metacognitive beliefs, which are widely researched in the literature. It is thought that seeing whether the metacognitive beliefs that play a role in the S-REF model are in any relationship with self-handicapping, may help us to create a cognitive frame for self-handicapping both for better understanding and treatment.

## 2. Design

This study aims to reveal the relationships between self-handicapping tendencies and perfectionism, self-critical rumination and metacognitive beliefs in adults. In the study, correlational research design was used for this purpose. The relationships between variables were examined without any manipulation or influence.

## 3. Methods

### 3.1. Participants

The study group of the research consists of adults between the ages of 18-65 who reached our form through social media. The data of the study were obtained from 352 volunteer participants via snowballing method. The ages of the participants ranged from 18 to 64 ( $\bar{X}$  =29.39, S.D.=9.18, Mode=24).

It is seen that 294 (82.8%) of the participants in the research are women and 58 (16.3%) are men. 3 participants (0.8%) do not identify as male or female. 53 (14.9%) of the participants are aged 18-20, 172 (48.5%) are aged 21-30, 79 (22.3%) are aged 31-40, 43 (12.1%) are aged 41-50, 7 It is seen that 2% of them are between the ages of 51-60 and 1 (0.3%) is between the ages of 61-65. At the same time, 140 (39.4%) of the participants are married and 215 (60.6%) are single. Regarding education levels, there are 11 (3.1%) participants at the primary level, 44 (12.4%) at the high school level, 261 (73.5%) at the University level, and 39 (11%) at the Postgraduate level. Of the 355 participants, 157 (44.2%) appear to be working and 91 (25.6%) are not working. 95 (26.8%) of them are students who are not working in any job, and 12 (3.4%) are working students.

### 3.2. Scales

Data were collected by, the Demographic Information Form prepared by the researcher, Self-Handicapping Scale, Almost Perfect Scale-Revised, Self-Critical Rumination Scale and Metacognitions Questionnaire-30 were used.

### 3.3. Statistical analysis

SPSS (Statistical Package for the Social Sciences) version 27 was used for data analysis. The cases were assumed to be normally distributed and Pearson Correlation Analysis was performed to examine the relationship between the dependent variable, self-handicapping total score, and other scale subscales and total scores. Subsequently, Multiple Linear Regression Models were used to examine the effects of perfectionism sub-dimensions, self-critical rumination and metacognitive beliefs sub-dimension scores on self-handicapping scores. The significance value was accepted as  $p < .05$ .

## 4. Results

According to the results of the Multiple Linear Regression Analysis Model, the fixed parameter ( $t(346) = 22.754$ ;  $p < 0.001$ ); and The slope parameters of the scores of Self-critical Rumination ( $t(346) = 6.941$ ;  $p < 0.001$ ), Maladaptive Perfectionism ( $t(346) = 6.450$ ;  $p < 0.001$ ), Adaptive Perfectionism ( $t(346) = 6.710$ ,  $p < 0.001$ ) and Uncontrollability and Danger ( $t(346) = 3.598$ ;  $p < 0.001$ ) were found to be statistically significant. According to the F test results performed to determine whether the model is generally significant or not ( $F(4,346) = 91.427$ ;  $p < 0.001$ ), it was concluded that the model was statistically significant and the coefficient of determination was 0.525. According to this result, approximately 53% of the participants' Self-Handicapping Scores are explained by Self-Critical Rumination, Maladaptive Perfectionism, Adaptive Perfectionism and Uncontrollability and Danger scores. According to these results, when other scores are kept constant; A 1-unit increase in the Self-Critical Rumination score increases the Self-Handicapping score by 0.651 units; A 1-unit increase in the Maladaptive Perfectionism score will increase the Self-Handicapping score by 0.255 units, a 1-unit increase in the Uncontrollability and Dangerscore will increase the Self-Handicapping score by 0.457 units, and a 1-unit increase in the Adaptive Perfectionism score will decrease the Self-Handicapping by 0.331 units.

Table 1. Multiple Linear Regression Analysis Results for the Prediction of Self-Handicapping Scale Scores by Perfectionism, Self-Critical Rumination and Metacognitive Beliefs Variables.

| Bağımsız Değişkenler         | B      | B' nin Standart Hatası | Beta   | t         | R <sup>2</sup> | F         |
|------------------------------|--------|------------------------|--------|-----------|----------------|-----------|
| Self-Critical Rumination     | 0,651  | 0,094                  | 0,370  | 6,941***  |                |           |
| Maladaptive Perfectionism    | 0,255  | 0,040                  | 0,331  | 6,45***   |                |           |
| Adaptive Perfectionism       | -0,331 | 0,049                  | -0,275 | -6,71***  | 0,525          | 91,427*** |
| Uncontrollability and Danger | 0,457  | 0,127                  | 0,179  | 3,598***  |                |           |
| Sabit (a)                    | 65,034 | 2,858                  | -      | 22,754*** |                |           |

\* $p < 0,05$ ; \*\* $p < 0,01$ ; \*\*\* $p < 0,001$

## 5. Discussion

Previous studies indicate that an increase in the level of self-criticism, appears to be associated with higher self-handicapping and self-handicapping can be reduced with the use of cognitive behavioral techniques (Yavuzer, 2015). Also, Zuckerman's (1998) research states that self-handicapping is designed to protect oneself against the negative effects of rumination. Since self-critical rumination is a new concept, It is only possible to see any relation of it with self handicapping through rumination or self-criticism (Warner, & Moore, 2004). In our study, self-critical rumination, was found as an important variable predicting self-handicapping.

In a study conducted with university students, it was shown that maladaptive perfectionism positively predicted self-handicapping (Özlu et al., 2020). Likewise, it was found by Sherry et al. (2001) that individuals who exhibit high levels of maladaptive perfectionism are more likely to engage in self-handicapping behaviors. The other result of our research is that; maladaptive perfectionism is a positive predictor of self-handicapping strategies which supports the relevant results.

It is stated in the research of Firoozi et al. that positive (adaptive) perfectionism has a negative relationship with self-handicapping (2015) and Török et al.'s (2022) study exemplify the result we found in our study by showing that perfectionist strivings, which are considered to be adaptive perfectionist characteristics, are negatively related to self-handicapping. Consistent with these findings, our study shows that adaptive perfectionism negatively predicts self-handicapping, which is in line with our expectations and the literature.

One of the findings that guided our research was that only one of the five sub-dimensions covering metacognitive beliefs was related to self-handicapping. The results indicate that there is a positive prediction between Self-handicapping and Uncontrollability and Danger sample, and that other sub-dimensions do not have a predictive effect; It is thought that it will contribute to the literature in terms of specifying the metacognitive beliefs that should be focused on when working with self-handicapping. No other research has been found in the literature that directly demonstrates the relationship between metacognitions and self-handicapping. However, it can be stated that our result is consistent with and exemplifies this finding: Beliefs of uncontrollability and danger are thought to be of particular importance in psychological dysfunction because they lead to a feeling of loss of control of thinking and a sense of threat arising from cognition itself (Capobianco et al., 2020).

In our study, with the inclusion of sub-dimensions of independent variables, it was possible to determine more specific predictors of self-handicapping. Given this new findings from our study, adapting and expanding interventions for self-critical rumination would be beneficial for helping clients with self-handicapping strategies. Besides our study provide support for intervention strategies that focused on perfectionism in the treatment of self-handicapping, the importance of intervening by separating the adaptive and maladaptive aspects of perfectionism was emphasized. Accordingly, intervention strategies should aimed to reduce maladaptive perfectionism, considering its positive relationship and acknowledge higher level of adaptive perfectionist properties may be protective factors while considering its negative relationship with self-handicapping. The results provide the possibility of expanding cognitive behavioral interventions that can be used in the treatment of self-handicapping. Furthermore, the significant role of metacognitive beliefs concerning uncontrollability and danger in self-handicapping has been observed. Considering the relationship between self-handicapping and self-critical rumination, related metacognitive belief, adaptive and maladaptive perfectionism; Metacognitive Therapy techniques may provide better intervention strategies aiming to reduce self-handicapping.

The given study has some limitations. First of all, the snowball sampling technique chosen as the data collection method prevents the generalization of the results for the entire population. The fact that the majority of the sample consisted of women and the participation of more people with university education made it difficult to represent the population. No information regarding the clinical characteristics of the participants was collected at the beginning of the study. Taking into account the clinical history of the participants may help understand the relationship between self-handicapping and psychopathologies in future studies. Since it is not an experimental study, it does not present a cause-effect relationship.

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## MMPI-A TEMPORAL STABILITY STUDY IN TWO SAMPLES OF PORTUGUESE ADOLESCENTS, WITH AND WITHOUT CLINICAL COMPLAINTS

Maria João Santos<sup>1</sup>, Maria João Afonso<sup>1</sup>, & Rosa Novo<sup>1,2</sup>

<sup>1</sup>Faculty of Psychology, University of Lisbon (Portugal)

<sup>2</sup>CICPSI (Research Center for Psychological Science) (Portugal)

### Abstract

The present research is a temporal stability study of the Portuguese version of the Minnesota Multiphasic Personality Inventory for Adolescents (MMPI-A; Silva et al., 2006). This personality and psychopathology inventory, the Portuguese adaptation of the original version (MMPI-A; Butcher et al., 1992), was approved by the University of Minnesota Press. This work analysed the temporal stability of the personality and psychopathology measures provided by the MMPI-A, namely the Validity, Clinical, Content and Supplementary scales stability, in two samples contrasted by the participants' clinical condition. The study followed a repeated measures design, with a 7-day average interval between administrations. The overall sample included 146 participants aged between 14 and 18 years ( $M = 17.09$ ;  $SD = 1.33$ ) organized in two samples: a) Non-clinical Complaints sample ( $N = 62$ ), including 11 males and 51 females; b) Clinical Complaints sample ( $N = 84$ ), including 11 males and 73 females. The MMPI-A was administered in small groups and individual sessions, after informed consent by the participants, or their legal representatives, when under 18. Descriptive statistics ( $M$  and  $SD$ ), Pearson correlation coefficients ( $r_{tt}$ ), and paired-samples t-tests were used on five Validity scales, ten basic Clinical scales, fifteen Content scales, and six Supplementary scales. The temporal stability indices ( $r_{tt}$ ) revealed highly significant values ( $p < .001$ ), for all scales, in both samples. In the Non-clinical sample, the  $r_{tt}$  coefficients for the Validity scales varied between .83 and .90, for the Clinical scales, between .75 and .95, for the Content scales, between .75 and .93, and for the Supplementary scales, between .77 and .89. As for the Clinical sample,  $r_{tt}$  indices for the Validity scales varied between .75 and .91, for the Clinical scales between .70 and .92, for the Content scales, between .69 and .91, and for the Supplementary scales, between .75 and .88. Despite the high temporal stability indices, statistically significant differences were found between administrations, in a few scales. As should be expected, the MMPI-A Portuguese version's measures revealed good to very good temporal stability, within a one-week interval between assessments, both in non-clinical and clinical samples of Portuguese adolescents.

**Keywords:** MMPI-A, temporal stability, test-retest, adolescent clinical sample, adolescent non-clinical sample.

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### 1. Introduction

Within the domain of Clinical Assessment, the present paper presents psychometric evidence for the Portuguese version of a multidimensional personality and psychopathology instrument: the MMPI-A (Butcher et al., 1992). This is one of the most internationally used in the psychological assessment of adolescents, especially in clinical (Archer, 2005) and forensic (Archer, et al., 2006) contexts. The results herein presented constitute a part of a larger project, aiming the adaptation and psychometric study of the MMPI-A in Portugal, considering the growing need for theoretically sound and psychometrically updated assessment tools, specifically conceived and improved for adolescent populations.

In the domain of psychological assessment, questionnaires and self-report instruments are widely used and play an essential role in personality and psychopathology evaluation. The Minnesota Multiphasic Personality Inventory – Adolescent (MMPI-A; Butcher et al., 1992) is used as a reference since the nineties, in different contexts, aiming at problem identification, diagnosis, and treatment planning. The MMPI-A can be described as a self-report personality and psychopathology inventory, that can be administered individually or in small groups to teenagers aged 14 to 18. The MMPI-A was

specifically constructed for adolescents, departing from the methodology used to develop the original MMPI designed for adults. It includes 478 true/false items organized into a diversity of scales assessing multiple dimensions, both of normal personality and of psychological and personality disorders. The MMPI-A has several Validity scales to detect response attitude patterns, such as defensiveness or responding inconsistency. The primary Clinical scales are the same as those included in the original MMPI and MMPI-2, and thus include: Hypochondriasis, Depression, Hysteria, Psychopathic Deviate, Masculinity-Femininity, Paranoia, Psychasthenia, Schizophrenia, Hypomania, and Social Introversion. Additionally, the instrument comprises several Content and Supplementary scales (Archer & Krishnamurthy, 2002).

Since personality traits and psychopathology stand out in research as stable and consistent psychological manifestations over short periods of time (Harris et al., 2016), their assessment must be consistent (reliable), displaying independence from error due to the moment or occasion of administration. Therefore, correlations between two occasions (test-retest) should be positive and highly significant, confirming the results' temporal stability, and few differences are expected for the measures, between the test and the retest mean values, over relatively short periods of time. This approach to stability is particularly important for an inventory used to identify psychological disorders or psychopathology when clinical complaints are present. The comparison of temporal stability indicators between samples with and without clinical complaints may, then, contribute to support the use of the MMPI-A for the assessment of personality and psychopathology in the whole adolescent population.

## 2. Objectives

With the aim of carrying out a reliability study of the MMPI-A in the Portuguese population, this paper presents temporal stability evidence for the personality and psychopathology measures provided by the MMPI-A, namely, the Validity, Clinical, Content and Supplementary scales, in two samples contrasted by the participants' clinical condition.

## 3. Methods

### 3.1. Participants

The overall sample included 146 participants aged between 14 and 18 ( $M = 17.09$ ;  $SD = 1.33$ ) and was organized in two samples: a) Non-clinical Complaints sample ( $N = 62$ ), including 11 males (17,7%) and 51 females (82,3%) ( $M = 17.11$ ,  $SD = 1.29$ ); b) Clinical Complaints sample ( $N = 84$ ), including 11 males (13,1%) and 73 females (86,9%) ( $M = 17.07$ ,  $SD = 1.36$ ).

As inclusion criterion for the Clinical sample, to be attending (or have attended before) psychological and/or psychiatric consultation services were considered, as reported by the participants in the MMPI-A Biographical Data sheet.

### 3.2. Instrument

The Portuguese adaptation (Silva et al., 2006) of the Minnesota Multiphasic Personality Inventory-Adolescent (MMPI-A; Butcher et al., 1992) is the object of this reliability study. It provides an array of Validity and Clinical scales, alongside some Content and Supplementary scales. The temporal stability analysis addressed these four groups of scales, including a total of 36 measures.

The scales raw scores are converted into uniform T-scores ( $M = 50$ ;  $SD = 10$ ) for eight of the MMPI-A basic scales (excluding scales 5 and 0) and, in general, a  $T \geq 65$  is considered clinically significant for these scales. The same procedure is used in the Content scales. For the Validity and the Supplementary scales, linear T scores are used.

### 3.3. Procedure

After approval by an ethical committee, this study followed a repeated measures design, with a 7-day average interval between administrations. The MMPI-A was administered in small groups or individual sessions, following the informed consent by the participants, or their legal representatives, when under 18.

The administrations were carried out by clinical psychologists, properly trained and following clear guidelines for administration setup and instructions. To avoid intentional efforts to memorize items or answers, in the first administration no information was given about the instrument to be replied in the second administration.

## 4. Results

Descriptive statistics ( $M$  and  $SD$ ), Pearson correlation coefficients ( $r_{tt}$ ), and paired-samples t-tests were used on the five Validity scales, ten basic Clinical scales, fifteen Content scales and six Supplementary scales, in the two samples' data. The results are presented in Table 1.



Table 1. Descriptive Statistics, Test-retest Correlations and Paired-Samples Comparisons between the T-scores (M = 50; SD = 10), for the Non-clinical and Clinical Complaints samples.

|                             | Non-clinical Complaints sample (N = 62) |       |        |       |                |                 |                  | Clinical Complaints sample (N = 84) |       |        |       |                |                 |                  |
|-----------------------------|---|-------|--------|-------|----------------|-----------------|------------------|-------------------------------------|-------|--------|-------|----------------|-----------------|------------------|
|                             | Test                                    |       | Retest |       | t<br>(df = 61) | r <sub>tt</sub> | SEM <sup>a</sup> | Test                                |       | Retest |       | t<br>(df = 83) | r <sub>tt</sub> | SEM <sup>a</sup> |
|                             | M                                       | SD    | M      | SD    |                |                 |                  | M                                   | SD    | M      | SD    |                |                 |                  |
| <b>Validity Scales</b>      |   |       |        |       |                |                 |                  |                                     |       |        |       |                |                 |                  |
| <b>L</b>                    | 57.48                                   | 11.03 | 58.74  | 11.22 | -1.54          | .83***          | 4.07             | 52.60                               | 8.04  | 52.60  | 9.32  | 0.00           | .75***          | 5.02             |
| <b>F</b>                    | 46.02                                   | 6.16  | 45.23  | 6.74  | 2.09*          | .90***          | 3.21             | 54.57                               | 8.46  | 54.39  | 9.25  | 0.44           | .91***          | 2.93             |
| <b>F1</b>                   | 45.73                                   | 6.92  | 44.68  | 7.74  | 2.05*          | .86***          | 3.81             | 54.26                               | 8.89  | 53.27  | 9.39  | 2.08*          | .89***          | 3.35             |
| <b>F2</b>                   | 46.61                                   | 6.06  | 46.29  | 6.46  | 0.79           | .87***          | 3.59             | 54.35                               | 9.09  | 54.68  | 9.81  | -0.62          | .87***          | 3.62             |
| <b>K</b>                    | 52.37                                   | 9.18  | 53.94  | 10.39 | -2.33*         | .86***          | 3.73             | 47.96                               | 8.00  | 46.23  | 7.94  | 3.37**         | .82***          | 4.20             |
| <b>Clinical Scales</b>      |   |       |        |       |                |                 |                  |                                     |       |        |       |                |                 |                  |
| <b>1.Hs</b>                 | 47.82                                   | 7.72  | 44.87  | 8.03  | 5.54***        | .86***          | 3.76             | 66.24                               | 11.31 | 63.65  | 12.44 | 3.61***        | .85***          | 3.85             |
| <b>2.D</b>                  | 57.05                                   | 8.92  | 54.92  | 8.54  | 2.84**         | .77***          | 4.78             | 72.99                               | 9.07  | 71.65  | 10.36 | 1.80           | .76***          | 4.86             |
| <b>3.Hy</b>                 | 49.55                                   | 8.61  | 47.60  | 9.04  | 3.12**         | .85***          | 3.94             | 65.71                               | 12.08 | 63.29  | 13.39 | 3.30**         | .87***          | 3.67             |
| <b>4.Pd</b>                 | 46.82                                   | 7.62  | 45.29  | 6.19  | 2.70**         | .81***          | 4.36             | 56.90                               | 9.17  | 55.82  | 9.96  | 1.64           | .80***          | 4.44             |
| <b>5.Mf</b>                 | 47.73                                   | 9.12  | 47.34  | 9.08  | 0.59           | .84***          | 4.00             | 47.23                               | 11.27 | 46.57  | 10.62 | 0.96           | .84***          | 4.03             |
| <b>6.Pa</b>                 | 48.15                                   | 8.03  | 46.23  | 8.61  | 2.63*          | .76***          | 4.86             | 59.13                               | 9.60  | 57.01  | 10.83 | 2.45*          | .70***          | 5.44             |
| <b>7.Pt</b>                 | 48.42                                   | 7.44  | 47.73  | 8.99  | 1.25           | .88***          | 3.54             | 66.63                               | 10.51 | 66.36  | 10.82 | 0.46           | .87***          | 3.59             |
| <b>8.Sc</b>                 | 44.71                                   | 8.40  | 43.21  | 8.96  | 4.04***        | .95***          | 2.35             | 59.61                               | 11.50 | 58.23  | 12.31 | 2.25*          | .89***          | 3.32             |
| <b>9.Ma</b>                 | 44.05                                   | 7.00  | 43.98  | 6.83  | 0.10           | .75***          | 4.99             | 49.12                               | 10.24 | 49.88  | 10.50 | -1.13          | .82***          | 4.22             |
| <b>0.Si</b>                 | 53.60                                   | 10.15 | 53.56  | 10.91 | 0.06           | .93***          | 2.68             | 62.83                               | 9.70  | 62.70  | 9.56  | 0.31           | .92***          | 2.83             |
| <b>Content Scales</b>       |   |       |        |       |                |                 |                  |                                     |       |        |       |                |                 |                  |
| <b>A-anx</b>                | 49.92                                   | 8.03  | 49.29  | 9.28  | 0.80           | .75***          | 4.98             | 69.01                               | 9.65  | 67.55  | 10.67 | 1.67           | .69***          | 5.57             |
| <b>A-obs</b>                | 48.82                                   | 8.27  | 48.19  | 9.10  | 0.89           | .80***          | 4.48             | 61.10                               | 10.37 | 62.52  | 10.67 | -1.93          | .79***          | 4.55             |
| <b>A-dep</b>                | 48.65                                   | 8.32  | 47.08  | 9.21  | 2.87**         | .89***          | 3.39             | 62.07                               | 11.35 | 62.60  | 12.30 | -0.91          | .90***          | 3.13             |
| <b>A-hea</b>                | 47.95                                   | 7.40  | 45.03  | 7.59  | 5.61***        | .85***          | 3.86             | 63.81                               | 11.54 | 61.43  | 11.78 | 3.27**         | .84***          | 4.05             |
| <b>A-aln</b>                | 47.97                                   | 8.44  | 46.53  | 8.52  | 2.23*          | .82***          | 4.22             | 57.61                               | 10.42 | 58.23  | 11.54 | -0.94          | .85***          | 3.85             |
| <b>A-biz</b>                | 44.76                                   | 8.09  | 42.05  | 7.47  | 5.67***        | .89***          | 3.38             | 54.63                               | 10.60 | 51.89  | 10.32 | 4.36***        | .85***          | 3.89             |
| <b>A-ang</b>                | 45.44                                   | 9.34  | 44.16  | 10.93 | 1.71           | .84***          | 3.96             | 52.32                               | 10.39 | 54.73  | 11.93 | -2.91**        | .78***          | 4.70             |
| <b>A-cyn</b>                | 46.29                                   | 8.16  | 47.06  | 9.58  | -1.00          | .77***          | 4.76             | 49.83                               | 8.40  | 52.06  | 10.73 | -2.83**        | .74***          | 5.09             |
| <b>A-con</b>                | 41.94                                   | 7.12  | 41.81  | 7.49  | 0.31           | .90***          | 3.16             | 45.67                               | 8.34  | 46.90  | 9.57  | -2.29*         | .86***          | 3.80             |
| <b>A-lse</b>                | 49.24                                   | 8.48  | 48.08  | 9.87  | 1.57           | .81***          | 4.36             | 62.57                               | 13.02 | 62.94  | 13.18 | -0.46          | .84***          | 4.01             |
| <b>A-las</b>                | 46.95                                   | 8.70  | 46.11  | 8.75  | 1.10           | .76***          | 4.88             | 51.92                               | 10.14 | 52.65  | 10.53 | -1.14          | .84***          | 4.04             |
| <b>A-sod</b>                | 53.10                                   | 13.01 | 52.94  | 13.45 | 0.26           | .93***          | 2.65             | 60.26                               | 11.80 | 60.46  | 12.46 | -0.32          | .89***          | 3.33             |
| <b>A-fam</b>                | 45.15                                   | 8.61  | 44.06  | 8.61  | 2.36*          | .91***          | 2.97             | 53.25                               | 11.10 | 52.92  | 11.83 | 0.62           | .91***          | 3.02             |
| <b>A-sch</b>                | 44.56                                   | 6.80  | 44.69  | 7.38  | -0.26          | .85***          | 3.90             | 52.46                               | 11.11 | 52.27  | 10.82 | 0.37           | .91***          | 3.07             |
| <b>A-trt</b>                | 47.13                                   | 9.45  | 46.02  | 9.32  | 1.68           | .85***          | 3.94             | 59.73                               | 14.87 | 60.23  | 15.64 | -0.56          | .86***          | 3.80             |
| <b>Supplementary Scales</b> |   |       |        |       |                |                 |                  |                                     |       |        |       |                |                 |                  |
| <b>MAC-R</b>                | 47.50                                   | 8.33  | 46.61  | 8.08  | 1.25           | .77***          | 4.81             | 50.92                               | 8.97  | 51.82  | 9.55  | -1.25          | .75***          | 5.05             |
| <b>ACK</b>                  | 43.53                                   | 7.00  | 42.79  | 6.91  | 1.34           | .80***          | 4.44             | 50.33                               | 9.35  | 50.24  | 9.44  | 0.19           | .88***          | 3.46             |
| <b>PRO</b>                  | 45.97                                   | 7.10  | 44.71  | 7.33  | 2.48*          | .85***          | 3.91             | 50.49                               | 8.59  | 50.40  | 9.66  | 0.17           | .88***          | 3.41             |
| <b>IMM</b>                  | 43.35                                   | 6.86  | 42.61  | 7.45  | 1.39           | .83***          | 4.14             | 52.20                               | 9.32  | 52.44  | 9.70  | -0.48          | .88***          | 3.41             |
| <b>R</b>                    | 55.76                                   | 10.28 | 55.16  | 9.94  | 0.77           | .82***          | 4.27             | 55.69                               | 10.11 | 54.45  | 9.52  | 1.95           | .83***          | 4.18             |
| <b>A</b>                    | 49.56                                   | 8.14  | 48.16  | 9.04  | 2.73**         | .89***          | 3.26             | 62.21                               | 7.89  | 62.17  | 7.99  | 0.11           | .87***          | 3.55             |

Note. **Validity Scales:** L = Lie; F = Infrequency; F1 = Infrequency 1; F2 = Infrequency 2; K = Defensiveness. **Clinical Scales:** 1.Hs = Hypochondriasis; 2.D = Depression; 3.Hy = Hysteria; 4.Pd = Psychopathic Deviate; 5.Mf = Masculinity / Femininity; 6.Pa = Paranoia; 7.Pt = Psychasthenia; 8.Sc = Schizophrenia; 9.Ma = Hypomania; 0.Si = Social Introversion. **Content Scales:** A-anx = Anxiety; A-obs = Obsessiveness; A-dep = Depression; A-hea = Health Concerns; A-aln = Alienation; A-biz = Bizarre Mentation; A-ang = Anger; A-cyn = Cynicism; A-con = Conduct Problems; A-lse = Low Self-Esteem; A-las = Low Aspirations; A-sod = Social Discomfort; A-fam = Family Problems; A-sch = School Problems; A-trt = Negative Treatment Indicators. **Supplementary Scales:** MAC-R = MacAndrew-Revised; ACK = Alcohol / Drug Problem Acknowledgement; PRO = Alcohol / Drug Problem Proneness; IMM = Immaturity; A = Anxiety; R = Repression.

<sup>a</sup> SEM: Standard Error of Measurement.

\**p* < .05. \*\**p* < .01. \*\*\**p* < .001.

The temporal stability coefficients (*r<sub>tt</sub>*) revealed highly significant values (*p* < .001) for all scales, in both samples. Also in both samples, all but one of the coefficients were above .68, more than 50% of the coefficients (about twenty scales) were above the .85 threshold (Aiken & Growth-Marnat, 2006), and

about 15% were even above the .90 criterion (Gregory, 2015). In the Non-clinical Complaints sample, the  $r_{tt}$  coefficients for the Validity scales varied between .83 and .90, for the Clinical scales, between .75 and .95, for the Content scales, between .75 and .93, and for the Supplementary scales, between .77 and .89. As for the Clinical Complaints sample,  $r_{tt}$  indices for the Validity scales varied between .75 and .91, for the Clinical scales between .70 and .92, for the Content scales, between .69 and .91, and for the Supplementary scales, between .75 and .88. As a result of the high test-retest correlations, the standard error of measurement indices is relatively low when compared to the standard deviation of the T scores distribution ( $Mdn = 4$  for both the non-clinical and clinical samples).

Despite the high temporal stability indices, statistically significant differences between administrations were found, only in a few scales, less than a half of the measures. In both samples, the second administration means were slightly lower than the first in the F and F1 Validity Scales (Infrequency), but only significantly in the Non-clinical sample, for the F scale. The opposite was observed for the K scale (Defensiveness) in the Non-clinical Complaints sample, but not in the Clinical Complaints sample, where the mean value of this scale significantly decreases in the second administration.

In the basic Clinical scales, a tendency was detected for the means to decrease, from the first to the second administration. In scales 1.Hs (Hypochondriasis), 2.D (Depression), 3.Hy (Hysteria), 4.Pd (Psychopathic Deviate), 6.Pa (Paranoia), and 8.Sc (Schizophrenia), significant differences were found between the two administrations in the Non-clinical Complaints sample, and in scales 1.Hs (Hypochondriasis), 3.Hy (Hysteria), 6.Pa (Paranoia), and 8.Sc (Schizophrenia), in the Clinical Complaints sample. For the Content scales, significant decreases revealed in A-dep (Depression), A-hea (Health Concerns), A-aln (Alienation), A-biz (Bizarre Mentation), and A-fam (Family Problems), in the Non-clinical Complaints sample, while in the Clinical Complaints sample, there were significant decreases in A-hea (Health Concerns) and A-biz (Bizarre Mentation), like in the Non-clinical Complaints sample, while some increases were found, for A-ang (Anger), A-cyn (Cynicism), and A-con (Conduct Problems). Finally, in the Supplementary scales, few significant differences between administrations were found, only decreases for the Non-clinical Complaints sample, specifically in the PRO (Alcohol / Drug Problem Proneness) and A (Anxiety) scales.

## 5. Discussion

The test-retest coefficients confirmed high temporal stability for all the 36 scales studied, leading to conclude that they provide reliable results, according to the psychometric literature requirements (AERA, APA & NCME, 2014; Aiken & Growth-Marnat, 2006; Gregory, 2015) and considering the expected consistency for a week interval, in the type of psychological constructs involved. Furthermore, since the results were of a similar magnitude in both samples, it may be concluded that the Portuguese version of the MMPI-A can be considered a highly reliable psychological measure, in what concerns the temporal error effect, both for adolescents with and without clinical complaints.

The range of the test-retest coefficients in the basic Clinical Scales (from .75 to .95 in the sample without clinical complaints, and from .70 to .92 in the sample with clinical complaints) are similar but slightly higher to those found in the original MMPI-A, since the test-retest correlations for these scales ranged between .65 (6.Pa) and .84 (0.Si) (Butcher et al., 1992). In a study with the Spanish version of the MMPI-A (Zubeidat, et al., 2011), the test-retest coefficients in the Clinical Scales varied from .71 (3.Hy) to .92 (7.Pt), in the Content Scales, from .82 (A-obs) to .91 (A-sod), and in the Supplementary Scales from .78 (MAC-R) to .81 (R). These results are very similar to those found in the present study.

Only a few differences in the paired-samples comparisons were observed in both samples, in less than half of the scales (15 and 11 scales out of 36, respectively, in the non-clinical and the clinical samples), generally representing a decrease from the first to the second administration. In the Clinical Scales, very significant decreases were found for Hypochondriasis (1.Hs) and Schizophrenia (8.Sc), and also significant results for Depression (2.D), Hysteria (3.Hy), Psychopathic Deviate (4.Pd), and Paranoia (6.Pa) scales, in the non-clinical sample. In the same way, significant decreases were detected in the sample with clinical complaints, for similar scales: Hypochondriasis (1.Hs), Hysteria (3.Hy), Paranoia (6.Pa), and Schizophrenia (8.Sc) scales. Somehow, response attitudes may impact the Clinical Scales results, thus the interpretation of these findings, especially on those scales with more items requesting the recognition of symptoms, must consider the change in response attitude between administrations. Even though the Infrequency scale (F) presented a statistically significant decrease only in the non-clinical sample, in both samples a tendency seemed to emerge in means for the lowering of the reporting of problems and difficulties, in the second administration (alongside with an increase of the K “defensiveness” scale, although only for the non-clinical sample). Then, the differences in response attitude are more pronounced in the non-clinical sample, which is the one where more significant

decreases were observed in clinical measures. While the mean differences are generally positive, depicting a decrease in reported symptoms and difficulties, it also suggests that familiarity with the inventory content may lead participants to minimize, in a second assessment moment, the experience of psychological problems and symptoms. It is noteworthy, in this context, the higher temporal stability of the mean results observed in the Clinical Complaints sample (less than one third of the scales displaying statistically significant differences).

In the Content scales, some differences between the two administrations were also found in both samples, but this time significant increases revealed in the “acting out” scales Anger (A-ang) and Conduct Problems (A-con), and in Cynicism (A-cyn), only for the Clinical Complaints sample. This result may be associated with the very significant decrease in defensiveness (K scale) only observed in this sample. On the other hand, in both samples, significant decreases in the Content scales have parallels with equivalent basic Clinical scales: in the non-clinical sample, the decrease between administrations for Depression

(A-dep), Health Concerns (A-hea), Bizarre Mentation (A-biz) and Alienation (A-aln) may be considered comparable to the decreases in the scales Depression (2.D), Hypochondriasis (1.Hs) and Hysteria (3.Hy), and Schizophrenia (8.Sc). And in the clinical sample, the Bizarre Mentation (A-biz) and the Health Concerns (A-hea) scales had significant decreases similar to the ones observed in Schizophrenia (8.Sc), Hypochondriasis (1.Hs) and Hysteria (3.Hy) Clinical scales. Finally, in the Supplementary scales, only two differences were found in the sample without clinical complaints, in the Alcohol / Drug Problem Proneness (PRO) and the Anxiety (A) scales, while the clinical sample displayed temporal stability in the means of all these scales.

Even though a shortcoming may be pointed out to this study, regarding the limited generalizability for its conclusions due to the reduced sample sizes, the methodological option of studying temporal stability departing from two samples contrasted by clinical condition, instead of one larger sample, revealed useful, bringing some valuable insights about the clinical merits of this inventory. The Portuguese version of the MMPI-A presented high to very high indicators of temporal stability, as expected for an inventory devised to assess stable constructs over time, as personality and psychopathology dimensions. These results contribute to support the use of the MMPI-A for the assessment of personality and psychopathology in the Portuguese adolescent population. Yet, the higher stability of the results obtained in the Clinical Complaints sample further highlight the value of this instrument for a reliable identification of psychological disorders or assessment of psychopathology, when clinical complaints are present.

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## EXPLORING WHAT LEARNING STYLES GENERATION Z STUDENTS PREFER: A CASE OF INDONESIAN UNDERGRADUATES

Yoshitaka Yamazaki<sup>1</sup>, Michiko Toyama<sup>1</sup>, & Murwani Dewi Wijayanti<sup>2</sup>

<sup>1</sup>*Department of Business Administration, Bunkyo University (Japan)*

<sup>2</sup>*Department of Teacher Candidate for Elementary School, Universitas Sebelas Maret (Indonesia)*

### Abstract

This study aimed to empirically examine the preferred learning styles of undergraduate students of Generation Z based on Kolb's learning theory. The literature has highlighted unique learning characteristics of Generation Z, but empirical investigations have been inconclusive in terms of Generation Z's learning style, particularly in relation to Kolb's learning model. We applied Kolb's Learning Style Inventory, examining 423 undergraduate elementary education students in an Indonesian university. All of the participants were in Generation Z, ranging from 18 to 23 years old in 2023. Results revealed that as a whole, students preferred the learning mode of abstract conceptualization (i.e., thinking) over concrete experience (i.e., feeling), as well as preferred the mode of reflective observation (i.e., reflecting) over active experimentation (i.e., acting). Furthermore, the most common learning style was Diverging (63%); the second, Assimilating (28%); the third, Converging (5%); and finally, the fourth, Accommodating (4%). Based on these results, we discuss implications and limitations.

**Keywords:** *Learning style, Generation Z, Kolb's learning theory, Indonesian university, teacher education.*

### 1. Introduction

Since Prensky (2001) proposed the term digital natives as a feature of a new generation after Millennials, the characteristics of this generation, known as Generation Z, have been widely studied. Typically, Generation Z is considered to include those born between 1995–1997 and 2010–2012. Among their characteristics, learning and educational aspects have frequently been the focus of researchers and scholars (see Isaacs, Scott, & Nisly, 2020; Nicholas, 2019; Sayekti, Habibah, & Rahmawati, 2020; Schwieger & Ladwig, 2018; Seemiller & Grace, 2017; Yu, 2020). Conceptual and review studies on Generation Z have presented a list of unique learning characteristics (see Isaacs et al., 2020; Schwieger & Ladwig, 2018; Seemiller & Grace, 2017; Shorey, Chan, Rajendran, & Ang, 2021), and a number of empirical examinations have begun to examine Generation Z's preferred approach to learning, which is called a 'learning style', in educational institutions and learning contexts. Although numerous learning styles, models, and measures have been studied in various disciplines (Coffield, Moseley, Hall, & Ecclestone, 2004), several empirical studies on Generation Z have applied Kolb's (1984; Kolb & Kolb, 2017) learning model to identify the learning style of Generation Z (e.g., Joonas, Mahfouz, González-Trujillo, & Ruiz, 2021; Jurenka, Stareček, Vraňáková, & Cagáňová, 2018; Manzoni, Caporarello, Cirulli, & Magni, 2021). However, the research on learning styles of Generation Z has provided not only inconsistent results but also methodological limitations. Thus, it seemed important to fill these gaps. Accordingly, the aim of this study was to examine what learning style Generation Z undergraduate students prefer to employ with regard to Kolb's learning model and measure.

### 2. Kolb's learning model

By integrating influential learning theories and models in disciplines relevant to psychology, education, and behavior science, Kolb (1984) developed experiential learning theory. The unique feature of experiential learning theory is to focus on individuals' experiences as a central role of human learning (Kolb, 1984; Kolb & Kolb, 2017). According to Kolb's learning theory, people are required to apply four learning modes in learning situations: concrete experience (CE), abstract conceptualization (AC), reflective observation (RO), and active experimentation (AE). CE serves to grasp an experience by using

sensing and feelings, which becomes apprehensive knowledge that can be described as implicit. This knowledge is processed by the mode of RO, which requires people to carefully watch and patiently listen to others. As a result of this processing, knowledge becomes more comprehensive, which is captured by the mode of AC. The role of AC is to make human/individual experience clearly and explicitly expressed by words, concepts, numbers, and logic. Such knowledge is a foundation for testing whether it is correct or not by the mode of AE, which requires taking action, leading to a new experience. The CE mode is dialectically opposite the AC mode, while the RO mode is dialectically contrasted with the AE mode. A combination of the four learning modes leads to four basic learning styles: the Diverging learning style (CE and RO), the Assimilating style (AC and RO), the Converging style (AC and AE), and the Accommodating style (CE and AE).

### 3. Generation Z and learning style

To the best of our knowledge, five empirical studies have been conducted on the learning style of Generation Z applying Kolb’s learning model: the studies of Galingan (2019), Joonas et al. (2021), Jurenka et al. (2018), Manzoni et al. (2021), and Seemiller, Grace, Campagnolo, Alves, and De Borba (2019). Table 1 summarizes study characteristics and learning style results. All studies reported the ratio/distribution of the four learning styles, though learning style names varied based on research features and aims. For example, the Diverging learning style, which is the original name applied in Kolb’s learning theory, was changed to Reflector (Galingan, 2019), Innovator (Jurenka et al., 2018), and Imagination (Seemiller et al., 2019). Also, Kolb’s learning theory is aligned with Kolb’s Learning Style Inventory (KLSI), with a forced-choice form to match dialectical learning dimensions; however, two studies modified the response from forced-choice to a Likert-type scale (Manzoni et al., 2021; Seemiller et al., 2019), which presents limitations in comparing studies. As the study of Manzoni et al. (2021) also documented, their study participants also included Millennials, so that the study’s learning style results may have reflected both Generation Z and Millennials. Finally, it should be noted that the percentage expression described in the study of Seemiller et al. (2019) was different from those of the other studies. Their study applied a 5-point Likert scale instead of the forced-choice form and reported “the frequency of responses for those who indicated ‘often’ or ‘always’ using each style” (Seemiller et al., 2019, p. 361).

Based on the differences in these studies, it seemed difficult to compare the learning style result of one study with that of the others. Yet, some insight can be gained by listing the first and second dominant styles of learning for each study. The study of Joonas et al. (2021) showed the first learning style was Converging and the second learning styles were Assimilating and Accommodating equally; that of Manzoni et al. (2021), Assimilating (first) and Diverging and Accommodating (second) equally; that of Galingan (2019), Reflector (=Diverging, first) and Pragmatist (=Converging, second); that of Jurenka et al. (2018), Practice (=Converging, first), and Dynamic (=Accommodating, second); and that of Seemiller et al. (2019), Logic in USA and Brazil (=Assimilating, first), and Experience in USA (=Accommodating, second) and Experience and Practicality in Brazil (=Converging, equally as the second). Accordingly, it did not appear that a common learning style dominated in Generation Z.

Table 1. Summary of five studies’ results of learning style and Generation Z.

| Authors                    | N    | Country     | Institution | Learning Style** |     |              |     |              |     |               |     |
|----------------------------|------|-------------|-------------|------------------|-----|--------------|-----|--------------|-----|---------------|-----|
|                            |      |             |             | Diverging        |     | Assimilating |     | Converging   |     | Accommodating |     |
| Joonas et al. (2021)       | 120  | Mexico      | University  | 18               | 15% | 29           | 24% | 44           | 37% | 29            | 24% |
| Manzoni et al.* (2021)     | 592  | Italy       | University  | 150              | 25% | 164          | 28% | 128          | 22% | 150           | 25% |
|                            |      |             |             | Reflector        |     | Theorist     |     | Pragmatist   |     | Activist      |     |
| Galingan (2019)            | 149  | Philippines | University  | 63               | 42% | 11           | 7%  | 40           | 27% | 35            | 23% |
|                            |      |             |             | Innovator        |     | Analysist    |     | Practice     |     | Dynamic       |     |
| Jurenka et al. (2018)      | 40   | Slovakia    | Secondary   | 2                | 5%  | 7            | 18% | 22           | 55% | 8             | 20% |
|                            |      |             |             | Imagination      |     | Logic        |     | Practicality |     | Experience    |     |
| Seemiller et al.*** (2019) | 701  | USA         | College     | 390              | 56% | 587          | 84% | 524          | 75% | 563           | 80% |
|                            | 1481 | Brazil      | College     | 840              | 57% | 1118         | 76% | 884          | 60% | 886           | 60% |

Note: \*Sample size and frequency numbers were estimated by the authors based on precepts presented in the study of Manzoni et al. (2021). \*\*Names of the learning styles reflect what was used in each study, but the heading at the top indicates the original term used by Kolb. \*\*\*Frequency numbers and percentages were resulted from the first and second highest selection based on the usage of Likert scale.

### 4. Methods

This study involved 423 undergraduate students majoring in elementary education at an Indonesian university. As part of our research project, online survey questionnaires were distributed and collected in the spring term of 2023 at the Faculty of Teacher Training and Education. Participants’ ages

ranged from 18 to 23 years old; thus, all were considered Generation Z students. Seventy-five percent of the participants were 19, 20, or 21 years old. There were 61 male students (14%) and 362 female students (86%). This study was approved by the university, and the consent of study participants was obtained.

To identify students' learning style, we used version 3 of Kolb's (1999) KLSI translated into the Indonesian language. The psychometrics of the KLSI were investigated by several researchers (Andreou, Papastavrou, Lemonidou, Mattheou, & Merkouris, 2015; Kayes, 2005), showing that it had better psychometric properties than the previous version. The KLSI has been applied in a great number of countries (Kolb & Kolb, 2017).

**5. Results**

As depicted in Table 2, results of correlation analysis illustrated statistical relationships among eight key learning style variables and three demographic variables: age, gender, and academic year. Student ages were significantly correlated with the mode of abstract conceptualization (AC), had a marginally negative relationship with the mode of reflective observation (RO), and had a marginally positive relationship with a relative preference for AC over CE (i.e., AC – CE). In terms of student gender (code: 1 = male and 2 = female), there was a marginal positive relationship between gender and AC as well as AC – CE. Those results concerning demographics in relation to learning style variables might be important when considering the influence of age and gender on learning styles of Generation Z students.

Table 2. Results of correlation analysis of key learning style variables and demographic variables.

|                 | Mean  | SD   | 1       | 2      | 3     | 4        | 5        | 6        | 7        | 8        | 9        | 10   |
|-----------------|-------|------|---------|--------|-------|----------|----------|----------|----------|----------|----------|------|
| 1 Age           | 20.29 | 1.24 |         |        |       |          |          |          |          |          |          |      |
| 2 Gender        | -     | -    | 0.05    |        |       |          |          |          |          |          |          |      |
| 3 Academic year | 2.83  | 1.88 | 0.46 ** | 0.02   |       |          |          |          |          |          |          |      |
| 4 CE            | 30.59 | 3.77 | -0.01   | -0.07  | 0.00  |          |          |          |          |          |          |      |
| 5 AC            | 30.79 | 4.08 | 0.12 *  | 0.08 † | 0.06  | -0.37 ** |          |          |          |          |          |      |
| 6 RO            | 30.98 | 4.29 | -0.09 † | -0.06  | -0.05 | -0.27 ** | -0.46 ** |          |          |          |          |      |
| 7 AE            | 27.65 | 3.61 | -0.01   | 0.05   | 0.00  | -0.3 **  | -0.2 **  | -0.39 ** |          |          |          |      |
| 8 AC-CE         | 0.20  | 6.50 | 0.08 †  | 0.09 † | 0.04  | -0.81 ** | 0.84 **  | -0.13 *  | 0.04     |          |          |      |
| 9 AE-RO         | -3.33 | 6.59 | 0.05    | 0.07   | 0.03  | 0.02     | 0.18 **  | -0.86 ** | 0.08 **  | 0.11 *   |          |      |
| 10  AC-CE       | 5.88  | 4.70 | -0.03   | -0.07  | -0.08 | 0.57 **  | -0.6 **  | 0.08     | -0.01    | -0.71 ** | -0.06    |      |
| 11  AE-RO       | 9.84  | 5.80 | -0.03   | -0.05  | -0.01 | -0.05    | -0.15 ** | 0.81 **  | -0.74 ** | -0.07    | -0.93 ** | 0.03 |

Note: \*\**p* < 0.01, \**p* < 0.05, †*p* < 0.10; Gender code, male = 1, and female = 2; CE = concrete experience; AC = abstract conceptualization; RO = reflective observation; AE = active experimentation; AC – CE = relative preference for AC vs. CE; AE – RO = relative preference of AE vs. RO; |AC – CE| = balanced score between AC and CE, absolute value of [AC – (4 + CE)]; |AE – RO| = balanced score between AE and RO, absolute value of [AE – (6 + RO)].

Mean scores of four learning modes (CE, AC, RO, and AE) in Table 2 show the degree of learning mode preference: Indonesian undergraduates as a whole preferred to use the three modes of AC, CE, and RO to a similar degree, while they had a lower preference for applying the mode of AE.

Mean scores of AC – CE and AE – RO indicated a relative preference for one learning mode over the other in the same dialectical learning dimension (AC vs. CE, and AE vs. RO). Since the normative scores are AC – CE = 4.3 and AE – RO = 5.9, Generation Z Indonesian undergraduate students as a group exhibited much lower scores in the dialectical learning dimension (mean of AC – CE = 0.20 and mean of AE – RO = -3.33). Thus, Indonesian students as a group prefer to use CE more than AC in comparison with the norm, while they prefer to apply RO more than AE. These scores showed that their learning style as a group was the Diverging learning style.

Mean scores of |AC – CE| and |AE – RO| described a balanced tendency of the Indonesian students within the same dialectical learning dimension. As shown in Table 2, the score of |AC – CE| was 5.88, while that of |AE – RO| was 9.84, indicating that the Indonesian students as a group were more balanced in the learning dimension of AC – CE than that of AE – RO. This explanation is also consistent with Figure 2, which showed that the degree of the CE mode was similar to that of the AC mode, whereas the degree of the RO mode was much greater than that of the AE mode. Accordingly, it seems that Indonesian students tend to be more flexible to adapt to both AC and CE learning situations; however, they may not be so flexible with the learning dimension of AE and RO.

Based on a cut-off point using the normative scores (AC – CE = 4.3 and AE – RO = 5.9), four learning styles can be specified: Diverging, Assimilating, Converging, and Accommodating (Kolb, 1999). Table 3 presents the frequency distribution of the four learning styles. The highest number of students had a learning style of Diverging, 266 (63%); followed by Assimilating, 118 (28%); Converging, 22 (5%);

and finally Accommodating, 17 (4%). These learning style results show a learning mode of reflective observation (RO), which consists of both Diverging and Assimilating learning styles.

Table 3. Frequency distribution of four learning styles based on Indonesian undergraduates.

| Learning style | Frequency distribution |         | learning modes combination |
|----------------|------------------------|---------|----------------------------|
|                | number                 | percent |                            |
| Diverging      | 266                    | 63%     | CE and RO                  |
| Assimilating   | 118                    | 28%     | AC and RO                  |
| Converging     | 22                     | 5%      | AC and AE                  |
| Accommodating  | 17                     | 4%      | CE and AE                  |

Additionally, to clarify relationships between the four learning styles and the two demographic variables of gender and age, we conducted chi-square tests of the relationships. As illustrated in Table 4, the group of four learning styles was marginally associated with age ( $\chi^2 = 24.47, p < 0.10$ ) and was not related to gender ( $\chi^2 = 3.43, p > 0.10$ ).

Table 4. Results of chi-square tests for relationships between learning style and age/gender.

|        |        | Learning Style |              |            |               |       | $\chi^2$           |
|--------|--------|----------------|--------------|------------|---------------|-------|--------------------|
|        |        | Diverging      | Assimilating | Converging | Accommodating | Total |                    |
| Age    | 18     | 15             | 9            | 1          | 0             | 25    | 24.47 <sup>†</sup> |
|        | 19     | 65             | 26           | 3          | 8             | 102   |                    |
|        | 20     | 78             | 32           | 1          | 3             | 114   |                    |
|        | 21     | 61             | 30           | 6          | 4             | 101   |                    |
|        | 22     | 40             | 18           | 9          | 2             | 69    |                    |
|        | 23     | 7              | 3            | 2          | 0             | 12    |                    |
| Gender | male   | 44             | 14           | 1          | 2             | 61    | 3.43               |
|        | female | 222            | 104          | 21         | 15            | 362   |                    |
| Total  |        | 266            | 118          | 22         | 17            | 423   |                    |

Note: <sup>†</sup> $p < 0.10$ .

## 6. Discussion

This study explored in what way Generation Z students prefer to learn by applying Kolb's learning theory in an Indonesian university. Our study results revealed that their learning style as a group represented a Diverging learning style that accentuates the two learning modes of concrete experience (CE) and reflective observation (RO). Congruently, the largest frequency distribution among four learning styles was also the Diverging style followed by the Assimilating style. The common learning mode of these two learning styles is reflective observation (RO), which suggests the weak usage of the mode of active experimentation (AE) in a learning situation. This finding can reflect a lower degree of the AE mode. Finally, our Indonesian Generation Z participants exhibited a more balanced learning tendency in a learning situation requiring the AC and CE modes than in that demanding the AE and RO modes. This balanced tendency suggests that they become more flexible when learning in a context that requires either AC or CE modes. For example, when people participate in a field work project, they may have to capture hands-on experiences from an immediate situation, whereas they may be required to express thoughts in the form of speaking or writing. Although the situation is complex, those who possess a balanced style of learning with AC and CE modes would be able to respond to it properly.

When comparing our results with the past five Generation Z studies using Kolb's learning model discussed in the earlier section, we found few similarities. The study of Galingan (2019) using the sample of engineering university students reported that the learning style of Reflector (Diverging) was most dominant, but that of Pragmatist (Converging) and that of Activist (Accommodating) were the second and third largest group, which was different from our results. In conjunction with past studies, our results imply that an influence of factors relevant to generations on learning style might not be enough to determine a certain learning style as unique to Generation Z. To further develop the literature of Generation Z's learning style, it may be important to consider other influential factors such as educational disciplines of participants or their majors, which affect the formation of learning style (Kolb, 1984), as

well as cultural differences. This perspective may allow us to develop a research design for study of learning styles and Generation Z, including such factors as educational majors and/or country cultures.

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## SLOVAK ADOLESCENTS' SELF-CONCEPT AS A PREDICTOR OF THEIR SCHOOL ENGAGEMENT

**Beata Žitniaková Gurgová, & Lenka Ďuricová**  
*Faculty of Education, Matej Bel University (Slovakia)*

### Abstract

A student's school engagement is a significant factor in his/her school success (Appleton et al., 2006; Simons-Morton & Chen, 2009; Wang, 2009). Student self-concept is also associated with school performance according to previous research (e.g., Marsh & Martin, 2011). The present study builds on the results of the investigation of the correlations between the overall self-concept of Slovak adolescents and their school engagement. However, its aim is to confirm the individual dimensions of adolescents' self-concept in the Piers-Harris sense in the role of predictors of their overall school engagement. Thus, the ambition of the research study is to contribute to the explanation of the construct of school engagement. The research sample consists of 1013 adolescents ( $M_{Age} = 17.00$ ,  $SD_{Age} = 1.27$ ) from different regions of the Slovak Republic. ASCSS/Adolescents' Self-Concept Short Scale (Veiga & Leite, 2016) and SES-4DS/Student Engagement in Schools - Four-dimensional Scale (Veiga, 2016) were used as research instruments. Multiple regression analysis deepened the results of the correlational analysis and a statistically significant regression model explained approximately 45% of the adolescent school engagement variable. In the role of significant predictors in relation to school engagement, the model confirms three of the six dimensions of adolescents' self-concept in the Piers-Harris sense: behaviour, popularity, and intellectual status. The discussion focuses on finding parallels with the dimensions of the construct of school engagement (behavioural, affective and cognitive). The results of the research study (despite its limits: self-reports, data collection) can be used in setting up intervention programs oriented towards strengthening students' school engagement and secondarily improving their academic performance.

**Keywords:** *Adolescence, school engagement, self-concept.*

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### 1. Introduction

School engagement and self-enhancement are two main constructs that explain appropriate school adjustment (Veiga et al., 2015). School engagement (SES) is a topical issue that has been the focus of many scholars for the past two decades (Appleton et al., 2008; Fredricks et al., 2004; Reeve & Tseng, 2011). The study of school engagement is currently a topic of great interest in psychoeducational research because it offers new possibilities for developing students (Ramos-Díaz et al., 2016). Students who are highly engaged in school perform well academically, use effective learning strategies, maintain good interpersonal relationships in the classroom, feel a sense of belonging, and behave appropriately toward students and teachers in the classroom (Wentzel, 2003). SES has been previously operationalised as an indicator of students' commitment to school and motivation to learn (Simons-Morton & Chen, 2009; Veiga et al., 2012). In general, there is consensus on its multidimensional nature, and it is often presented as a meta-construct (Fredricks et al., 2004; Jimerson et al., 2003). School engagement refers to "energized, directed, and continued action, or the discernible qualities of students' interactions with learning activities or environments" (Wang & Peck, 2013, p. 1266). In fact, engagement involves a trichotomy of behavioural, cognitive, and emotional dimensions (Reeve & Tseng, 2011). Behavioural engagement in school includes physical presence in the classroom or school and active participation in the learning process (Fredricks et al., 2004; Wang & Peck, 2013). Cognitive engagement in school refers to effective self-management of educational approaches and strategic planning, and monitoring and evaluating short- and long-term learning outcomes (Fredricks et al., 2004; Zimmerman, 1989). Emotional engagement in school involves affective responses to the school environment and activities (Fredricks et al., 2004; Skinner & Belmont, 1993; Voelkl, 1997). This multidimensional concept of school engagement facilitates understanding students' actions, feelings, and thoughts toward school, which can directly and indirectly influence their educational outcomes (Fredricks et al., 2004; Wang & Peck, 2013). Students with higher engagement achieve higher

academic success. Conversely, students who exhibit lower engagement, e.g., truancy, are more likely to fail (Appleton et al., 2006; Simons-Morton, Chen, 2009; Wang, 2009; Wang et al., 2010).

Self-concept represents the set of ideas that individuals have about themselves based on self-assessment and evaluation by others (Shavelson et al., 1976). In a broader sense, self-concept can best be defined as "the central operationalisation of the perceived competence" (Marsh et al., 2017). Self-concept is very important in terms of adolescents' adjustment (Fuentes et al., 2011; Rodríguez-Fernández, 2012). As with school engagement, self-concept relates to academic motivation and performance (Green et al., 2012). Several research studies have highlighted the links between school engagement and self-enhancement (Karababa, 2020). Veiga et al. (2015) point to the associations of self-concept and school engagement in developmental contexts in research with younger, middle, and older adolescents. The research highlights associations between these constructs but also changes in the associations between their dimensions across adolescence. Some research on the relationship between school engagement and students' self-concept also examines the effects of social factors in students' lives (social support from family and classmates - Ramoz-Diaz et al., 2016; teachers and pupils as motivators - Raufelder et al., 2013; Bakadorova & Raufelder, 2017; social support and resilience - Rodríguez-Fernández et al., 2018; social relationships in school, belonging and powerlessness as mediators - Raufelder et al., 2013).

The present study builds on the results of the investigation of the correlations between the overall self-concept of Slovak adolescents and their school engagement. However, its aim is to confirm the individual dimensions of adolescents' self-concept in the Piers-Harris sense in the role of predictors of their overall school engagement. Thus, the ambition of the research study is to contribute to the explanation of the construct of school engagement.

## 2. Methods

The research file comprised 1,013 Slovak adolescents aged 15 to 20, 73% female. The research involved a combination of cluster sampling (multiple random collection sites) and voluntary sampling (people using these specific sites responded to the online survey). The online questionnaire was distributed via official representatives of different secondary schools across Slovakia. The online form included:

Adolescents' Self-concept Short Scale/ASCSS (Veiga & Leite, 2016). A shortened 30-item version of the original PHCSCS - 2 / Piers-Harris Children's Self-Concept Scale 2 (Piers & Herzberg, 2002) was used. The original factor structure was retained. Each of the six dimensions (Anxiety, Physical Appearance, Behaviour, Popularity, Happiness, Intellectual status) is saturated by five items, and the respondent provides their opinion on the statements using a 6-point Likert scale (1=strongly disagree; 6=strongly agree). In addition to the raw scores in the individual dimensions, this questionnaire allows for the identification of the total self-concept score of the given adolescent. According to Veiga and Leite (2016), the internal consistency of the individual dimensions (Cronbach's alpha) of this questionnaire tested on a sample of 440 Portuguese adolescents varied from .70 to .79. The internal consistency of the individual dimensions in the adapted version of this instrument used in our research was satisfactory ( $\alpha = .70 - .84$ ); the reliability of the research instrument as a whole was also satisfactory ( $\alpha = .89$ ).

Student Engagement in School – A Four-Dimensional Scale/SES-4DS (Veiga et al., 2015). It is a 20-item self-reporting questionnaire for adolescents that explores the four dimensions of school engagement. The three standard dimensions (cognitive, affective, behavioural) were complemented by agency, which refers to the students' active interest in learning, their level of independence in relation to learning, and knowledge acquisition. Each dimension consists of five items. The respondent provides their opinion on each statement using a 6-point scale (1 = absolutely disagree; 6 = absolutely agree). Besides the raw score for individual dimensions, the total school engagement score can be calculated. The internal consistency of the individual dimensions of the adapted questionnaire was deemed satisfactory ( $\alpha = .67 - .84$ ).

## 3. Results

Tables 1 present the descriptive characteristics of the variables of interest according to the research instruments used. Considering the results of the Shapiro-Wilk normality test, the relationships between the variables were examined through the non-parametric Spearman's coefficient (Table 2). All measured correlations between overall school engagement and self-enhancement dimensions showed statistical significance. Moderate positive significant relationships were confirmed for total school engagement and adolescents' total self-concept, behaviour, popularity and intellectual status. The linear regression (Table 3) results show that the dimensions of self-enhancement explain approximately 45% of adolescents' total school engagement.

Table 1. Descriptive characteristics of the variables ASCSS and SES TOT (N = 1013).

|                         | SES_TOT            | PH_TOT             | PH_ANX | PH_APP | PH_BEH | PH_POP | PH_HAP             | PH_INT |
|-------------------------|--------------------|--------------------|--------|--------|--------|--------|--------------------|--------|
| Mode                    | 3.739 <sup>a</sup> | 3.890 <sup>a</sup> | 3.293  | 4.208  | 4.830  | 4.671  | 3.895 <sup>a</sup> | 3.470  |
| Median                  | 3.700              | 3.933              | 3.400  | 3.800  | 4.600  | 4.600  | 4.000              | 3.600  |
| Mean                    | 3.738              | 3.935              | 3.384  | 3.805  | 4.381  | 4.444  | 3.997              | 3.600  |
| Std. Deviation          | 0.643              | 0.760              | 1.158  | 1.167  | 0.995  | 1.067  | 1.171              | 0.985  |
| Shapiro-Wilk            | 0.996              | 0.997              | 0.987  | 0.985  | 0.959  | 0.959  | 0.973              | 0.993  |
| P-value of Shapiro-Wilk | 0.007              | 0.033              | < .001 | < .001 | < .001 | < .001 | < .001             | < .001 |
| Minimum                 | 1.850              | 1.100              | 1.000  | 1.000  | 1.000  | 1.000  | 1.000              | 1.000  |
| Maximum                 | 5.600              | 5.900              | 6.000  | 6.000  | 6.000  | 6.000  | 6.000              | 6.000  |

Note: ASCSS = Adolescents' Self-concept Short Scale, SES TOT=total school engagement, PH TOT= total self-concept score, PH ANX=anxiety, PH APP=physical appearance, PH BEH=behaviour, PH POP=popularity, PH HAP=happiness, PH INT=intellectual status

Table 2. Relationship (Spearman's correlation) between school engagement and adolescent self-concept (N=1013).

|                | PH_TOT  | PH_ANX  | PH_APP  | PH_BEH  | PH_POP  | PH_HAP  | PH_INT  |
|----------------|---------|---------|---------|---------|---------|---------|---------|
| <b>SES TOT</b> | .542*** | .243*** | .289*** | .340*** | .401*** | .403*** | .624*** |

Note: ASCSS = Adolescents' Self-concept Short Scale, SES TOT=total school engagement, PH TOT= total self-concept score, PH ANX=anxiety, PH APP=physical appearance, PH BEH=behaviour, PH POP=popularity, PH HAP=happiness, PH INT=intellectual status, \*\*\*p<.001

Table 3. Regression model and estimation of regression coefficients for total school engagement as explanatory variable (N = 1013).

| Model         | R     | R <sup>2</sup> | adj. R <sup>2</sup> | F       | p     |
|---------------|-------|----------------|---------------------|---------|-------|
| <b>H4</b>     | .672  | .451           | .449                | 276.221 | <.001 |
| H4            | B     | Beta           | t                   | p       |       |
| (intercept)   | 1.674 | -              | 19.923              | <.001   |       |
| <b>PH BEH</b> | .073  | .112           | 4.439               | <.001   |       |
| <b>PH POP</b> | .112  | .185           | 7.185               | <.001   |       |
| <b>PH INT</b> | .347  | .532           | 20.819              | <.001   |       |

Note: PH BEH=behaviour, PH POP=popularity, PH INT=intellectual status, R = multiple correlation coefficient, R<sup>2</sup> = determination index, adj. R<sup>2</sup> = adjusted determination index, F = F-test result, p = F-test significance, B = unstandardised coefficient, Beta = standardised coefficient, t = T-test result, p = T-test significance

#### 4. Discussion and conclusion

Our research aimed to contribute to explaining the construct of school engagement. The study aimed to validate the different dimensions of adolescents' self-concept in the Piers-Harris sense as predictors of their overall school engagement. Correlation and regression analysis results showed a positive association between these variables. The statistically significant moderately positive correlation coefficient between overall school engagement and the dimension of anxiety (not being anxious) is confirmed by the longitudinal research of Morales et al. (2022), which confirmed that children aged 8-12 years with lower academic self-concept had higher anxiety. Non-anxiety relates to the affective dimension of school engagement. Regulating and managing emotions appropriately is an important skill not only in the school setting. The statistically significant moderately positive correlation coefficient between overall school engagement and the physical appearance dimension represents a factor that facilitates adolescents' social interaction at school. Moderate positive significant relationships were confirmed for overall school engagement and adolescents' overall self-concept, behaviour, popularity and intellectual status. Overall school engagement was positively related to students' self-concept, as well as their ability to adapt to school situations, their perceived popularity in the group, and their perceived intellectual status. The behavioural and cognitive levels of school engagement are more prominent in these relationships. These results are supported by the research of Veiga et al. (2015), Ramos-Díaz et al. (2016), Bakadorova & Raufelder (2017), and Karababa (2020). The linear regression results show that the dimensions of self-enhancement explain approximately 45% of adolescents' total school engagement. Thus, it can be concluded that self-concept significantly predicts school engagement. Positive self-concept in adolescents encourages the development

of student self-regulation and academic achievement and automatically increases student engagement in the educational process (Galugu & Samsinar, 2019). Despite some limitations of our study, such as the online mode of collection and methodologies based on respondents' self-reporting, we can note its originality concerning national data collection. We find inspiration for further research precisely in searching and validating the social-psychological determinants that act on school engagement and self-enhancement. Our study highlights the need to design and apply intervention programs in young people to enhance self-enhancement with implications for school engagement. Especially during adolescence, self-esteem is easily vulnerable, and its reduced level also negatively affects school engagement. Improving adolescents' self-esteem can improve the students' standing in school and their academic performance, thus increasing their satisfaction in school.

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# ACHIEVEMENT GOAL MOTIVATION AND RELIANCE ON CHATGPT FOR LEARNING

**Ana Stojanov**

*Higher Education Development Centre, University of Otago (New Zealand)*

## Abstract

With the advancement of artificial intelligence and its integration into education, understanding individual differences in interaction with this technology becomes a pressing issue. This study examined the association between achievement goal orientations and reliance on an artificial intelligence tool, ChatGPT, among higher education students. Crowdsourced participants (N= 413) filled in a questionnaire measuring attitudes towards ChatGPT, reliance on ChatGPT for completing 13 tasks, and achievement goal orientations. Mastery approach orientation was, in general, associated with lower reliance on ChatGPT, while mastery avoidance and performance approach with higher, albeit these associations did not hold for all of the examined tasks. The findings underscore the need for further longitudinal and individual-difference-based research on use of and reliance on educational technology.

**Keywords:** *ChatGPT, learning, achievement goal motivation, university students.*

## 1. Introduction

In November 2022, OpenAI released their large language model ChatGPT to the public, which generated immediate interest among the community. This interest was driven by the advanced capabilities of ChatGPT. Unlike previous chatbots, ChatGPT was trained on exceptionally large data, is versatile and, given the same prompt, can generate different versions of a text, which are difficult to distinguish from the writings by humans (Lund et al., 2023). Additionally, when presented with exam questions, the expansive dataset that it was trained on, along with the algorithms it employs, enables ChatGPT to answer to a standard that would pass exams (Mbakwe et al., 2023). Thus, in the context of university education, the discourse revolves around potential uses and misuses, such as engaging in academic dishonesty (Cotton et al., 2023; King, 2023; Stutz et al., 2023), but few studies have examined if students do engage with the bot or whether ChatGPT could be used as a learning aid (Stojanov, 2023). In a previous study in our lab, my colleagues and I examined how students use the bot for university learning, and identified four themes: content acquisition, self-regulation, technical problem solving and writing support) and 12 subthemes. Building on that study, in the current study I examine if achievement goal orientations are related to reliance on ChatGPT for learning tasks.

An achievement goal embodies an individual's quest for competence. It represents a mental image of a potential outcome rooted in competence that one is driven to achieve (Elliot & Thrash, 2001). Achievement goals can be differentiated based on how competence is defined and valenced (Elliot, 1999). If one defines competence by whether they have achieved understanding or mastered the task or improved one's performance, they have mastery orientation, whereas if competence is defined as the attainment of more knowledge or skills than others, then one has performance-oriented goals. In terms of valence, if the achievement goal is focused on obtaining a positive outcome, then the goal in question is an approach goal; if the goal is focused on avoiding a negative outcome, then it is said that the goal is an avoidance goal. When these achievement goals are combined in a 2x2 conceptualization (Elliot & McGregor, 2001), there are four possibilities to consider: mastery-approach, which stresses attaining task mastery or improvement; mastery avoidance, which is focused on aiming not to lose one's skills or fail to master the task; performance approach, where the focus is on striving to outperform others, and performance avoidance, where the focus is on aiming to avoid performing worse than others.

Studies indicate that approach goals are positively, and avoidance goals negatively related to academic achievement (Alhadabi & Karpinski, 2020; Wirthwein et al., 2013). Given that AI tools such as ChatGPT could serve as a knowledge resource for students and influence how students approach learning

tasks, it is worth examining how the different achievement goals may predict reliance on such tools for learning, especially as technology usage may be related to personality traits (Ryan & Xenos, 2011).

Empirical studies examining how achievement goal orientations are related to the use of educational technology tools are lacking. This is important question because technology is becoming an important aspect of education (Bond et al., 2020), thus this study will shed light on individual differences, in particular achievement goal orientations, in the use of educational technology when pursuing academic competence. This is a pressing issue given that artificial intelligence is developing at a staggering pace and studies on the intersection of personality and educational technology, and in particular artificial intelligence are lacking.

## 2. Method

### 2.1. Participants

Participants were 413 higher education students (Age:  $M = 24.31$ ,  $SD = 8.12$ , 160 males, 248 females, 5 non-binary) recruited via CloudResearch (Chandler et al., 2019).

### 2.2. Procedure

Participants filled in a survey programmed in Qualtrics. The survey was part of a larger study looking at ChatGPT uses and in addition to the variables reported here also collected data on artificial intelligence literacy, intellectual humility and critical usage of ChatGPT.

### 2.3. Instruments

**2.3.1. Reliance on ChatGPT.** Participants were asked to indicate the degree (1= not at all; 5 = completely reliant) to which they rely on ChatGPT for completing 13 tasks (derived from a previous study exploring students use of ChatGPT; See Table 1).

**2.3.2. Achievement goals.** To measure achievement goals, we used the achievement goal scale, which consists of 12 items, divided into four subscales. Participants rated the degree to which each item was true of them on a 7-point scale, anchored at 1 = not at all true of me and 7 = very true of me.

Sample items are: It is important for me to do better than other students (Performance approach, Cronbach alpha = 0.90); My goal in this class is to avoid performing poorly (Performance avoidance, Cronbach alpha = 0.74); It is important for me to understand the content of this course as thoroughly as possible (Mastery approach, Cronbach alpha = 0.86); and I'm often concerned that I may not learn all that there is to learn in this class (Mastery avoidance, Cronbach alpha = 0.85)

**2.3.3. Attitudes towards ChatGPT.** To measure attitudes towards ChatGPT, we adapted the general attitudes towards artificial intelligence scale (Schepman & Rodway, 2020), which consists of two subscales, positive attitudes (12 items, e.g., There are many beneficial applications of ChatGPT; Cronbach  $\alpha = 0.88$ ) and negative attitudes (8 items, e.g., I find ChatGPT sinister; Cronbach  $\alpha = 0.81$ ).

## 3. Results

Table 1 presents the means and standard deviation for reliance on ChatGPT for each of the 13 tasks. To examine the association between reliance on ChatGPT and the four achievement goal orientations, we ran a series of multiple regression, with the four orientations as predictor variables, controlling for positive and negative attitudes towards ChatGPT, and each of the task students indicated their reliance on, as an outcome variable. Unsurprisingly, positive but not negative attitudes predicted higher reliance on ChatGPT for each task. Mastery approach predicted lower reliance for tasks such as information retrieval, drafting, homework help, summarizing, math problems, coding and using ChatGPT for writing assignments, while performance approach higher reliance on ChatGPT for homework help, quizzing, solving math problems and writing assignments. Mastery avoidance predicted higher reliance on ChatGPT for homework help, summarizing texts and creating study plans (See Table 1).

Table 1. Results of hierarchical regression analysis with reliance on ChatGPT as an outcome variable.

| Outcome variable  | M(SD)           | B(SE)               | B(SE)               | B(SE)                | B(SE)                 | B(SE)              | B(SE)               | B(SE)              | R <sup>2</sup> |
|---|-----------------|---------------------|---------------------|----------------------|-----------------------|--------------------|---------------------|--------------------|----------------|
|   |                 | Attitude (positive) | Attitude (negative) | Performance Approach | Performance Avoidance | Mastery Avoidance  | Mastery Approach    | Constant           |                |
| Find answers to specific questions related to my studies.                   | 2.42<br>(1.28)  | 0.823<br>(0.081)    | -0.032<br>(0.075)   | 0.070<br>(0.038)     | 0.018<br>(0.048)      | 0.020<br>(0.044)   | -0.11*<br>(0.05)    | -0.110<br>(0.460)  | 0.23           |
| Drafting my written assignments.  | 2.07<br>(1.21)  | 0.601**<br>(0.079)  | -0.14<br>(0.074)    | 0.102**<br>(0.037)   | -0.023<br>(0.047)     | 0.055<br>(0.043)   | -0.174**<br>(0.051) | 0.481<br>(0.453)   | 0.16           |
| Editing my written assignments.   | 2.18<br>(1.32)  | 0.658**<br>(0.088)  | 0.094<br>(0.082)    | 0.069<br>(0.041)     | 0.004<br>(0.053)      | -0.014<br>(0.048)  | -0.103<br>(0.057)   | 0.050<br>(0.504)   | 0.13           |
| Help with writing homework assignments.                                     | 2.21<br>(1.27)  | 0.659**<br>(0.082)  | -0.043<br>(0.077)   | 0.088*<br>(0.039)    | 0.065<br>(0.049)      | 0.093*<br>(0.045)  | -0.231**<br>(0.052) | 0.200<br>(0.047)   | 0.19           |
| Understanding complex concepts.   | 2.54<br>(1.35)  | 0.850**<br>(0.085)  | -0.085<br>(0.079)   | 0.009<br>(0.040)     | 0.062<br>(0.051)      | 0.082<br>(0.046)   | -0.069<br>(0.055)   | -0.430<br>(0.485)  | 0.24           |
| Summarizing complex texts.  | 2.54<br>(1.33)  | 0.717**<br>(0.085)  | -0.128<br>(0.079)   | 0.068<br>(0.040)     | 0.069<br>(0.051)      | 0.139**<br>(0.046) | -0.257**<br>(0.055) | 0.568<br>(0.485)   | 0.21           |
| Obtaining feedback on my written assignments.                               | 2.16<br>(1.33)  | 0.655**<br>(0.089)  | 0.102<br>(0.082)    | 0.065<br>(0.042)     | 0.048<br>(0.053)      | 0.015<br>(0.048)   | -0.068<br>(0.057)   | -0.544<br>(0.506)  | 0.14           |
| Generating practice questions or quizzes for self-assessment in my studies. | 2.12<br>(1.35)  | 0.459**<br>(0.093)  | -0.037<br>(0.086)   | 0.113*<br>(0.043)    | -0.012<br>(0.055)     | 0.034<br>(0.050)   | -0.092<br>(0.060)   | 0.586**<br>(0.529) | 0.08           |
| Creating study schedules or plans.  | 2.02<br>(1.28)  | 0.472**<br>(0.088)  | 0.075<br>(0.081)    | 0.057<br>(0.041)     | -0.002<br>(0.052)     | 0.097*<br>(0.048)  | -0.096<br>(0.056)   | 0.070<br>(0.501)   | 0.09           |
| Solving math problems.  | 2.29<br>(1.39)  | 0.548**<br>(0.094)  | 0.133<br>(0.087)    | 0.124**<br>(0.044)   | 0.020<br>(0.056)      | 0.035<br>(0.051)   | -0.239**<br>(0.061) | 0.569<br>(0.538)   | 0.12           |
| Coding or programming tasks.  | 2.01<br>(1.27)  | 0.650**<br>(0.084)  | 0.093<br>(0.078)    | 0.074<br>(0.040)     | -0.063<br>(0.050)     | 0.078<br>(0.046)   | -0.126*<br>(0.054)  | -0.044<br>(0.482)  | 0.15           |
| Generating ideas for creative projects.                                     | 2.35<br>(1.28)  | 0.685**<br>(0.084)  | 0.039<br>(0.078)    | 0.072<br>(0.039)     | 0.003<br>(0.050)      | 0.058<br>(0.046)   | -0.176<br>(0.054)   | 0.326<br>(0.479)   | 0.16           |
| Writing my assignments for me.  | 1.86<br>(1.227) | 0.567**<br>(0.081)  | 0.061<br>(0.075)    | 0.90*<br>(0.038)     | -0.005<br>(0.048)     | 0.019<br>(0.044)   | -0.272**<br>(0.052) | 0.862**<br>(0.461) | 0.16           |

#### 4. Discussion

This study examined the associations between reliance on ChatGPT for 13 learning tasks and achievement goal orientations. The results indicated that mastery approach was negative predictor for seven tasks, especially those that required demonstration of student's learning, such as drafting and writing papers, completing their homework or that offered shortcuts to learning, such as summarizing texts. These results are somewhat counter to our intuition and may have to do with how useful students perceive ChatGPT for their learning goals, or how students understand the use of ChatGPT as a learning aid. For example, if students perceive summarized text as depriving them of opportunities to learn, then it is not surprising that mastery approach, where the goal is authentic learning, would predict lower reliance for this task. On the other hand, performance approach was positively related with reliance on ChatGPT



for tasks that may directly lead to higher grades such as writing assignments, obtaining homework help, solving math problems, and quizzing oneself. Performance avoidance did not predict reliance on any of the tasks, while mastery avoidance positively predicted summarizing, creating study plans and homework help, suggesting that this orientation may be driving self-regulation such as planning one's study time as a way to manage the fear that one may not learn all there is to learn. Similarly, the fear of not fully comprehending all available information might incentivize those students driven by mastery avoidance to take shortcuts to learning such as using summaries in an attempt to 'digest' as much information as possible. The non-significant relationship between either of the orientations and reliance on ChatGPT for idea generation as well as conceptual understanding, may suggest that all students, regardless of their goal orientation are likely to rely on ChatGPT for these purposes, as the mean reliance score was relatively high, compared to the other means.

While the study shed light on the different patterns of engagement with technology for the different achievement goal orientations, the limitations include crowdsourced participants and their self-reported reliance. These participants may be more inclined to use technology than the average student, and their self-reports might not reflect their actual reliance. Further, we only measured reliance for 13 tasks and these may not have captured all the ways that students use and rely on ChatGPT, albeit these tasks were derived from open ended pilot questionnaire where students reported how they have engaged with ChatGPT. Despite these shortcomings, this study is the first to examine how individual differences may lead to different engagement with educational technology. Future research could focus on other individual difference variables and include longitudinal studies to understand how such reliance evolves over the course of academic studies.

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# TEACHER PRACTICE SUPPORTING STUDENT SCHOOL READINESS SKILLS: A QUALITATIVE LONGITUDINAL STUDY RELATED TO COVID-19 FROM MID-2020 TO MID-2023

Eileen Manoukian<sup>1</sup>, & Mary Barbara Trube<sup>2</sup>

<sup>1</sup>*Gem Educare/Platonium Mentoring & Coaching Consultants (USA)*

<sup>2</sup>*Platonium Mentoring & Coaching Consultants (USA)*

## Abstract

Studies focusing on pedagogical and curricular practices of teachers during children's formative years during and following the COVID-19 pandemic are scarce. Framed by school readiness and social development theories, a qualitative 4-year longitudinal study was conducted in a metropolitan region of the western United States. A total of 10 teachers completed three semi-structured open-ended interview sessions with one researcher. The purpose of this study was to explore how teachers supported their students in developing school readiness skills during and following the outbreak of COVID-19. Sixteen teachers volunteered for the first phase of the study in 2020; 13 of the 16 teachers were participants in the second phase during 2021-2022; and 10 out of 16 teachers were participants during the third phase of the study in 2023. Criteria for recruiting volunteer participants included the following: (1) currently teaching preschool (PS)/prekindergarten (PK)/kindergarten (K) when interviews were conducted, (2) having a minimum of 3 years' experience teaching at the PS/PK/P levels during phase one, and (3) teaching in an accredited private, public, or charter school in a metropolitan area of the western United States during the 4-year span. Data were collected via one-on-one semi-structured audio-taped interviews, each lasting between 45 and 130 minutes. Data were analyzed by following an inductive process based on Saldaña's coding system. A priori codes were taken from the conceptual framework and relevant literature, which were updated during each phase of the data analysis as questions were checked for reliability and validity. Structural, descriptive, and axial coding were used to reveal patterns and categories with emerging themes. The member-checking process was followed with each participant following all phases. Findings from the longitudinal study revealed five themes that teachers (1) modified their pedagogical practices and implemented new curricula to meet their students' needs; (2) were faced with continuous challenges that arose in response to the COVID-19 outbreak, isolation, and reestablishment periods; (3) expanded roles as they advocated and collaborated with mental health and behavioral experts for student interventions; (4) created communities of practice for peer mentoring/coaching support resulting in expansion of their repertoire in pedagogy/curriculum; (5) strengthened relationships with other teachers and students' parents while engaging in parent education and co-teaching strategies. Recommendations include further research on communities of practice and collaborative practices between teachers and mental health professionals that benefit students and families.

**Keywords:** *School readiness, COVID-19, developmental domains, co-teaching, mentoring.*

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## 1. Introduction

This study aimed to uncover how PS/PK/K teachers supported the development of students' school readiness skills and fostered their successful transitions into formal schooling during and following the COVID-19 pandemic. Researchers suggested that teachers are challenged to contribute to children's readiness for formal schooling during and following the pandemic (Franchino, 2020; Holod, 2020). Researchers noted that strategies and approaches used by early childhood teachers to address their students' school readiness skills are not known and need to be investigated (Brown et al., 2021; McNally & Slutsky, 2018; Smith & Glass, 2019) especially during and following the COVID-19 pandemic (Fufi et al., 2020; Poletti, 2020; Purtell et al., 2020).

## 2. Objectives

Early childhood educators are essential in helping their students acquire the formal school readiness skills they need (Cadima et al., 2015; Downer et al., 2016; Pianta et al., 2017). However, insufficient data about how PS/PK/K teachers supported the development of school readiness skills in their students was available at the outset of this study (Brown et al., 2021; Smith & Glass, 2019; Welchons & McIntyre, 2017). School districts' restrictions during and following the pandemic have made this worse by placing limitations on the PS/PK/K programs, which made it imperative that teachers support students in making a transition to formal schooling (Franchino, 2020; Holod, 2020). During and following the COVID-19 pandemic and its variants, researchers of this study set out to investigate how PS/PK/K teachers fostered their students' school readiness for formal education.

### 2.1. Research Questions

RQ1: How do PK-K teachers support the development of school readiness skills in their students during or following the COVID-19 pandemic (and its variants)?

RQ2: How do PK-K teachers foster their students' successful transition to formal schooling during or following the pandemic (and its variants)?

## 3. Review of the literature

Two theories served as the foundation for this study's conceptual framework: Winter and Kelley's (2008) theory of school readiness, which was derived from Bronfenbrenner's (1979, 1989) theory of bioecological systems, and Vygotsky's (1962) theory of social development. These theories align with the responsibilities of teachers to follow curricula and use strategies to ensure students acquire skills necessary for formal school readiness. Subsections that follow include information on social development theory and school readiness theory that grounded this study.

### 3.1. Social development theory

The zone of proximal development (ZPD), the more knowledgeable other (MKO), and social interaction make up the three main themes of Vygotsky's (1962) theory of social development. According to Vygotsky, social interaction development is guided by learning (Demirbaga, 2018). A person who is more knowledgeable than the child—a teacher, parent, older sibling, or peer—is known as the MKO. One could classify technology as an MKO (Eun, 2017). According to Eun (2017), the ZPD plays “a critical role in offering principles of effective learning in both formal and informal contexts in various domains of human functioning” (p. 18). A child's development happens within the three elements of social development theory (Demirbaga, 2018; Eun, 2017; Vygotsky, 1962).

### 3.2. School readiness theory

Winter and Kelly (2008) acknowledged Bronfenbrenner's bio-ecological theory as having a significant influence on school readiness theory. Researchers emphasized how each child's development was interrelated to contextual factors in the home, school, community, and nation, including political and governmental influences. Caregivers, family members, educators, community members, and city and national governmental entities were considered important influencing factors (related to COVID-19).

## 4. Methodology

A longitudinal qualitative interview study was carried out between mid-2020 and mid-2023, which was during and following the worldwide COVID-19 pandemic with its variants. Interview data from a total of 16 teachers were collected; 10 teachers were volunteer participants throughout the duration of the study. Data were coded and analyzed to identify recurring themes related to teacher practices for the development of student school readiness skills (see Creswell & Poth, 2017). The foundation of qualitative research involves people's opinions, and the interview and member-checking processes followed during each of the three phases of data collecting revealed PK–K teacher practices to support the development of student school readiness skills during the COVID-19 pandemic (see Creswell & Poth, 2017).

### 4.1. Setting

Email addresses for potential participants in mid-2020 were obtained from publicly available websites, which included campuses for PS/PK/K teachers from private and public school districts. All

volunteers were teachers working in preschools, elementary schools, or other early childhood programs. In the first phase, volunteers were screened to ensure that they met the criteria. Thirty-six invitations and consent forms were emailed to recruit volunteers for the first phase of the study. The invitation emails elaborated on the method of data collection (audio-recorded phone interviews, transcription of the audio recordings, summarization of data, and member checking). The email also included information about the intent of the study and volunteer/participant rights. In phase one, consent from 16 volunteer participants was received. Audio-recorded telephone interviews lasting between 45 and 130 minutes were conducted during all three phases. For phases two and three, only teachers who were volunteer participants for phase one were contacted for interviews and participation in the member-checking processes.

## **4.2. Participants**

Volunteers met criteria (teaching the PS/PK/K at the time of interviews, having a minimum of 3 years teaching PS/PK/K, being certified by the early childhood program of the school district and state) were interviewed. At the time of phase one interviews, participants were three PS/PK teachers, seven TK teachers, and four K teachers. Data saturation was reached at each phase (see Creswell & Poth, 2017).

## **4.3. Instrument**

For data collection and retention an audio recording application was used. Interviews were conducted using an open-ended interview protocol. To address the two research questions, the problem statement, and the goal of this study, interview questions and prompts were created and used that aligned with the framework. To ensure clarity and ease of understanding for all participants, all interview questions were composed in a formal, straightforward style devoid of any acronyms or vague terminology. A child development specialist with over 35 years of experience in the field of child development and education, certification expertise, and higher education early childhood faculty in a state university in the United States was consulted as an expert to review the interview protocol during each phase for the purpose of validity.

## **4.4. Procedure**

The collected data were analyzed using Braun and Clarke's six-step guide for thematic analysis and Saldaña's (2015) steps for coding were followed. Phase 1 of the analysis was to become familiar with data. At this point, recordings and transcripts of the interviews were reviewed. Phase 2 of the analysis focused on using a priori and open codes to organize the data into initial codes (see Saldaña, 2015). Coding is the process of identifying pieces of data that are of interest to the researcher and were relevant to the phenomenon under study (Braun et al., 2017). Using the conceptual framework as a guide, a priori coding, coding data segments that were relevant were used. A priori coding was used with each transcript to code other relevant pieces of data. A codebook was created to track codes as they expanded and collapsed to become categories and themes to answer the research questions. A visual representation on a Microsoft document was created to organize data pertinent to each code and category. Phase 4 was the review and refinement of themes by looking at data points to ensure they were relevant and create a discernible pattern for that theme. The second level reviewed the entire data set to ensure that the identified themes accurately reflected meanings uncovered within the data analysis. Phase 5 involved defining and naming the emerging themes. A detailed analysis for each theme, identifying the meaning behind each theme and how the themes related to each other were performed. Subthemes were identified within themes. Phase 6 was reporting the data. The story of the data was written to convince the reader about the longitudinal qualitative study's importance, reliability, and/or validity; and to ensure that reporting contained evidence of themes identified within data and that an analytic narrative answered the research questions.

## **5. Results**

Five themes that answered the research questions are included in this section. Themes reflect teacher practices related to the development of student school readiness skills.

### **5.1. Teachers modified their pedagogical practices and implemented new curricula to meet their students' needs at each phase**

Teachers mentioned that during the isolation period of the pandemic, they had to modify their curricula and practices to keep children engaged during virtual learning sessions. Part of the modification was to help young children learn how to navigate the Zoom virtual platform. Another modification was to keep children focused while their parents and siblings were in the same physical space with them during

their virtual school hours. Teachers had to become creative to help students with their manipulative activities. During the second phase, when students returned to school with many physical restrictions, teachers had to modify their practices to accommodate every child with necessary learning tools while keeping a 6-foot distance among students and continuously sanitizing toys and teaching tools. In the second phase, teachers stressed that they had to attend to students' social-emotional learning needs more than before, because when children returned to school, there were increased fears of infections from the coronavirus and its variants. Teachers reported that this group of students was more underdeveloped in their social-emotional skills because of isolation. Teachers created more opportunities for students to work with other students even within the 6 feet distance. During phase three, teachers mentioned that students were less ready for school than before the pandemic. They believed that COVID-19 and its variants had contributed to student underdevelopment in domains of learning. Teachers discussed that the parents of children who were infants or born within the isolation period of COVID-19 did not have support from teachers and caregivers to learn how to help their children develop school-readiness skills. Teachers' priorities became helping students progress toward reaching their developmental milestones.

### **5.2. Teachers were faced with continuous challenges that arose in response to the COVID-19 outbreak, isolation, and reestablishment periods**

During the first phase of this research, early childhood teachers were faced with challenges that were specific to young students. They were challenged by helping first-time students follow directions on a screen for a few hours each day, while there were others present in their house. Teachers reported being challenged by having parents or caregivers present in their virtual classroom, whom they viewed as depriving students of opportunities to learn and discover. Teachers faced challenges virtually teaching students to hold and use a pencil and scissors virtually. During the second phase, teachers were faced with challenges that arose due to social distancing and wearing masks. Teachers' roles changed from an educator to becoming health inspectors, caregivers, parenting consultants, technology experts, teachers, and mentors. Teachers accommodated students by using the teaching tools by taking turns while attending to student and parent fears and individual needs. They helped parents with feelings of fear and guilt. In phase three, teachers were challenged by having students who had not been achieving their developmental milestones. Some students were not potty trained or able to eat independently. Students at this phase had been infants during the isolation period. When these students started school, teachers reported they were delayed in demonstrating the abilities of typically developing children for their chronicle age.

### **5.3. Teachers' roles expanded as they advocated for children and collaborated with mental health and behavioral experts (school psychologists and counselors) for interventions on behalf of students who experienced trauma or developmental delays**

Isolation and fear of the unknown caused by the outbreak of the coronavirus resulted in paranoia and overprotective behavior of parents. In order to help them with their anxiety, teachers became advocates for children and collaborated with behavior specialists, school psychologists, and counselors. Some students' families were facing more traumatic situations, having lost a loved one. Advocating and collaborating with behavior specialists began in the first phase and continued during all phases. Teachers collaborated with specialists to learn new interventions and practices to help students and their families.

### **5.4. Teachers created communities of practice to avail themselves and other staff of peer mentoring and coaching support, which resulted in the expansion of their repertoire in pedagogy and curriculum**

Teachers were faced with unforeseen situations and formed communities of practice with collaborative mentorships with other teachers and school staff to support each other and share practices. In phase one, teachers and staff developed novel creative ways to support each other with technology and their students in learning, social-emotional learning, and physical development. Collaborative mentoring continued throughout phases two and three.

### **5.5. Teachers strengthened relationships with other teachers and students' parents while engaging in parent education and co-teaching strategies**

Teachers engaged parents in their classrooms, developed teamwork, conducted parent education, and used co-teaching strategies with parents, siblings, and caregivers to support student school readiness skill development. These practices began at phase one and continued through phases two and three. Teachers expressed appreciation for having opportunities to use technology for effective and flexible communication with parents. Teachers' mutually beneficial relationships with others strengthened.

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## EXAMINING THE EDUCATIONAL EFFECTS OF COOPERATIVE LEARNING USING A GIANT MAZE IN VIRTUAL REALITY

**Aya Fujisawa**

*Child Studies, Kamakura Women's University (Japan)*

### Abstract

In this study, I compared VR/HMD and VR/desktop conditions in a cooperative learning situation using a giant maze and examined the differences in educational effects. The participants were 24 female university students. Participants formed pairs and attempted to reach the goal by attempting to complete a giant maze in the VR collaborative learning material “ayalab Shall we walk?” Group cohesion, interpersonal reactivity (perspective-taking, fantasy, empathic concerns, and personal pain), and critical thinking attitude (awareness of logical thinking, inquisitiveness, objectivity, and emphasis on evidence) before and after cooperative learning in this maze were measured using Microsoft Forms. For these scales, I conducted an analysis of variance on three factors: survey timing (pre-test, post-test), conditions (VR/HMD, VR/desktop), and task achievement level (completed, incomplete). Results showed that group cohesion was high in the post-test. Perspective-taking increased in the VR/desktop/task-completed group, VR/desktop/task-incompleted group, and VR/HMD/task-incompleted group but did not change in the VR/HMD/task-completed group. The empathic concerns score was higher for the task-completed groups in the VR/desktop and VR/HMD conditions. The awareness of logical thinking score was higher in the task-completed group than in the task-incompleted group. The objectivity score decreased in the VR/desktop group and increased in the VR/HMD group.

**Keywords:** *Virtual reality cooperative learning, giant maze, VR/HMD, VR/desktop, educational effect.*

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### 1. Introduction

Various educational materials have been recently developed using virtual reality (VR) technology (Thompson et al., 2018) that have multiple advantages; those relevant to this study include gaining perspective-taking by wearing an avatar, influencing empathy without needing real-life experience (Cotton, 2021), increasing intrinsic motivation (Bailenson, 2017), enabling interactive learning (Graham, 2023), and benefiting collaboration (Ademola, 2023). In this study, I developed a giant virtual maze and clarified the abilities that can be fostered in VR cooperative learning in pairs.

The three main types of VR technology applications are CAVEs, VR/HMD, and VR/desktop. VR/desktop is the most familiar and functional method for using VR technology with a PC, iPad, or iPhone. Previous studies have generally been conducted using one of these methods. As CAVEs are rarely used in VR cooperative learning situations, this study focused on VR/HMD and VR/desktop. If the results demonstrate educational effects, they could encourage the use of VR materials in the classroom.

Generally, cooperative learning is considered an active learning method in which students participate actively in learning. Cooperative learning in this study involves wearing avatars in a virtual space and conducting cooperative work (VR cooperative learning); it can include such processes as interactivity and collaboration (Ademola, 2023; Graham, 2023), which are a strength of VR technology. To date, few educational benefits of cooperative learning using VR technology have been demonstrated. However, high-functioning autistic children aged 10–14 years (Ke & Moon, 2018) and native English-speaking children aged 7–11 years (Craig, Brown, Upright, & DeRosier, 2016) have been shown to increase their social skills by playing cooperative VR games. Furthermore, although not using VR technology, Ilten-Gee and Hilliard (2021) also analyzed students' transactions in paired game situations, suggesting the effectiveness of manipulative transactions. In other words, cooperative games significantly generate discussion that influence each player's thinking.

In the VR research domain, wearing an avatar in a virtual space is believed to allow one to adopt another perspective. This is called virtual reality perspective-taking (VRPT), and several studies have confirmed this phenomenon (Herrera, Bailenson, Weisz, & Zaki, 2018; Van Loon, Bailenson, Zaki, Bostick, & Willer, 2018; Fujisawa, 2023a). In addition, perspective-taking is enhanced (Fujisawa, 2023b)



and heart rate is increased (predicting a non-utilitarian response; Francis et al., 2016) in VR moral dilemma discussions, in which avatars are worn and moral dilemmas are discussed. Thus, although this study, in which avatars are worn in a virtual space and cooperative learning is conducted, does not directly address morality, it includes moral actions, such as helping and cooperating with each other in learning, and may be related to some aspects of morality.

In this study, I developed a giant maze, “ayalab Shall we walk?” and compared VR/HMD and VR/desktop in a VR cooperative learning situation to clarify what kinds of abilities are fostered depending on the device used in the same cooperative learning situation.

## 2. Methods

### 2.1. Participants

The participants were 24 female university students (age range 19–26 years; five had never used VR, eight had used VR two or three times, and 11 had used VR multiple times). They participated in pairs with a friend.

### 2.2. Procedure

The participants participated in the experiment in pairs of friends and were randomly assigned to the VR/HMD condition (MetaQuest 2) or the VR/desktop condition (iPad 9th generation). Both pair types were informed of the rules of VR maze learning: (1) enter the maze from the entrance, (2) reach the maze goal together as a pair, and (3) reach the goal as quickly as possible. Each pair had 10 minutes to complete the maze in the virtual space. Participants in the VR/HMD condition then entered individual small experimental rooms and, assisted by the experimenter, were fitted with a VR headset and handles and it was confirmed that they knew how to operate the handles. Participants in the VR/desktop condition entered individual small experimental rooms to confirm they knew how to operate the iPad. Participants in both conditions were alone in the small laboratory; however, they had online access and could converse in their pair and with the experimenter. During the VR maze learning, the experimenter followed each pair without interfering. During this process, the experimenter took notes on the pair’s discussion and recorded the avatar’s behavior. The virtual space used in this study was a giant maze set up in the VR walk, “ayalab Shall we walk?” Before and after this experiment, participants were asked to answer a questionnaire using Microsoft Forms.

### 2.3. Development of the virtual space

Prior to the implementation of this study, the VR walk, “ayalab Shall we walk?” (Figure 1) was developed using cluster, a metaverse platform. This virtual space allows visitors to stroll through a vast site that changes with the four seasons and is designed to be universally accessible. Originally, this virtual space was developed to allow truant children and their teachers or counselors to enjoy conversations while taking a slow walk in VR (VR walk) and the ease of expressing one’s feelings in the form of an avatar (Fujisawa, 2023b). This study was conducted only in the winter area. There was a steel tower on the upper floor of the entrance to the maze (Figure 1) that participants could climb to observe the maze from above. Whether to climb the tower and observe the maze from above was up to the participating pairs. However, the observation time was included in the maze time limit (10 minutes). During the maze challenge, participants could determine their current position and whether it was the first time they had passed through the maze by looking at the view above the maze corridor and at various items placed irregularly along the maze (Figure 2).

### 2.4. Survey contents

**2.4.1. Group cohesiveness.** I used the same items as Arai (2004), who adopted eight items from the Attitude toward Groups scale (Evans & Jarvis, 1986) to measure group attractiveness. It employs a 5-point scale, with 1 point assigned for “not applicable” and 5 points for “applicable.” Cronbach’s alpha coefficient was 0.96.

**2.4.2. Short version of the Critical Thinking Attitude Scale.** This scale (Kusumi & Hirayama, 2013) measures critical thinking attitudes and consists of four subscales: awareness of logical thinking, inquisitiveness, objectivity, and emphasis on evidence. Each subscale has three items. It employs a 5-point scale, with 1 point assigned for “not applicable” and 5 points for “applicable”.

**2.4.3. Interpersonal Reactivity Index.** This index (Davis, 1983) measures empathy using four subscales: perspective-taking (PT), fantasy (FA), empathic concerns (EC), and personal distress (PD). Each subscale has seven items. The index employs a 4-point scale with 1 point assigned for “not applicable” and 4 points for “applicable.” This scale is commonly used in previous VRPT studies (e.g., Herrera et al., 2018; Van Loon et al., 2018; Fujisawa, 2023a).

## 2.5. Scoring

The time from the start of the maze to the goal was measured.

## 2.6. Categorization

Pairs of participants who climbed the tower at the start of the maze and observed the maze from above were assigned as observed, and those who did not observe the maze were assigned as not observed. Those who were able to reach the goal within the time limit were assigned as “task-completed,” and those who were unable to reach the goal were assigned as “task-incompleted.”

## 3. Results and discussion

Six participants completed the task in the VR/HMD condition, and six participants did not complete the task. Eight participants completed the task in the VR/desktop condition, and four participants did not complete the task. In the VR/HMD condition, four participants climbed the steel tower above the entrance at the start of the maze and observed the maze from above, and eight participants did not. In the VR/desktop condition, four participants observed and eight did not. The results of the direct probability computation method for condition (VR/HMD, VR/desktop) and task (completed/incompleted) showed no significant difference. The time to reach the goal was 511.0 (0.0) seconds in the completed VR/HMD condition, 425.8 (45.7) seconds without observation in the completed VR/HMD condition, 369.0 (0.0) seconds with observation in the completed VR/desktop condition, and 450.0 (9.2) seconds without observation in the completed VR/desktop condition.

The basic statistics for the measures adopted in the pre- and post-tests are presented in Table 1. A three-factor analysis of variance was conducted for the subscales of group cohesiveness and the IRI as well as the critical thinking attitude scale: time of survey (pre-test, post-test), condition (VR/HMD, VR/desktop) and task (completed/incompleted). The results showed a significant main effect of survey timing on group cohesiveness ( $F(1, 20)=5.0, p<.05, \eta^2=.20$ ). Regardless of the device used, the results indicate that group cohesiveness was enhanced in the post-test compared with the pre-test. These results suggest that, even in VR cooperative learning without direct face-to-face contact, the participants felt more attracted to the pair after VR cooperative learning.

For IRI, perspective-taking had a significant difference on the interaction between the time, condition, and task ( $F(1, 20)=9.3, p<.01, \eta^2=.32$ ). Perspective-taking scores were higher in the post-test than in the pre-test for VR/desktop-task-completed, VR/desktop-task-incompleted, and VR/HMD-task-incompleted. However, there was no change in perspective-taking between the pre- and post-tests for VR/HMD-task-completed. It has been suggested that VR/desktops may make it easier to acquire perspective-taking skills. After the VRPT was confirmed in previous studies, perspective-taking using VR technology has been used in moral education and drama classes, and the results of this study support that research. However, cooperative VR learning with VR materials involving movement in a virtual space, as in this study, may be easier to operate with a tablet than with a VR/HMD. For empathic concerns, the interaction of condition and task was significant ( $F(1, 20)=4.9, p<.10, \eta^2=.13$ ). Empathic concern scores were higher in the post-test than in the pre-test for VR/desktop/task-completed, VR/HMD/task-completed, and VR/HMD-task-incompleted. However, there was no change in the empathic concern scores in the VR/desktop-task-completed test before and after the experiment. Empathic concerns may be enhanced in patients with VR/HMDs. Because VR/HMDs are three-dimensional (3D) in 360°, they are considered more immersive and sympathetic than VR/desktop 3D.

For the critical thinking attitude scale, logical thinking had a significant main effect on the task ( $F(1, 20)=9.7, p<.01, \eta^2=.33$ ). The post-test scores were lower after not completing the task than after completing it. This finding suggests that the transformation of logical thinking was related to whether the learning task was completed, not to which device the participants used. For objectivity, there was a significant difference in the interaction of time of survey and condition ( $F(1, 20)=4.8, p<.05, \eta^2=.20$ ). The learning task in this study was a maze learning task, and it might have been easier to grasp 360° and view the learning task (maze) objectively with VR/HMD than with VR/desktop. Although a learning task such as the present one, which involves movement using VR space, may be affected by participants' spatial cognitive ability, this is not clear from the results of the present study.

#### 4. Conclusion

In this study, I compared VR/HMD and VR/desktop in a VR cooperative learning situation and examined the abilities fostered by the devices used in the same cooperative learning task. The results showed no difference in the completion of learning using either device with respect to task accomplishment (arrival at the goal within the time limit). However, social abilities, such as empathy and objectivity, which were the focus of this study, were enhanced in the VR/HMD condition. These abilities may be more enhanced in cooperative learning with a 360-degree immersive device than in the other conditions. Furthermore, the abilities learned may differ depending not only on the device used but also on whether the task was completed. Therefore, it makes sense to change the type of device according to the ability that one wants to develop in the learning situation. At the same time, it was also suggested that it is necessary to consider the ability to be developed and whether or not the task can be completed.

Figure 1. Maze entrance and steel tower above the entrance to allow observation of the maze passageways from above



Figure 2. Examples of clues in the sky visible from the passageway of the maze (left side) and items placed in the passageway of the maze (right side)

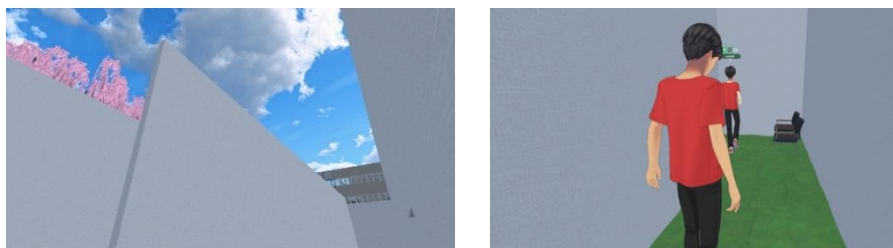


Table 1. Basic statistics for group cohesion and subscales of IRI

|           |           |              | awareness of logical thinking |     | inquisitiveness |     | objectivity |     | emphasis on evidence |     |
|-----------|-----------|--------------|-------------------------------|-----|-----------------|-----|-------------|-----|----------------------|-----|
|           |           |              |                               |     |                 |     |             |     |                      |     |
| Pre test  | VRdesktop | complete     | 12.8                          | 1.7 | 13.0            | 3.2 | 12.2        | 2.0 | 11.8                 | 3.4 |
|           |           | not complete | 11.5                          | 2.2 | 12.8            | 1.9 | 11.5        | 1.9 | 9.2                  | 3.3 |
|           | VRHMD     | complete     | 12.1                          | 1.2 | 12.6            | 1.3 | 12.3        | 2.1 | 9.6                  | 2.8 |
|           |           | not complete | 11.0                          | 1.2 | 12.3            | 1.0 | 11.5        | 3.0 | 10.8                 | 1.7 |
| Post test | VRdesktop | complete     | 13.2                          | 1.5 | 12.7            | 3.6 | 12.2        | 2.1 | 11.0                 | 3.8 |
|           |           | not complete | 9.3                           | 3.3 | 13.8            | 1.0 | 11.2        | 1.8 | 8.0                  | 3.9 |
|           | VRHMD     | complete     | 11.6                          | 1.8 | 13.0            | 1.5 | 12.5        | 1.9 | 9.8                  | 2.8 |
|           |           | not complete | 9.8                           | 2.9 | 12.8            | 2.6 | 13.8        | 1.3 | 10.0                 | 1.6 |

Table 2. Basic statistics for critical thinking attitudes.

|           |           |              | IRI            |     |      |     |      |     |      |     |      |     |
|-----------|-----------|--------------|----------------|-----|------|-----|------|-----|------|-----|------|-----|
|           |           |              | Group cohesion |     | PT   |     | FA   |     | EC   |     | PP   |     |
|           |           |              | M              | SD  | M    | SD  | M    | SD  | M    | SD  | M    | SD  |
| Pre test  | VRdesktop | complete     | 34.0           | 6.7 | 21.7 | 1.6 | 21.8 | 3.3 | 22.5 | 3.7 | 19.5 | 5.5 |
|           |           | not complete | 34.2           | 4.6 | 19.0 | 2.3 | 23.3 | 3.3 | 18.2 | 5.1 | 15.3 | 5.0 |
|           | VRHMD     | complete     | 36.8           | 2.7 | 21.8 | 1.5 | 24.0 | 3.1 | 21.1 | 1.8 | 18.6 | 5.9 |
|           |           | not complete | 38.5           | 0.6 | 21.0 | 0.8 | 21.5 | 4.5 | 22.8 | 1.5 | 17.3 | 4.2 |
| Post test | VRdesktop | complete     | 37.0           | 3.1 | 24.2 | 2.7 | 22.0 | 4.6 | 23.5 | 3.9 | 19.0 | 5.9 |
|           |           | not complete | 37.5           | 2.9 | 19.8 | 2.3 | 24.0 | 2.9 | 18.0 | 5.1 | 14.8 | 5.2 |
|           | VRHMD     | complete     | 38.4           | 1.6 | 22.0 | 1.7 | 23.6 | 2.6 | 21.5 | 3.3 | 18.9 | 5.4 |
|           |           | not complete | 38.0           | 3.4 | 23.8 | 1.3 | 20.5 | 4.1 | 23.3 | 2.4 | 16.3 | 3.4 |

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# THE LANGUAGE PRACTICES OF PARENTS AND CAREGIVERS IN RAISING MALAY-ENGLISH BILINGUALS – A CONCEPTUAL PAPER

**Fatin Nadiyah Mahmud, & Khazriyati Salehuddin**

*Centre for Research in Language Studies and Linguistics, Universiti Kebangsaan Malaysia (Malaysia)*

## Abstract

Parents and caregivers play an important role in their child's language development. Ideally, all Malaysians should be Malay-English bilinguals, as it is stated in the National Language Act that Malay is the National Language and English is the Official Second Language of the nation. However, in reality, not all Malaysians are Simultaneous or Sequential Early Malay-English bilinguals. Studies have shown that the language practices of parents and caregivers are an essential aspect in developing children as bilinguals. Raising children as Malay-English bilinguals can be challenging due to the inadequate input and exposure to both languages that the children may receive. Therefore, this study is aimed at exploring the language practices among parents and caregivers in raising their young child into Malay-English bilinguals. To achieve this aim, a community-based online survey will be distributed to parents and caregivers of 1- to 6-year-old Malay-English bilingual child throughout Malaysia. The survey consists of a set of parental report questions comprising four constructs based on Bandura's social learning theory, Skinner's theory of learning, Vygotsky's social development theory, and Krashen's comprehensible input theory. These four constructs employed are to identify the language practices of parents and/or caregivers to the children's language development via behavioral social learning, behavioral reinforcement and responses, cognitive development and language learning ability through scaffolding and social interaction, and language acquisition and language comprehension based on  $i + 1$  and comprehensible input. The implications of this future research may provide information on the right language practices that parents and caregivers may employ to raise their children as Simultaneous or Sequential Early Malay-English Bilinguals. In short, this study will hopefully materialize the Malaysian government's policy to strengthen the Malay language as the National Language and uphold the English language as the Official Second Language to achieve the Sustainable Development Goals (SDG-16).

**Keywords:** *Language exposure, parental language strategies, child language development, Malay-English bilinguals, bilingualism.*

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## 1. Introduction

Bilingualism is a common phenomenon and is growing in the majority of nations around the world (Fibla, Kosie, Kircher, Lew-Williams, & Byers-Heinlein, 2022). Malaysia, for example, is known for its multiracial population and high number of bilingual speakers. Mahmud and Salehuddin (2023) state that the Malay and English languages are the two dominant languages widely spoken and practiced among Malaysians. The issue of bilingualism in Malaysia has been a central issue since the English language is the Official Second Language in Malaysia, alongside the Malay language as the National Language as stated in the National Language Act. Ideally, all Malaysians therefore, should be Malay-English bilinguals. However, in reality, not all Malaysians are Simultaneous or Sequential Early Malay-English bilinguals; not all Malaysians end up being proficient in the English language. This could be due to the lack of language exposure to English towards Malay-English bilinguals, especially the younger children aged 1- to 6- years old. Studies have shown that the language practices of parents and caregivers are an essential aspect in developing children as bilinguals (Ronderos, Castilla-Earls, & Marissa Ramos, 2022; Gámez, Palermo, Perry, & Galindo, 2022).

## 2. Bilingualism

Bilingualism is common among children globally, as 43% of the world's population are bilinguals, including in Malaysia (Salehuddin & Mahmud, under review). The number of bilinguals in Malaysia may have increased due to language and education policy; it is compulsory for all Malaysians to

learn English in schools, and it is a common practice to use English alongside the Malay language in formal settings (Pillai, Kaur, & Chau, 2021). Even though using both Malay and English is a common practice in the Malaysian context, the majority of Malaysians still have difficulties being fluent and eloquent in both languages. This is because not all Malaysians are exposed to these two languages early in their lives and receive an adequate amount of input and interaction opportunities. The root of this problem could be due to the lack of English exposure at home, where many parents do not regard this as an essential practice; they may have the perception that their children will get exposure and input to English once they start schooling (Renganathan, 2021). This may result in children not being simultaneous and sequential early Malay-English bilinguals because of the inadequate input and exposure to both languages that the children may receive starting from home. Therefore, this study aims to explore the language practices among parents and caregivers in raising their young child to be bilinguals in Malay and English. To achieve this aim, a community-based online survey will be distributed to parents and caregivers of 1- to 6-year-old Malay-English bilingual children throughout Malaysia with the objectives:

1. To identify the practices that the parents and caregivers of 1- to 6-year-olds provide for their children to raise them as Malay-English bilinguals through a survey,
2. To measure the child's linguistic abilities in terms of children's expressive and receptive languages,
3. To investigate the effect of parents' and caregivers' language practices on the children's linguistic abilities.

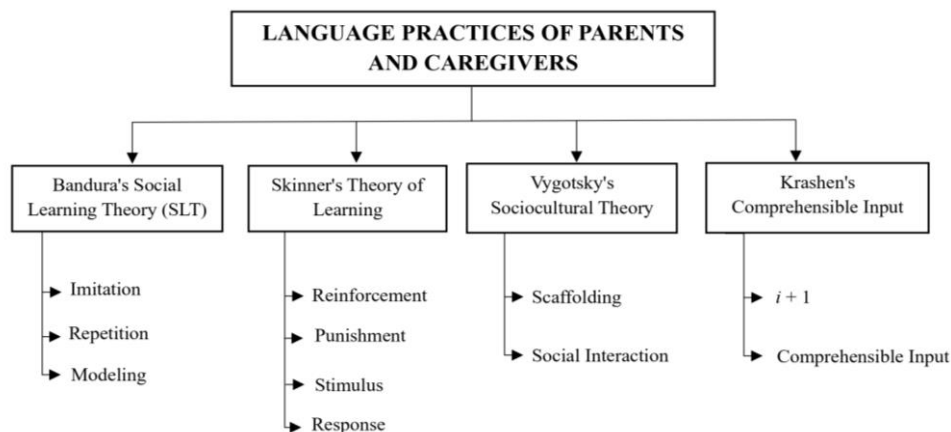
### 3. Method

We employ a quantitative approach via survey design as we are interested in exploring the language practices of parents and/or caregivers in raising children as Malay-English bilinguals. This study involves descriptive questions and questions about the effect of parents' and/or caregivers' language practices on children's language development (Creswell & Creswell, 2018). Therefore, this study consists of a survey in the form of a set of parental report questionnaires comprising four theories related to children's language development concerning social interaction, behavioral social learning, language acquisition, and language comprehension.

#### 3.1. A conceptual framework on parents' and caregivers' language practices

The survey consists of a parental report questionnaire comprising four constructs based on Bandura's Social Learning Theory (SLT) (1977), Skinner's theory of learning, Vygotsky's social development theory, and Krashen's comprehensible input theory. These four constructs employed are to identify the language practices of parents and/or caregivers to the children's language development via behavioral social learning, behavioral reinforcement and responses, cognitive development and language learning ability through scaffolding and social interaction, and language acquisition and language comprehension based on  $i + 1$  and comprehensible input.

Figure 1.



**3.1.1. Bandura's Social Learning Theory (SLT).** Bandura's Social Learning Theory (SLT) is to encourage self-efficacy to promote modeling and observational behaviors, which are similarly essential in language practices. Koutroubas and Galanakis (2022) highlight that Bandura justifies self-efficacy into four foundations, namely, 1) mastering past experiences (i.e., previous experiences or practices), 2)

vicarious experiences (i.e., achieved social modelling), 3) social persuasion (i.e., power of individuals which leads to success), and 4) emotional state (i.e., attributing emotions to performance). Given the context, these four foundations of self-efficacy in Bandura's SLT may impact children's language development via the language practices of parents and/or caregivers. In other words, Bandura's SLT triggers people (i.e., children) to learn from each other (i.e., parents and/or caregivers) through observation and modeling (Rumjaun & Narod, 2020). Bandura (1975) highlights that "the influential role of modeling processes in language acquisition is provided by naturalistic studies employing sequential analyses of children's verbalizations and the immediately following parental responses" (p. 36). Taken together, Bandura's SLT (i.e., modeling and observational behaviors) can accelerate the children's language acquisition when parents and/or caregivers perform language activities such as playing while demonstrating the act towards the children.

This is regarded as repeated behaviors which stimulate the children to imitate afterwards, in which acquiring language(s) through imitation and modeling can be effective. Samuelsson (2021) proposes that "imitation is not only restricted to words and phrases, but also can extend to the ability to read the intention of human movement and behaviors in context" (p. 25). Therefore, this explains that language and behaviors are intertwined with each other, which leads to successful attempts to acquire language(s) when carrying out routines such as rules, play roles and playful activities that can stimulate the children's emergent linguistic means.

**3.1.2. Skinner's Theory of Learning.** Salehuddin (2018) argues that children's behaviors are developed or conditioned through stimulus and response, and their developments are influenced by operant conditioning (i.e., reinforcements and punishments). In this regard, this condition contributes to how the children respond based on learned experiences, including when acquiring language(s). Given the importance of developed and conditioned behaviors, Aktan-Erciyes (2021) explains that language acquisition can be developed through operant conditioning, namely reward mechanisms. Skinner's theory of learning proposes that conditioning has a 3-state procedure, which are stimulus, response, and reinforcement, in which he argues that "every learning is the establishment of habits and the result of reinforcement and reward" (Demirezen, 1988 as cited in Ezenwa-Ohaeto & Ugochukwu, 2021, p. 50). According to Akpan (2020), there are two types of reinforcements that Skinner believes act as operant conditioning, namely positive and negative reinforcements. Positive reinforcement is achieved by giving a desirable stimulus after the behavior is demonstrated, whereas negative reinforcement results by taking away a desirable stimulus after a behaviour is displayed (Salehuddin, 2018; Akpan, 2020). Saracho (2021), for instance, notes that reinforcement occurs when a behavioral response is rewarded, such as by saying "That's good," "Good Job," or providing a physical reward like toys, food, or extra playtime. This increases the likelihood that the behavioral response will be repeated.

Skinner's theory of learning also proposes that children can learn and/or acquire language (s) when receiving punishment, which can be regarded as a stimulus to create a response. Children's language can be developed and triggered based on punishments, for example, 1) positive punishment (i.e., by giving something that the child like such as praising the child after completing a language task to encourage good behaviours) and 2) negative punishment (i.e., by removing something that the child does not like to encourage good behaviours (to encourage good behaviour)). Such punishments result from the sense of stimulus that leads to a response (Akpan, 2020), which later contributes to consequences (i.e., a sort of reinforcement) because it involves prior action and/or instruction that can trigger a behaviour to initiate an action (e.g., playing) that influence the ability to communicate from the early stage. As a result, these operant conditionings can ensure that desirable attention and behaviors are triggered in order to enable children to absorb the language practices from their parents and/or caregivers through reinforcement and punishment.

**3.1.3. Vygotsky's Sociocultural Theory.** According to Vygotsky and Dongyu, Fanyu, and Wanyi (2013), Vygotsky's Sociocultural Theory highlights the importance of social interaction and cultural context in language acquisition. For instance, an individual's capacity to acquire language is influenced by their social and cultural surroundings. One of the concepts in sociocultural theory which is relatively used in language development is "scaffolding". Wood, Bruner, and Ross (1976) introduced the idea of "scaffolding" in sociocultural theory; it describes how language is acquired based on environmental factors or on the assistance of an experienced individual (as cited in Dongyu et al., 2013; Hamidi & Bagherzadeh, 2018; Yildiz & Celik, 2020; Pacheco, Smith, Deig, & Amgott, 2021). In other words, scaffolding is seen as "a metaphor to theorise aid mediated through interaction to help a youngster do a new skill or function", as stated by Bruner (1983, as referenced in Hamidi & Bagherzadeh, 2018) (p. 2).

Based on Vygotsky's theory, scaffolding helps individuals develop new language skills by giving them clues or indications to help them respond to difficulties above their competency level (Huang, 2021). For instance, when acquiring a language, scaffolding can be given to someone who is struggling to

read until they can do it on their own (Sulaiman, 2021). At that point, the scaffolding can be taken down to allow the learner to read on their own. Apart from that, Nkamta (2020) proposes that scaffolding can occur during language acquisition when children acquire language(s) through code-switching and social interaction with more experienced individuals, such as parents and caregivers. In this regard, the one-person, one-language (OPOL) method that was previously discussed and is utilised by parents and caregivers might encourage code-switching in children, which will assist in their language development. This supports the use of Vygotsky's theory in this study since it allows us to assist children's effective language development by providing the proper input and exposure to begin developing their language(s) at home.

**3.1.4. Krashen's Comprehensible Input Theory.** In addition, Krashen's Comprehensible Input is also considered to illustrate significant influences in all areas of language learning and acquisition. According to Krashen's input hypothesis, learning a language can occur either through a conscious process called language learning or through a subconscious process called language acquisition (Zheng, 2022). Krashen (1981) argues that language acquisition is "a subconscious process in two senses: people are often not aware that they are acquiring a language while they are doing so" (p. 68). As per this theoretical model, language acquisition is contingent upon learners being exposed to language input that is marginally beyond their present level of language proficiency ( $i+1$ ); that is, where  $i$  represents the learner's current language level in Interlanguage and 1 denotes one stage (the input) above  $i$ . This is also addressed as 'comprehensible input', as Spada & Lightbown (2019) mentioned.

Krashen believes comprehensible input is crucial in language acquisition because learners require exposure to meaningful and relevant interactions in the target language to naturally acquire and grasp the language (Zheng, 2022). Therefore, understanding the language's structure and form should come after acquiring its meaning. Language acquisition occurs spontaneously and does not require formal instruction, according to Krashen, if children are exposed to sufficient comprehensible input. Regarding this theory, child-directed speech (CDS) can be explained by considering how parents and caregivers modify and adapt their speech to provide more comprehensible input for their children, understanding that their children cannot understand complex speeches. Furthermore, as Spada and Lightbown (2019) suggested, comprehensible input exposes language learners to language input and encourages them to acquire more complex input. Hence, it explains that language acquirers' success in improving their language skills is triggered by this input hypothesis, which exposes them to language input slightly above what they already know. Overall, Krashen's theory emphasizes the importance of the right kind of exposure to language and the role of subconscious acquisition in language learning and acquisition.

#### 4. Conclusion and implications

The implications of this future research provide information on the right language practices that parents and caregivers may employ to raise their children as Simultaneous or Sequential Early Malay-English Bilinguals. In short, this study will materialize the Malaysian government's policy to strengthen the Malay language as the National Language and uphold English as the Official Second Language to achieve the Sustainable Development Goals (SDG-16).

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## EMOTIONAL INTELLIGENCE AND SOCIAL MEDIA USE: DISSOCIATIVE EXPERIENCES AND FEAR OF MISSING OUT AS MEDIATORS

Danilo Calaresi<sup>1</sup>, Francesca Cuzzocrea<sup>1</sup>, Valeria Saladino<sup>2</sup>,  
Francesca Liga<sup>3</sup>, & Valeria Verrastrò<sup>1</sup>

<sup>1</sup>Department of Health Sciences, Magna Graecia University of Catanzaro (Italy)

<sup>2</sup>Department of Human, Social and Health Sciences, University of Cassino and Southern Lazio (Italy)

<sup>3</sup>Department of Clinical and Experimental Medicine, University of Messina (Italy)

### Abstract

The increasing prevalence of social media usage has sparked a growing interest in understanding the factors contributing to problematic social media use (PSMU). This study explores this phenomenon through the lens of the Interaction Person-Affect-Cognition-Execution (I-PACE) model. Specifically, it investigates whether the fear of missing out (FoMO) and dissociative experiences (DE) serve as sequential mediators in the relationship between trait emotional intelligence (trait EI) and PSMU, and whether the proposed model remains consistent across genders. The study involved 1216 adolescents in Italy (comprising 608 girls) aged between 14 and 17 years ( $M = 15.43$ ,  $SD = 0.86$ ). Participants completed several self-report assessments: the Trait Emotional Intelligence Questionnaire – Adolescent Short Form (TEIQue-ASF), Fear of Missing Out Scale (FoMOs), Adolescent Dissociative Experiences Scale (A-DES), and Bergen Social Media Addiction Scale (BSMAS). A Multivariate Analysis of Covariance (MANCOVA) was conducted to account for the influence of background variables. Subsequently, Structural Equation Modeling (SEM) with latent variables was employed to evaluate the mediation model. Finally, a Multiple-Group Path Analysis (MGPA) was conducted to assess the invariance of the mediation pattern across genders. Gender and parental educational level were controlled for in the main analyses based on MANCOVA's findings. SEM revealed exceptional fit indices for the hypothesized model:  $\chi^2(72) = 220.11$ ;  $p < .001$ , CFI = 0.99, RMSEA = 0.04 (90% CI = 0.04 – 0.05), SRMR = 0.02. All direct and indirect paths were statistically significant ( $p < .001$ ): from trait EI to FoMO ( $\beta = -.67$ ), to DE ( $\beta = -.22$ ), to PSMU ( $\beta = -.24$ ); from FoMO to DE ( $\beta = .43$ ), to PSMU ( $\beta = .43$ ); from DE to PSMU ( $\beta = .19$ ); from trait EI to DE through FoMO ( $\beta = -.29$ ), to PSMU through FoMO ( $\beta = -.29$ ); from trait EI to PSMU through DE ( $\beta = -.04$ ); from FoMO to PSMU through DE ( $\beta = .08$ ). MGPA highlighted the gender invariance of the model:  $\Delta\chi^2(14) = 22.17$ ,  $p = 0.08$ ,  $\Delta CFI = 0.001$ . The results of our study support the I-PACE framework, suggesting that trait EI may play a preventive role in mitigating PSMU by reducing the likelihood of experiencing FoMO and DE. Therefore, interventions aimed at enhancing emotional intelligence could be effective in minimizing the adverse consequences associated with PSMU. Additionally, addressing issues related to FoMO and DE and promoting the adoption of adaptive coping strategies may be valuable in fostering healthier patterns of social media usage.

**Keywords:** Trait emotional intelligence, dissociative experiences, fear of missing out, problematic social media use, adolescence.

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### 1. Introduction

Social media has revolutionized communication and information access, offering improved connections but also posing challenges such as problematic social media use (PSMU) (Kuss & Griffiths, 2017). This study explores factors linked to PSMU, examining the role of trait emotional intelligence (trait EI), fear of missing out (FoMO), and dissociative experiences. The Interaction Person-Affect-Cognition-Execution (I-PACE) model (Brand et al., 2019) provides a framework, suggesting that trait EI may influence PSMU through FoMO and dissociative experiences. Trait EI impacts cognitive processes and emotional management related to online experiences (Arrivillaga et al., 2022). FoMO involves emotional responses to potential online exclusions, driving continued engagement (Arrivillaga et al., 2023). Dissociative experiences reflect cognitive detachment in excessive social media use (Imperatori et al., 2023). Lower trait EI is associated with higher FoMO and possibly unhealthy

coping strategies, while higher trait EI is linked to effective emotion control and stress management (Brackett et al., 2011; Duroao et al., 2023). Gender differences in PSMU are inconclusive, with varying findings across studies (Ahmed et al., 2021; Su et al., 2020).

## **2. Objectives**

This study aims to fill gaps in existing research by investigating the interconnections among trait emotional intelligence (trait EI), fear of missing out (FoMO), dissociative experiences, and problematic social media use (PSMU) collectively. Additionally, the study aims to assess whether the hypothesized model remains consistent across genders.

## **3. Methods**

### **3.1. Participants**

The study involved 1216 Italian adolescents, evenly divided between girls and boys (608 each), aged 14 to 17 years, attending various high schools, including technical colleges, vocational colleges, and lyceums. Participants were recruited from different Italian cities using both offline and online methods by a team of forty-nine trained assistants located across Italy. Inclusion criteria specified individuals aged 14 to 17, fluent in Italian, engaging in social media for at least 1 hour daily on average, and with a minimum of six months' social media usage. Parents' educational attainment varied, with 17% of mothers and fathers having an elementary school diploma, 25% with a middle school diploma, 37% with a high school diploma, and 21% of mothers and 20% of fathers having a university degree.

### **3.2. Procedure**

This study received approval from the Institutional Review Board of the Institute for the Study of Psychotherapy, School of Specialization in Brief Psychotherapies with a Strategic Approach, in accordance with international standards such as the Helsinki Declaration and the Italian Association of Psychology (AIP). The study utilized Google Forms for participants to respond to an online questionnaire, with an average completion time of 15 to 20 minutes. All questions were mandatory, ensuring no missing data. Adolescents could only participate if their parents provided written informed consent. Participation was voluntary, with no rewards or compensations offered, and the privacy of participants was ensured throughout the research process. The study utilized IBM SPSS for descriptive statistics, correlations, and preliminary analyses, while the main analyses were conducted in RStudio using the lavaan package.

### **3.3. Measures**

Adolescents' trait emotional intelligence (EI) was assessed using the Trait Emotional Intelligence Questionnaire – Adolescent Short Form (TEIQue-ASF, Petrides et al., 2006). This questionnaire, demonstrated to have good validity in Italian adolescents, consists of 30 items rated on a 7-point Likert scale (1 to 7), where higher scores indicate elevated levels of trait EI.

Fear of Missing Out (FoMO) in adolescents was measured using the Fear of Missing Out Scale (FoMOs; Przybylski et al., 2013), known for its validity in Italian adolescents. Participants responded to 10 items on a 5-point Likert scale (1 to 5), where higher scores reflect greater levels of FoMO.

Dissociative experiences in adolescents were assessed using the Adolescent Dissociative Experiences Scale (A-DES; Armstrong et al., 1997), known for its validity in Italian adolescents. The scale consists of 30 items rated on an 11-point Likert-type scale (0 to 10), where higher scores indicate a higher degree of dissociative experiences.

Problematic Social Media Use (PSMU) was assessed using the Bergen Social Media Addiction Scale (BSMAS; Schou Andreassen et al., 2016), known for its validity in Italian adolescents and young adults. Participants responded to 6 items on a 5-point Likert-type scale (1 to 5), providing insight into the frequency of social media use. Higher scores reflect a greater degree of PSMU.

## **4. Results**

### **4.1. Descriptive statistics, correlations, and preliminary analyses**

Table 1 presents descriptive statistics and correlations among all study variables.

Table 1. Descriptive Analysis and Correlations.

|                                 | Min  | Max  | M    | SD   | Ske  | Kur  | $\alpha$ | 1     | 2    | 3    |
|---------------------------------|------|------|------|------|------|------|----------|-------|------|------|
| 1. Trait Emotional Intelligence | 1.47 | 7.00 | 4.94 | .99  | -.83 | -.17 | .91      | -     | -    | -    |
| 2. Fear of Missing Out          | 1.00 | 5.00 | 2.51 | .92  | .82  | -.35 | .89      | -.62* | -    | -    |
| 3. Dissociative Experiences     | .00  | 6.67 | 2.03 | .94  | .40  | .21  | .87      | -.47* | .52* | -    |
| 4. Problematic Social Media Use | 1.00 | 5.00 | 2.49 | 1.05 | .42  | -.92 | .83      | -.57* | .65* | .52* |

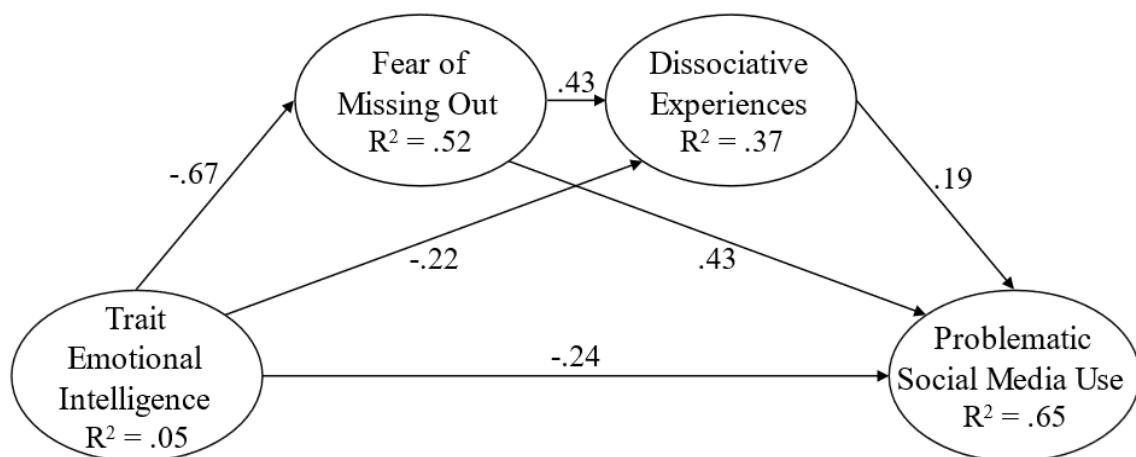
Note: \* $p < .01$ .

Preliminary analyses investigated the impact of gender and parental educational levels on study variables. A multivariate analysis of covariance (MANCOVA) revealed significant multivariate effects for both mothers' educational level (Wilks's  $\lambda = .96$ ,  $F(4, 1209) = 13.41$ ,  $p < .001$ ,  $\eta^2 = .04$ ) and fathers' educational level (Wilks's  $\lambda = .98$ ,  $F(4, 1209) = 7.52$ ,  $p < .001$ ,  $\eta^2 = .02$ ). Further analyses, conducted through univariate ANOVAs, highlighted the impact of parents' educational levels on specific study variables. Maternal education significantly affected trait EI ( $F(1, 1212) = 22.44$ ,  $p < .001$ ,  $\eta^2 = .02$ ), FoMO ( $F(1, 1212) = 46.80$ ,  $p < .001$ ,  $\eta^2 = .04$ ), dissociative experiences ( $F(1, 1212) = 19.78$ ,  $p < .001$ ,  $\eta^2 = .02$ ), and PSMU ( $F(1, 1212) = 39.19$ ,  $p < .001$ ,  $\eta^2 = .03$ ). Specifically, adolescents with more highly educated mothers reported higher trait EI and lower levels of FoMO, dissociative experiences, and PSMU. Similarly, paternal education had a significant effect on trait EI ( $F(1, 1212) = 8.28$ ,  $p = .004$ ,  $\eta^2 = .01$ ), FoMO ( $F(1, 1212) = 13.26$ ,  $p < .001$ ,  $\eta^2 = .01$ ), dissociative experiences ( $F(1, 1212) = 4.04$ ,  $p = .045$ ,  $\eta^2 = .003$ ), and PSMU ( $F(1, 1212) = 29.16$ ,  $p < .001$ ,  $\eta^2 = .02$ ). Adolescents with more highly educated fathers reported higher trait EI and lower levels of FoMO, dissociative experiences, and PSMU. No significant multivariate effects for gender were found (Wilks's  $\lambda = .99$ ,  $F(4, 1209) = .22$ ,  $p = .93$ ,  $\eta^2 = .001$ ). Although only mothers' and fathers' educational levels had multivariate effects on the study variables, the primary analyses were conducted with controls for gender, as well as both mothers' and fathers' educational levels. This approach aimed to ensure a conservative testing of hypotheses.

#### 4.2. Mediation model

The hypothesized mediation model was examined through Structural Equation Modeling (SEM) with latent variables (see Figure 2). The analysis revealed excellent fit indices, with  $\chi^2(72) = 220.11$  ( $p < .001$ ), CFI = .99, RMSEA = .04 (90% CI = .04 – .05), and SRMR = .02. Notably, significant paths were observed among all direct and indirect pathways, as detailed in Table 2.

Figure 1. Structural model of associations between Trait Emotional Intelligence, Fear of Missing Out, Dissociative Experiences, and Problematic Social Media Use.



Note: only direct paths are reported for presentation and clarity purposes; paths from background variables were not presented for presentation and clarity purposes; parcels were not presented for presentation and clarity purposes.

Table 2. Path Estimates, SEs and 95% CIs.

|   | $\beta$ | $p$    | SE  | Lower Bound (BC) 95% CI | Upper Bound (BC) 95% CI |
|---|---------|--------|-----|-------------------------|-------------------------|
| <i>Direct Effect</i>  |         |        |     |                         |                         |
| Trait Emotional Intelligence → Fear of Missing Out          | -.67    | < .001 | .03 | -.68                    | -.55                    |
| Trait Emotional Intelligence → Dissociative Experiences     | -.22    | < .001 | .05 | -.31                    | -.11                    |
| Trait Emotional Intelligence → Problematic Social Media Use | -.24    | < .001 | .05 | -.33                    | -.15                    |
| Fear of Missing Out → Dissociative Experiences              | .43     | < .001 | .05 | .34                     | .55                     |
| Fear of Missing Out → Problematic Social Media Use          | .43     | < .001 | .06 | .37                     | .58                     |
| Dissociative Experiences → Problematic Social Media Use     | .19     | < .001 | .04 | .13                     | .28                     |
| <i>Indirect Effect via Fear of Missing Out</i>              |         |        |     |                         |                         |
| Trait Emotional Intelligence → Dissociative Experiences     | -.29    | < .001 | .04 | -.36                    | -.20                    |
| Trait Emotional Intelligence → Problematic Social Media Use | -.29    | < .001 | .04 | -.38                    | -.22                    |
| <i>Indirect Effect via Dissociative Experiences</i>         |         |        |     |                         |                         |
| Trait Emotional Intelligence → Problematic Social Media Use | -.04    | < .001 | .01 | -.07                    | -.02                    |
| Fear of Missing Out → Problematic Social Media Use          | .08     | < .001 | .02 | .05                     | .14                     |

Note:  $p$  = level of significance; SE = Standards Errors; BC 95% CI = Bias Corrected-Confidence Interval.

### 4.3. Moderating role of gender

A multigroup path analysis was conducted on the hypothesized model to explore potential differences in structural paths between boys and girls. The analysis compared a constrained model where paths were set equal across the two groups ( $\chi^2(142) = 311.78, p < .001, CFI = .984$ ) with an unconstrained model allowing all paths to vary between the groups ( $\chi^2(128) = 286.44, p < .001, CFI = .985$ ). The fit indices of the unconstrained model were not significantly different from the constrained model, indicating structural equivalence across the two groups ( $\Delta\chi^2(14) = 22.17, p = .08, \Delta CFI = .001$ ). Therefore, the links between variables were found to be comparable for both boys and girls.

## 5. Discussion

The study, aligned with the I-PACE model, indicates that individual characteristics can act as protective or vulnerability factors in internet-related issues (Brand et al., 2019). Individuals with high trait emotional intelligence may be more attuned to social dynamics and relationships. If they lack emotional regulation skills, they might be more prone to experiencing FOMO, as they could have a heightened sensitivity to social cues and a desire to maintain social connections (Arrivillaga et al., 2023). The fear of missing out might drive individuals to continuously check social media, leading to a form of escapism or dissociation from their immediate surroundings or emotions. Hence, this can become a coping mechanism to alleviate the anxiety associated with missing out (Budnick et al., 2020). Using social media as a means of dissociation may contribute to problematic social media use. If individuals frequently resort to social media to detach from reality, it could lead to excessive use, neglect of other responsibilities, and potential negative impacts on mental health (Imperatori et al., 2023). The present study also supports the generalizability of results across genders, suggesting that variations in PSMU between boys and girls found in literature may stem from individual distinctions in trait EI, FoMO, and dissociative experiences. However, the study has limitations, including its cross-sectional design, which hinders establishing definite causal relationships. Furthermore, the online data collection method may introduce participant selection concerns and limit result generalization. Finally, reliance on self-report measures introduces the possibility of response biases, impacting the accuracy and reliability of observed associations.

## 6. Conclusion

The study's clinical implications are significant. Firstly, focusing on improving emotional regulation skills through enhancing trait EI in therapeutic approaches may empower individuals to effectively manage distressing emotions, potentially reducing impulsive social media engagement. Addressing avoidance strategies and helping individuals develop adaptive coping mechanisms could contribute to mitigating PSMU. Educational institutions could implement prevention programs fostering emotional intelligence, equipping young individuals to navigate online interactions judiciously. The study also suggests avenues for future research. While the current model provides valuable insights into trait EI, FoMO, dissociative experiences, and PSMU, longitudinal designs may reveal temporal stability and causal relationships. Investigating the influence of cultural and contextual factors on these relationships could offer further illumination. Additionally, evaluating technology-enhanced interventions, such as smartphone apps, for addressing PSMU may provide accessible solutions.

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# THE IMPACT OF ASSISTIVE TECHNOLOGIES IN EDUCATIONAL SETTINGS FOR INDIVIDUALS WITH NEURODEVELOPMENTAL DISORDERS: A NATIONAL PILOT STUDY

**Snezhana Kostova, Anna Lekova, & Paulina Tsvetkova**  
*Institute of Robotics, Bulgarian Academy of Sciences, 1113, Sofia (Bulgaria)*

## Abstract

The fostering of efforts to improve the inclusion of individuals with Neurodevelopmental Disorders (ND) has led to the widespread adoption of Assistive Technology (AT) at specialised centres and schools. Research findings indicate that utilizing AT can be beneficial for individuals with various ND, as it promotes the development of their psychological, communication and social abilities. This paper examines the perceptions and preferences of professionals regarding the impact of AT on educational and psychosocial outcomes for students with different disorders. In this study, a Delphi-based survey was carried out among a panel of 23 experts. They come from various occupational domains - speech and language centres, disability organisations, psychological centres and academia. We constructed a questionnaire, consisting of 26 statements and investigating different aspects of AT – education, society, service provision and employment. After two rounds of questionnaire surveying, the top two statements in each category were ranked by the professionals. In this way 10 questions were reserved and completed online. The statistical results of the survey show that there is a lot of consensus among Bulgarian experts on the Delphi statements. As a whole the experts are rather optimistic about the use of AT for individuals with developmental disabilities. Almost all of the stakeholders have intermediate or advanced level of expertise with respect to assistive technology. According to them the biggest challenges for the indicated statements in the survey to become reality are economic and political ones. Considering the results obtained in the study, integrating AT would provide more accessible educational environment for individuals with disorders and would facilitate specialists who work with them. The results of this study could offer valuable insights for the formulation of policies aimed at fostering greater inclusivity for individuals with disorders within educational environments, highlighting the need to expand the sample in future studies.

**Keywords:** *Assistive Technologies, educational settings, Neurodevelopmental Disorders, professional perceptions, Delphi survey.*

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## 1. Introduction

In the educational settings students with neurodevelopmental disorders encounter diverse challenges that limit their academic accomplishments and negatively impacts their behaviour across various classroom activities. It is crucial for these students to have equal access to education and opportunities in society, just like their peers. According to the UNESCO-Weidong Group project on “Leveraging ICT to Achieve Education 2030” “Information and Communication Technologies must be harnessed to strengthen education systems, knowledge dissemination, information access, quality and effective learning, and more effective service provision” (<https://unesdoc.unesco.org/ark:/48223/pf0000265598>). The initiative is in accordance with the worldwide agenda and its objective is to assist Member States in unlocking the maximum potential of ICT to advance the development toward achieving SDG 4. In this regard, Assistive Technology (AT) can serve as a means to enhance communication and boost academic performance of individuals with different disabilities. From a psychological point of view AT can also improve cognitive abilities and address challenging behaviors. AT could enhance the individual’s self-esteem and foster a more robust teacher-student relationship. In addition, AT promotes heightened peer interaction. The use of AT can be advantageous for individuals, supporting their academic, social and employment skills (Meida, n.d.). In a research related to the influence of technology, 67% of participants, specifically special education staff, indicated that AT positively affected the academic outcomes of students (Okolo & Diedrich, 2014).

Studies have affirmed that AT plays a crucial role in overcoming substantial learning challenges associated with learning disabilities (Brussino, 2020). AT, such as Socially-Assistive Robots (SARs), are increasingly used to improve communication skills in children and adolescents (Tsaneva et al., 2023). The findings in a systematic review indicate that the effective utilization of AT successfully enhances the inclusion of students with disabilities. However, obstacles such as inadequate teacher education, insufficient information or accessibility challenges were identified (Fernández-Batanero et al., 2022).

## **2. Methods**

### **2.1. Procedure**

A Delphi-based questionnaire was distributed via emails to Bulgarian professionals belonging to various backgrounds related to neurodevelopmental disorders. Subsequently, the gathered responses underwent analysis. The participants were informed that this study was confidential and voluntary. The survey was conducted in July 2023.

### **2.2. Participants**

The sample consisted of 23 experts who work in different professional fields – universities, disability organisations and neurodevelopmental centres. As a whole the participants are almost equally distributed -11 people work as practitioners (or 48%) and 12 people work in academia (or 52%). The stakeholders encompass a diverse range of age groups. Specifically, there are 3 participants aged 55-63, 4 individuals in the 45-54 age group, 7 respondents aged 25-34 and 9 experts in the 35-44 age group.

### **2.3. Measures**

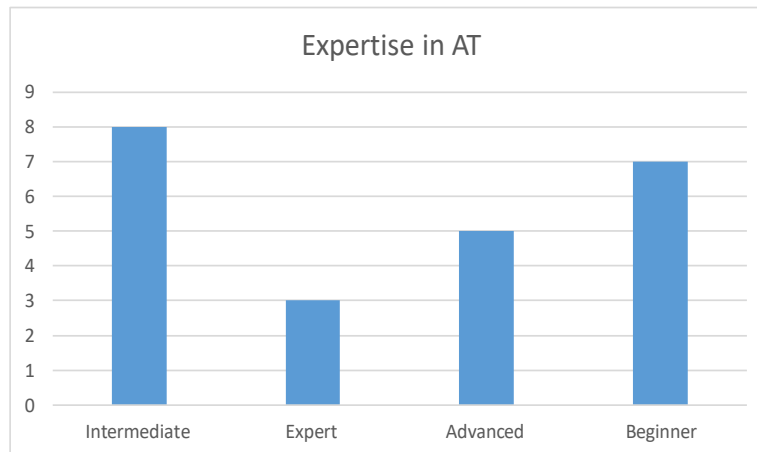
The questionnaire used in the current study is a researcher-made questionnaire, based on the Delphi technique. The Delphi technique involves a systematic approach to prediction, utilizing the combined insights of a panel of experts. Over the past few decades, Delphi methods have played a crucial role in formulating best practice recommendations by leveraging collective intelligence in situations where research is constrained, or ethical and logistical challenges exist, or when evidence is conflicting (Nasa, Jain, & Juneja, 2021). The selection of members for the Delphi expert group is primarily based on their professional competence in the research subject. These individuals are acknowledged experts in their respective fields, possessing a greater practical experience in related research topics compared to the general public (Murry & Hammons, 1995). In our case the participants are professionals who work in the field of neurodevelopmental disorders theoretically and practically. The consensus on the ideal number of members for the Delphi group varies. Some scholars suggest that in highly homogeneous Delphi groups, the optimal number of members falls within the range of 15 to 30, while in heterogeneous groups, the recommended range is 5 to 10 members (Delbecq & Gustafson, 1975). In terms of our study, the range of participants is between 15 and 30, so we comply with the requirements for a homogeneous Delphi group.

## **3. Analysis of the results**

One of the main themes in the current paper is AT and the primary focus is on the impact of AT on the treatment of neurodevelopmental disorders in the near future – by 2030. Even though the respondents work in the field of those disorders, they have a relatively high expertise in AT. 8 people are experts or advanced, 8 participants have intermediate knowledge in AT and 7 people are beginners. The results are shown in the table below.

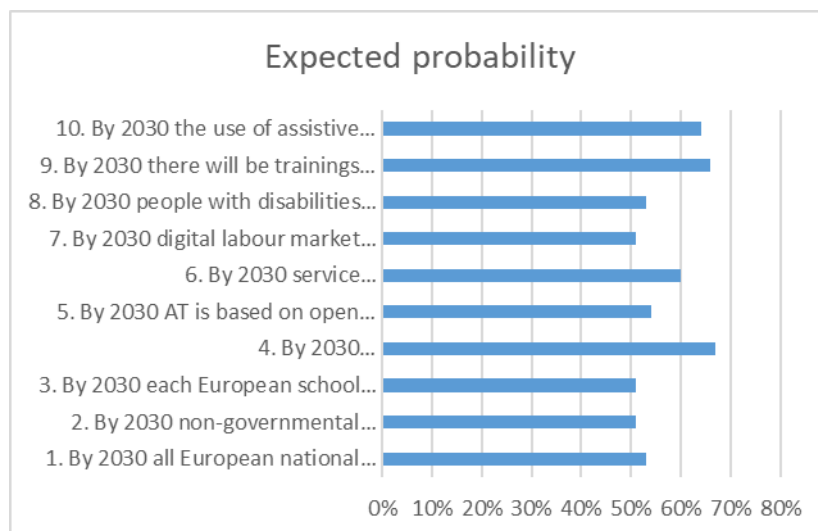


Table 1. Expertise in Assistive Technology.



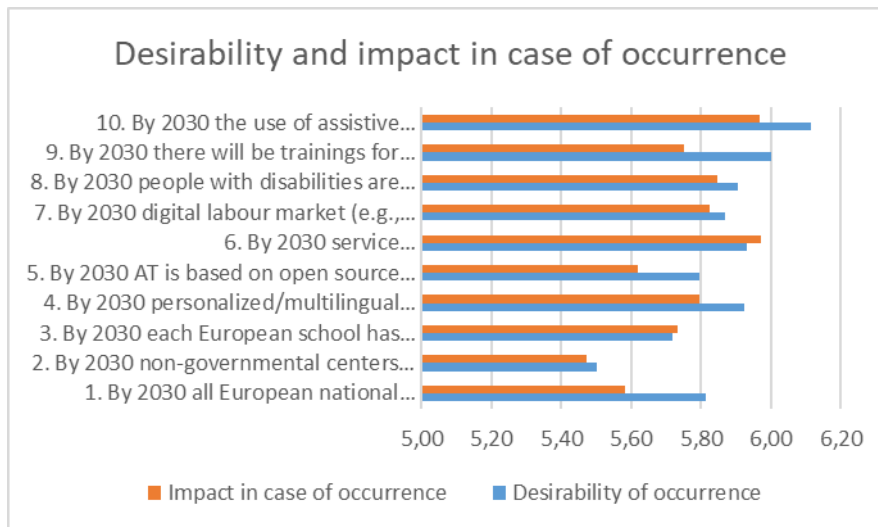
An essential part in a typical Delphi survey is the expected probability of certain scenarios to come true in the near future. In our study these potential occurrences are linked to different aspects of assistive technologies - education, society, service provision and employment, all intertwined with the future period of 2030. An example of the Delphi projections is “By 2030 the use of assistive technologies is included in the professional development of educators in mainstream schools.” The collective probability of over 50% for all Delphi statements indicates a prevailing sense of optimism among respondents regarding the use of these technologies. This optimistic outlook may stem from a positive assessment of current trends and anticipated advancements. The likelihood percentages suggest a general consensus among respondents in favor of the development and accessibility of the assistive technologies. The results observed are displayed in table 2 below.

Table 2. Expected probability of the Delphi scenarios.



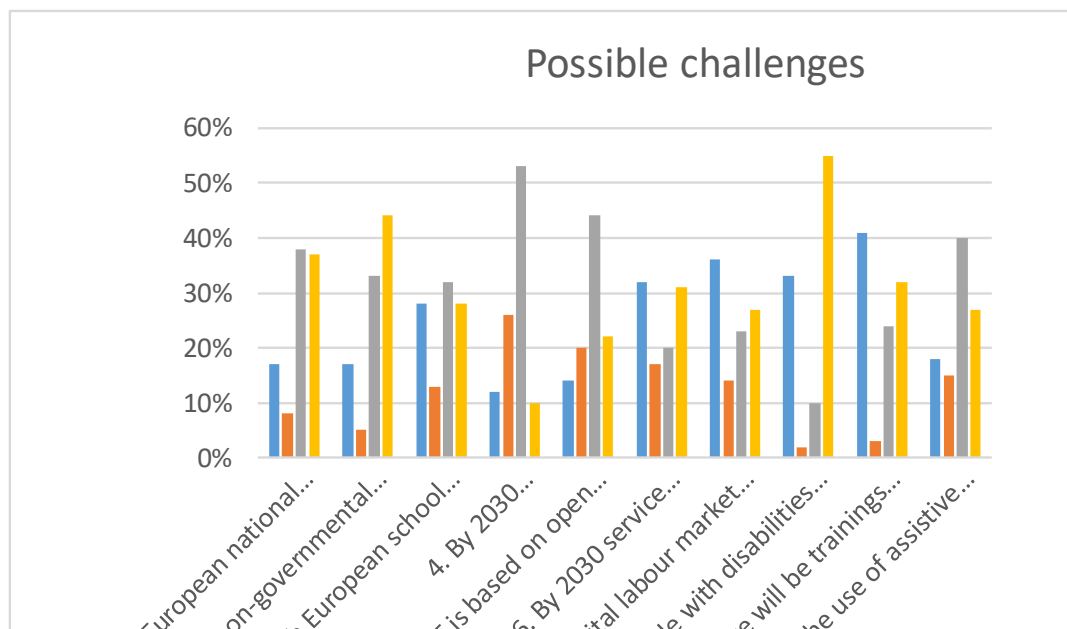
Another theme in the Delphi survey was the assessment of desirability and the potential impact of the identified scenarios. A 7-point Likert scale has been used. The results indicate a notable level of desirability, exceeding 5 and even reaching 6 for statements associated with training for individuals in public services on how to interact with someone with ASD, as well as utilizing assistive technologies for the professional development of educators in mainstream schools. The close alignment between desirability and impact findings suggests a strong correlation, with minimal divergence between the perceived positive desirability and the expected impact in the event of occurrence. The uniformity in these findings strengthens the favorable attitudes, expressed by respondents regarding the potential benefits of these specific aspects within the surveyed scenarios. A visualization is shown in the next chart.

Table 3. Expected probability of the Delphi scenarios.



The other aspect of the survey was focused on possible challenges hindering the realization of the aforementioned scenarios. The proposed challenges were political, economic, technological and social. For almost every statement, respondents identified political or economic challenges as the most significant obstacles. The prevalence of political or economic challenges in respondents' concerns may be attributed to the complex interplay between government policies and socioeconomic conditions. Political instability, policy uncertainties and economic fluctuations could potentially shape individuals' perspectives, leading them to highlight these aspects as primary challenges. The following table illustrates the observed results.

Table 4. Possible challenges related to the Delphi projections.



#### 4. Discussion

The aims of the study were to determine the perspectives of a panel of professionals on how assistive technologies influence the educational environment for individuals with diverse neurodevelopmental disorders. Participants, representing various vocational backgrounds such as educational and psychological centers, disability organizations and academia, provided valuable insights. The statistical analysis of the survey data revealed a substantial level of agreement among Bulgarian experts regarding the Delphi statements. The Delphi technique used in the study serves as a valuable tool

for gauging the expected probability of specific scenarios related to the integration of assistive technologies in various domains. The respondents express optimism regarding the utility and advancement of assistive technologies in the context of neurodevelopmental disorders. The identified potential occurrences, ranging from education and society to service provision and employment, are intricately linked to the envisioned landscape of 2030.

Despite the overall positive outlook among the respondents, regarding the future of assistive technologies, the study acknowledges the importance of addressing some potential challenges. The identification of these challenges underscores the need to overcome multifaceted barriers to ensure the successful integration and realization of the envisioned scenarios surrounding the use of assistive technologies in the future. In conclusion, while the Delphi technique employed in this study proves to be a valuable tool, recognizing the limitations related to the small sample size, we advocate for a future research endeavor with a larger sample to ensure broader applicability and reliability of the study's outcomes. Exploring the evolving intersection of technology and education, society and service provision will provide valuable insights into the ongoing evolution of assistive technologies. This evolving domain offers the potential not just to tackle present challenges but also to cultivate a future that is more inclusive and supportive for individuals with neurodevelopmental disorders in the years to come.

### *Acknowledgment*

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## MENTALIZATION, SOFT SKILLS AND LEARNING

**Alessandro Frolli, Francesco Cerciello, Clara Esposito,  
Rossana Pia Laccone, & Fabio Bisogni**

*Department of International Humanities and Social Science,  
Rome University of International Studies (Italy)*

### Abstract

Mentalization is the ability to infer other mental states, desires and intentions. It could be implicit, explicit or it may refer to self and others or it may be cognitive or affective. It underpins the complexity and the creation of social interactions. It is now understood that mentalizing is not a singular process; rather, it encompasses a range of specific and nonspecific sub-processes, known and unknown, including emotions, reasoning, understanding causality, and distinguishing between self and others. Social skills such as communication and cognition become part of the umbrella term “soft skills” when it comes to negotiation skills and the ability to interact positively with each other. The term "soft skills" refers to qualities and competencies that individuals can use transversally in different contexts, e.g., adaptability, flexibility, responsibility, integrity and efficiency. Furthermore, the labour market acknowledges and rewards these skills owing to their capacity to confer flexibility and adaptability, thereby embodying the competing attributes of the future workforce. Communication skills entail discourse, dialogue, and strategic communication aspects, which serve the individual to communicate successfully and according to the individual situation and context in view of empathy for her/his own and others' needs. It comprises presentation skills, negotiation skills, client communication, and active listening. Moreover, people better equipped with emotional intelligence can form meaningful relationships and become better listeners, leaders, and decision-makers. The study is aimed to show if a specific educational intervention through activities based on mentalization skills and soft skills could increase academic career (specifically we consider Math, Physics, Literature and Philosophy in terms of academic average). The educational intervention was based on frontal lessons and laboratory activities in which pupils learnt about mentalization processes and they had the opportunity to stimulate their ability to infer other mental states. We recruited 160 participants aged between 15 and 16 from 4 different high schools. The results show that a specific educational intervention based on soft skills and activities based on the reasoning of themselves and other's perspective may improve academic career in terms of an academic average increased. In addition, there was a difference between humanistic and scientific subjects. In conclusion, our study proposes how the enhancement of mentalization skills and associated soft skills can improve academic performance in schools.

**Keywords:** *Mentalization, soft skills, learning, intervention, education.*

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### 1. Introduction

Bateman and Fonagy (2004) define mentalization as "the mental process by which an individual implicitly and explicitly interprets the actions of self and others as meaningful on the basis of intentional mental states such as personal wants, needs, feelings, beliefs, and reasons. Within this definition, Bateman and Fonagy identify three dimensions of mentalizing: the first refers to two modes of functioning (i.e. implicit and explicit), the second to two objects (i.e. self and others), and the third to two aspects (i.e. cognitive and affective) of both the content and the process of mentalizing. Aggressive children are less accurate in identifying emotions than prosocial and altruistic classmates (Bateman & Fonagy, 2004). Children with conduct disorders show low levels of mentalizing. Hypo-mentalization reflects an inability to consider complex models of mental states, resulting in an impaired ability to understand others and the self. Hypo-mentalization may result from reduced affective sensitivity in parents due to various reasons such as high levels of stress, anxiety or parental conflict (Davies & Cummings, 1994). In addition, the concept of soft skills is fundamental. The term "soft skills" refers to a set of positive personal qualities and competencies that enhance relationships (Sejzi et al., 2013). In

particular, it refers to qualities and competencies that individuals can use transversally in different contexts, e.g. adaptability, flexibility, responsibility, integrity and efficiency. In addition, it also refers to predispositions or attitudes such as a willingness to learn and a strong motivation to acquire additional skills. Social skills such as communication and cognition become part of soft skills when it comes to negotiation skills and the ability to interact positively with each other (Touloumakos, 2020). The latter also refer to a set of skills that determine how we interact with others (Sejzi et al., 2013); this depends on the quality of mentalization processes. Soft skills are interpersonal, psychological, self-promoted and non-technical qualities. They can interact with learning processes as they relate to the social environment and the ability to form cooperative groups or teams. In addition, they also relate to good communication skills, initiative to solve problems creatively, positive attitudes and self-confidence (Dalaya et al., 2015). All these factors inevitably affect the learning of academic skills such as reading, writing or arithmetic. Math problems may be computational (dyscalculia) and involve problem solving skills (Fletcher & Grigorenko, 2017). Moreover, problem solving is involved also in reading and writing difficulties in terms of word-problem solving. Word-problem solving is the best school-age predictor of adult employment and wages, so it is essential in the span life. Good communication skills affect academic ones because of the correlation between those abilities such as reading comprehension and writing skills in which there is a manipulation of verbal stimuli (Fuchs et al., 2019). The association between learning difficulties and aspects of self-esteem and self-confidence are well documented and may have implications on individuals' coping style in and out of school, academic achievements, and general wellbeing (MacMaster et al., 2002; Valas, 1999). In this study the focus was on soft skills in the light of an active improvement of mentalization processes through an innovative teaching style that involves such skills. We wanted to analyze the correlations between the reflective functions of the student and learning skills, through a sample of 160 adolescents between 15 and 16 years of age. The scientific contribution made highlights the importance of transversal skills in innovative teaching.

## 2. Methods

In this study, we considered 160 participants aged between 15 and 16. All the participants had been recruited from the same city (Rome, Italy) belonging to 4 high schools (scientific address) and they were homogeneous in terms of the socio-cultural background of the parents. Therefore, the inclusion criteria were as follows: (a) an IQ between 95-105 through the WISC-IV (Wechsler, 2003; Orsini et al., 2012); (b) absence of other psychiatric illness assessed by K-SADS (Ambrosini, 2000); (c) medium-high socio-cultural class assessed through the SES scale (Rossi, 1994).

After confirming the inclusion criteria of the sample, the participants did not have different sociocultural factors. The experimental group is composed of 160 participants with an average age of 15.36 (SD 0.42) and an average SES index of 6.72 (SD 1.20), of which 71 are males and 89 females.

In order to assess academic skills, the average of specific subjects (Math, Physics, Italian Literature and Philosophy) was assessed in two times: the first time (T0) after 4 months since the beginning of the school, and the second time (T1) at the end. The interventions lasted 5 months, one time per month. The data were collected at the Rome University of International Studies (UNINT).

### 2.1. Instruments

The protocol used consists of the following tests:

- SES: Self-administered questionnaire that allows collecting information about the level of education and professional of parents and indicates the position of the person or family within the social system (Rossi, 1994);
- WISC-IV: the IQ has been evaluated through the administration of Wechsler scales (Wechsler, 2003), multicomponent intelligence scales that allow to synthesize the intellectual ability through a global IQ index, the Verbal Comprehension Index (ICV, verbal reasoning ability on the basis of previously learned information), the Visuo-Perceptive Reasoning Index (IRP), the Index of Working Memory (IML, ability to maintain information and use it within seconds) and the Processing Speed Index (IVE, ability to process information efficiently).
- YRFQ – 8: to provide an easy to administer self-report measure of mentalizing. It is composed of 8 item on the ability to infer mental states (Fonagy et al., 2016);
- K-SADS: a diagnostic interview for the evaluation of psychopathological disorders (past and present) in children and adolescents aged 6 to 17 years according to the criteria of DSM-5. It consists of: an introductory unstructured interview, a diagnostic screening interview, a checklist for the administration of diagnostic supplements, five diagnostic supplements (mood disorders, psychotic disorders, anxiety disorders, attention deficit disorders and disruptive behaviour, substance abuse) for each of which the criteria required by the DSM are provided, a

comprehensive checklist of the patient's clinical history and a scale for the overall assessment of the current functioning of the child (VGF) (Ambrosini, 2000).

## 2.2. Procedures

We administered the Y-RFQ 8 after 4 months from the beginning of school. We measure the academic average of the following subjects: Math, Physics, Italian Literature and Philosophy. After that we provided the intervention. It was composed of training courses (frontal lessons and laboratory activities) organized by the Rome University of International Studies (UNINT). It is structured as follows: an overall of 15 hours divided into 5 modules (3 hours each). Three theoretical modules that provide lectures with final debate among students. The first one was a theoretical lesson on the emotional regulation and affective development; the second one was on the awareness of themselves and the other one focusing on know our and the others' mind; the third one was on our relationships and the differences between each other. Moreover, the practical modules were respectively on the exploration of our emotions and telling our life history to the class as an instrument of self and the other-knowledge. The intervention lasted 5 months and it was repeated one time per month. Finally, we assessed Y-RFQ 8 and we measured the academic average at the end of the school year.

## 3. Results

Data analysis was conducted using SPSS 26.0 statistical data collection software. Significance at the 5% level ( $\alpha < 0.05$ ) was accepted.

We compared all the sample at T0 and T1 (within variable - time) to assess whether there were improvements in mentalization skills (RFQ\_C and RFQ\_U) after narrative teaching training. We also wanted to find out if there were any improvements after the teaching training, both in the humanities and in scientific subjects. Therefore, we performed three ANOVA repeated measurements: in the first ANOVA we have the within factor (time at 2 levels) and dependent variable at 2 levels (scale=RFQ\_C and RFQ\_U). In the second ANOVA we have the within factor (time to 2 levels) and dependent variable scale SD (scientific subjects), and in the third ANOVA we have the within factor (time to 2 levels) and dependent variable scale UD (humanistic subjects).

These analyses showed the following results: Interaction between RFQ\*time is significant [ $F(1,159) = 236.853, p < 0.001$ ]. This data indicates that there is a significant interaction between the two subscales and time. More specifically, after the intervention there is a significant improvement in mentalization skills; at T0 the RFQ\_U was low while the RFQ\_C was high, while at T1 both tend to normalize (Table 1).

Table 1. Interaction between time\*RFQ.

| Time | Scale | Means | SD   | F       | P       |
|------|-------|-------|------|---------|---------|
| 0    | RFQ_C | 9.17  | 1.92 | 236.853 | <0.000* |
|      | RFQ_U | 7.60  | 0.61 |         |         |
| 1    | RFQ_C | 8.41  | 0.49 |         |         |
|      | RFQ_U | 9.43  | 0.49 |         |         |

\*Statistical significance

Interaction between UD\*time is significant [ $F(1,159) = 498.727, p < 0.001$ ]. This data indicates that there is a significant interaction between academic performance and time. More specifically, there is a more significant improvement after the teaching intervention in the school average in relation to the humanities (Table 2).

Table 2. Interaction between time\*UD.

| Time | Scale | Means | SD   | F       | P       |
|------|-------|-------|------|---------|---------|
| 0    | UD    | 5.77  | 0.80 | 498.727 | <0.000* |
| 1    | UD    | 8.15  | 1.05 |         |         |

\*Statistical significance

Interaction between SD\*time is significant [ $F(1,159) = 189.803, p < 0.001$ ]. This data indicates that there is a significant interaction between academic performance and time. More specifically, there is a significant improvement in the school average after the teaching intervention (Table 3).

Table 3. Interaction between time\*SD.

| Time | Scale | Means | SD   | F       | P       |
|------|-------|-------|------|---------|---------|
| 0    | SD    | 5.67  | 0.81 |         |         |
| 1    | SD    | 6.71  | 0.53 | 498.727 | <0.000* |

\*Statistical significance

#### 4. Discussion

Mentalization as a theory of mind encompasses a set of skills that enable humans to solve problems in a world full of other minds. Examples include our ability to infer other people's emotions, to understand the visual perspective of others, to attribute behavior to the underlying intentions and desires of actors, and to grasp the fact that others' beliefs may misrepresent reality (Apperly, 2012; Apperly et al., 2008; Baron-Cohen et al., 1997; Flavell et al., 1981). Our results show an improvement in mentalization skills after the intervention. We explain this result because through a teaching based on the teaching of mentalization skills has somehow increased students' awareness of these skills.

Moreover, our teaching intervention had an effect on academic average of specific subjects that we divided into humanities and scientific. There was a major improvement in the humanities one.

Numerous studies have found that a combination of personal qualities and soft skills can help improve the employability of graduates (Wye & Lim, 2009), especially soft skills that are broadly applicable (Attakorn et al., 2014). They also refer to a set of skills that determine how we interact with others, so their relationship to mentalization is obvious (Sejzi et al., 2013).

The description of soft skills helped us predict improvement in the academic subjects analyzed. Qualities (some of which can be found in the emotional intelligence literature) such as adaptability, flexibility, responsibility, courtesy, integrity, professionalism and effectiveness, as well as values such as trustworthiness and work ethic (Wats & Wats, 2009; Touloumakos, 2011; Robles, 2012; Ballesteros-Sánchez et al., 2017); voluntariness, predispositions, attitudes such as good attitude, willingness to learn, learning to learn other skills, diligence, working under pressure or uncertainty (Stasz, 2001; Stasz et al., 2007; Andrews & Higson, 2008; Cinque, 2017); problem solving, decision making, analytical thinking/thinking skills, creativity/innovation, handling knowledge, critical judgement (Cimatti, 2016; Succi, 2019; Succi & Canovi, 2019; Thompson, 2019); other areas covered are cognitive skills or processes (Ballesteros-Sánchez et al., 2017, Cimatti, 2016; Thompson, 2019), the ability to plan and achieve goals (Cimatti, 2016).

All of these contribute to learning strategies and method of study. An effect on the learning abilities of such subjects may have been occurred. Better methods of study resulting from implications on individuals' coping style in and out of school, academic achievements, and general wellbeing (MacMaster et al., 2002; Valas, 1999) could lead student to a better academic career.

#### 5. Conclusion

In conclusion, our study proposes how the enhancement of mentalization skills and as-associated soft skills can improve academic performance in schools. However, the relationships between colder cognitive processes that could be investigated in future studies remain uncertain, in the perspective of structuring a teaching that has the goal of im-proving the individual's skills for future job success. Finally, more in-depth studies are recommended that also take these aspects into account.

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## DESCRIPTIVE NORMATIVE BELIEFS AMONG YOUNG ADOLESCENTS. A SOLOMON FOUR GROUP DESIGN

**Oľga Orosová, Ondrej Kalina, Beáta Gajdošová, & Jozef Benka**  
*Department of Educational Psychology and Health Psychology, Faculty of Arts,  
Pavol Jozef Šafárik University in Košice (Slovak Republic)*

### Abstract

The EU school-based universal drug use prevention program Unplugged is based on education regarding drugs and drug use, normative beliefs and improving life skills. It consists of 12 lessons and is primarily designed for 12-14-year-old adolescents. The aim of this study was to explore the effects of Unplugged and gender over time on adolescents' descriptive normative beliefs about smoking (DNB<sup>S</sup>) and alcohol consumption (DNB<sup>AC</sup>). Method: A cluster randomized control trial using a Solomon four-group design, which enabled testing for the presence of pre-test sensitization, was carried out. The data collection was carried out immediately before implementing the program (T1, experimental and control group with a pre-test), immediately after implementing the program (T2) and one year after implementation (T3). Twelve schools were assigned to the experimental group (EG, n = 798) and twelve schools were assigned to the control group (CG, n = 622). The sample consisted of 1424 adolescents in total (the mean age = 13.5 years, SD = 0.59; 47.5% girls). In this design, both EG and CG had two subgroups: a pretested group<sup>PT</sup> and a non-pretested<sup>nPT</sup> group (n/EG<sup>PT</sup> = 397, n/EG<sup>nPT</sup> = 401, n/CG<sup>PT</sup> = 333, n/CG<sup>nPT</sup> = 289). In order to increase the effect of Unplugged, booster-sessions called nPrevention were carried out (EG+) after T2. The aim of nPrevention was to strengthen the preventive effect of Unplugged. Outcome variables were examined with GLM repeated measures analyses. DNB<sup>S</sup> and DNB<sup>AC</sup> increased over time (from T1 to T2 and from T2 to T3). There was a significant interaction effect between DNB<sup>AC</sup> x Group (CG, EG, EG+ all without pretesting). DNB<sup>AC</sup> increased from T2 to T3 among adolescents of all groups, but this increase was more pronounced only for adolescents of CG and EG. Next, the interaction DNB<sup>AC</sup> x Group (CG, EG, EG+, all without pretesting) x Gender was significant. DNB<sup>AC</sup> increased from T2 to T3 in boys in all groups, but only in girls from CG and EG. The decline of DNB<sup>AC</sup> in girls of EG+ was found from T2 to T3. An increase in DNB<sup>S</sup> and DNB<sup>AC</sup> was found over time. The implementation of Unplugged with booster sessions and without pretesting could be an important factor for prevention of alcohol consumption. One of the possible interpretations is that it supports intrinsic motivation, which can be assumed especially for girls who participated of the prevention program.

**Keywords:** *Descriptive normative beliefs, young adolescents, alcohol consumption, smoking, unplugged.*

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### 1. Introduction

Descriptive normative beliefs among peers in adolescence have been found to be predictors of primary importance regarding smoking initiation, smoking, alcohol use and use of other drugs (Hansen, Saldana, & Ip, 2022).

The studies focusing on social norms within the school context found that social norms in schools, normative beliefs about the prevalence of drinking (descriptive norms), and availability of alcohol were linked with increases in adolescent substance use (Dimova et al., 2023, Lombardi, Coley, Sims, & Mahalik, 2019, Sanchez et al., 2019). A systematic review of literature (Yamin, Fei, Lahlou, & Levy, 2019) presented the effectiveness of intervention based on social norms. Descriptive norm education was found to be an effective method in changing adolescents' inaccurate perceptions of self-confirming assumptions about others' alcohol use (François, Lindstrom Johnson, Waasdorp, & Bradshaw, 2017). Therefore, EU-Dap Unplugged program emphasized normative education, with a particular focus on normative beliefs as potential mediators. Correct information about peer group norms and behaviors was anticipated to diminish normative misperceptions and enhance health-promoting attitudes and beliefs (Vadrucci, Vigna-Taglianti, van der Kreeft, & EU-Dap Study Group, 2016).

The Unplugged prevention program that has been frequently adopted in Europe with evidence of effectiveness. Unplugged consists of 12 lessons and is primarily designed for 12–14-year-old adolescents.

## 2. Design

This study was a randomized control trial using a Solomon four-group design which enabled testing for the presence of pre-test sensitization (Campbell & Stanley, 2015).

## 3. Objective

To explore the effects of the Unplugged program and gender over time on adolescents' descriptive normative beliefs about smoking (DNB<sup>S</sup>) and alcohol consumption (DNB<sup>AC</sup>).

## 4. Methods

### 4.1. Sample and procedure

A randomized control trial using the Unplugged program was carried out among young adolescents at 24 primary schools. The sampling used a list of primary and secondary schools in Slovakia retrieved from the Institute of Information and Prognosis of Education. The schools were selected from different municipalities on the basis of their geographical locations in the Eastern, Central and Western Slovakia with six clusters based on population size.

The data collection was carried out immediately before implementing the Unplugged program (T1, experimental and control group with a pre-test), immediately after implementing the Unplugged program (T2) and one year after implementation (T3). Twelve schools were assigned to the experimental group (EG,  $n = 798$ ) and twelve schools were assigned to the control group (CG,  $n = 622$ ). The sample consisted of 1424 adolescents in total (the mean age = 13.5 years,  $SD = 0.59$ ; 47.5% girls). In this design, both EG and CG had two subgroups: a pretested group<sup>PT</sup> and a non-pretested<sup>nPT</sup> group ( $n/EG^{PT} = 397$ ,  $n/EG^{nPT} = 401$ ,  $n/CG^{PT} = 333$ ,  $n/CG^{nPT} = 289$ ). In order to increase the effect of Unplugged, booster-sessions called nPrevention (neuroPrevention, Department of Addictology, First Faculty of Medicine, Charles University) were carried out (EG+) after T2. The aim of nPrevention was to strengthen the preventive effect of Unplugged.

The data collection was carried out after obtaining the informed consent of Parents/guardians and questionnaires were filled in during one lesson in the presence of a trained research team member, without the presence of a teacher. All collected data was anonymized. The protocol of this study was reviewed and approved by the Ethics Committee at the Faculty of Arts of P. J. Šafárik University.

### 4.2. Measures

Descriptive normative beliefs were measured by two items: „According to your estimation, how many of the pupils at your school use alcohol/smoke cigarettes?“ (Elek, Miller-Day, & Hecht, 2006). Each item was rated on a 4-point scale with the scale from 1 = almost none to 4 = most.

### 4.3. Statistical analyses

Outcome variables were examined with GLM repeated measures analyses.

## 5. Results

### 5.1. The effects of prevention program and gender across time on adolescents' DNB<sup>S</sup>

There was a significant main effect of time (without pre-testing, times: T2 and T3) on DNB<sup>S</sup> and contrasts revealed significantly higher level DNB<sup>S</sup> at T3  $F(1, 411) = 4.827$ ,  $p < 0.05$ . The interaction effects group (CG, EG, EG+) x time, group x time x gender on DNB were not significant.

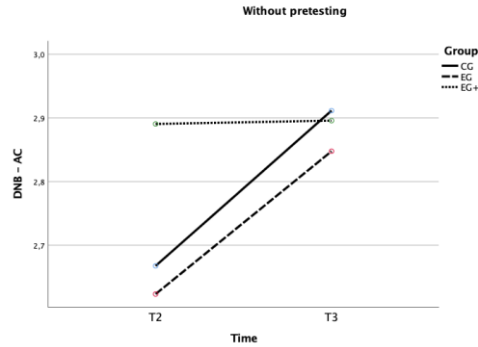
There was a significant main effect of time (with pretesting, times: T1 and T2 and T3) on DNB<sup>S</sup> and contrasts revealed significantly higher level of DNB-smoking at T2  $F(1, 456) = 8.365$ ,  $p < 0.01$  and significantly higher level of DNB-smoking at T3  $F(1, 387) = 25.750$ ,  $p < 0.001$ . The interaction effects group (CG, EG, as well as CG, EG, EG+) x time, group x time x gender on DNB<sup>S</sup> were not significant.

### 5.2. The effects of prevention program and gender across time on adolescents' DNB<sup>AC</sup>

There was a significant main effect of time (without pre-testing, times: T2 and T3) on DNB<sup>AC</sup> and contrasts revealed significantly higher level of DNB<sup>AC</sup> at T3  $F(1, 412) = 12.081$ ,  $p = 0.001$ .

There was a significant interaction effect between  $DNB^{AC}$  and group. The effect indicates that  $DNB^{AC}$  differed in Control  $^{CG}$ , Experimental $^{EG}$ , and Experimental with booster sessions $^{EG+}$  groups,  $F(2, 412) = 3.071, p < 0.05$ . The interaction graph shows (Figure 1) that  $DNB^{AC}$  increased between T2 and T3 among adolescents of all groups, but this increase from T2 to T3 was more pronounced for adolescents of CG and EG than  $EG+$ .

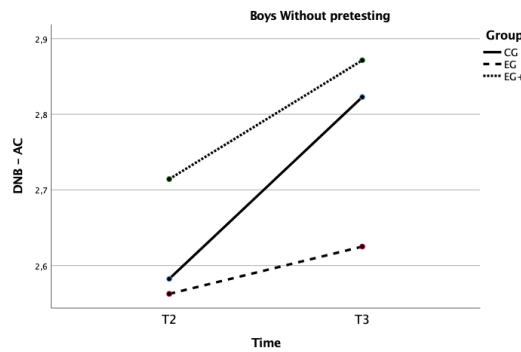
Figure 1. Changes in descriptive normative beliefs about alcohol consumption (DNB-AC) among adolescents.



Notes: CG = control group, EG = experimental group, EG+ = experimental group with booster-sessions, T2 = immediately after implementing the program, T3 = one year after implementing the program

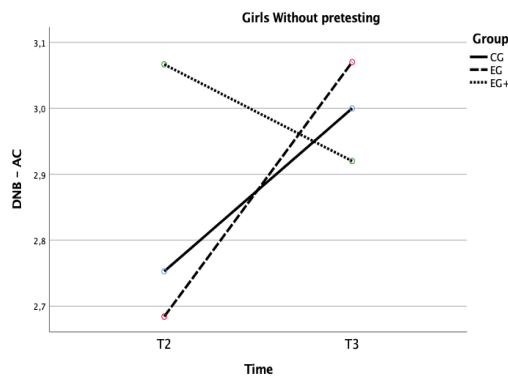
The interaction  $DNB^{AC} \times Group \times Gender$  was significant. This indicates that the  $DNB^{AC} \times group$  interaction described previously was different in boys and girls  $F(2, 412) = 3.648, p < 0.05$ . The interaction graphs (Figure 2, 3) show that  $DNB^{AC}$  increased from T2 to T3 among boys of all groups, but  $DNB^{AC}$  increased from T2 to T3 only in girls of CG and EG in contrast to girls of  $EG+$ . The decline of  $DNB^{AC}$  in girls of  $EG+$  was found from T2 to T3.

Figure 2. Changes in descriptive normative beliefs about alcohol consumption (DNB-AC) among boys.



Notes: CG = control group, EG = experimental group, EG+ = experimental group with booster-sessions, T2 = immediately after implementing the program, T3 = one year after implementing the program

Figure 3. Changes in descriptive normative beliefs about alcohol consumption (DNB-AC) among girls.



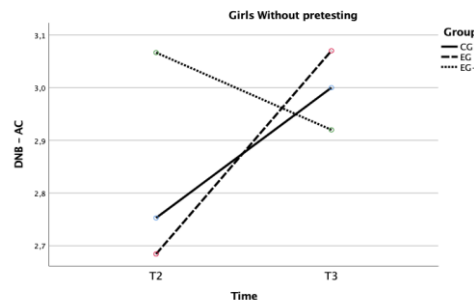
Notes: CG = control group, EG = experimental group, EG+ = experimental group with booster-sessions, T2 = immediately after implementing the program, T3 = one year after implementing the program

There was a significant main effect of time (with pre-testing, times: T1 and T2) on DNB<sup>AC</sup> and contrasts revealed significantly higher level DNB<sup>AC</sup> at T2  $F(1, 453) = 25.112, p < 0.001$ . The interaction effects group (CG, EG) x time, group x time x gender on DNB<sup>AC</sup> were not significant.

There was a significant main effect of time (with pre-testing, times: T2 and T3) on DNB<sup>AC</sup> and contrasts revealed significantly higher level DNB<sup>AC</sup> at T3  $F(1, 387) = 47.188, p = 0.001$ .

There was a significant interaction effect between DNB<sup>AC</sup> and Gender. The effect indicates that DNB<sup>AC</sup> differed in boys and girls  $F(1, 387) = 4.917, p < 0.05$ . The interaction graphs show that DNB<sup>AC</sup> increased between T2 and T3 among boys and girls, but this increase was more pronounced for girls.

Figure 4. Changes in descriptive normative beliefs about alcohol consumption (DNB-AC) among boys and girls.



Notes: T2 = immediately after implementing the program, T3 = one year after implementing the program

## 6. Discussion and conclusions

The findings of this research study contribute to the important investigation of pre-testing effects (Peter, Sobowale, & Ekeanyanwu, 2013, De Villiers & Van den Berg, 2012). Firstly, it is important to consider if the effect of intervention using the pre- and post-test design is explored with the focus on behavioural or non-behavioural outcomes (McCambridge, Butor-Bhavsar, Witton, & Elbourne, 2011). For example, the effect of Suicide awareness program was explored and the confirmation of pre-test sensitization effects in high school students' suicide awareness was confirmed (Spirito, Overholser, Ashworth, Morgan, & Benedict-Drew, 1988). The effect of a pre-test in terms of cognitive learning results was explored and it was found that the pre-test effect on an educational intervention depended on the type of instruction that was administered and the importance of pre-testing regarding prior knowledge related to educational intervention aims could influence the results (All, Castellar, & Van Looy, 2016). Pre-test sensitization was confirmed for Acceptance of risky behaviour and institutional bond as core constructs of D.A.R.E. (*Drug Abuse Resistance Education*) evaluation (Ullman, Stein, & Dukes, 2000). These studies were in line with the meaning of a pre-testing sensitization as a factor which increases participants' sensitivity to experimental intervention (Huck & Sandier, 1973 in Braver & Braver, 1988). However, another study confirmed the effects of an infertility prevention psycho-educational program on infertility knowledge and attitudes among university students free from the pre-post-test sensitivity (Öztürk, Siyez, Esen, & Kağnici, 2020). Despite the findings of the last study, it seems that the pre-test sensitization can be important especially for non-behavioural outcomes. The need of school-based studies and assessment of pre-test sensitization on non-behavioural, as well as behavioural outcomes of interventions is a factor which should be taken in to account (McCambridge et al., 2011).

Secondly, All et al. (2016) interpret the pre-test sensitization through the combination of the motivational paradigm of some kind of intervention / education (the level of interactivity, the level of attention during the activities...) and Deci and Ryan's Self-determination theory (the level of autonomy). In investigating the effectiveness of Unplugged, an interactive drug use prevention program based on the comprehensive social influence approach, our results suggest that adolescents in the experimental groups without pre-testing showed expected positive effects. This may be attributed to a higher level of intrinsically motivated trends in behaviour and behaviour change, emphasizing the need for skill development. In contrast, pre-testing experimental groups, possibly supported external regulation and lead to less favourable outcomes, possibly due to a certain sense of obligation as proposed by All et al. (2016).

The implementation of Unplugged with booster sessions and without pretesting could be an important factor for prevention of alcohol consumption by the decline of DNB<sup>AC</sup>. This approach proves effective in fostering intrinsic motivation, particularly among girls who participated in the prevention program.

The limitations and strengths of this study must be highlighted. The most significant limitation was the use of self-reported measures, while a notable strength lies in the implementation of a cluster randomized controlled trial with a Solomon four-group design to mitigate the impact of pretest sensitization effects.

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## GENDER PERCEPTIONS AND ATTITUDES IN ICT: A COMPARATIVE STUDY AMONG UNIVERSITY STUDENTS\*

**Tatiana Pethö<sup>1</sup>, Miroslava Bozogáňová<sup>2</sup>, & Monika Magdová<sup>2</sup>**

<sup>1</sup>*Institute of Social Sciences, Centre of Social and Psychological Sciences SAS (Slovakia)*

<sup>2</sup>*Institute of Pedagogy, Andragogy and Psychology, Faculty of Humanities and Natural Sciences,  
University of Presov (Slovakia)*

### Abstract

Research has consistently shown that stereotypes about computer science exist among students, particularly in relation to gender. Ghorayeb, Comber and Gooberman- Hill (2021) and Sáinz et al. (2016) found that students hold stereotypical beliefs about ICT professionals, with a masculine portrayal being prevalent. However, these stereotypes are not always negative, and both boys and girls can hold counter-stereotypical beliefs. Cheryan et al. (2015) further emphasizes the role of cultural stereotypes in steering girls away from computer science and engineering, suggesting that diversifying these stereotypes can increase girls' interest in these fields. Funk and Parker (2018) add to this by highlighting the differences in perceptions of computer science between male and female students, with men focusing more on technical aspects and women being attracted to creativity and communication. The aim of this paper is to compare genders; information and communication technologies (ICT) and non-ICT students in terms of their attitudes toward people from ICT field, gender discrimination, and gender inequality. The research sample consisted of 225 university students from Slovakia (64.44% females) aged 18-26 years ( $M=22.82$ ;  $SD=1.23$ ). 24.44% of the students were studying within the ICT major. Attitudes toward people from ICT field were measured by four items on a 5-point scale, where 1 = strongly disagree - 7 = strongly agree with the statement. The same was true when measuring attitudes towards gender discrimination (McDonald's  $\omega = .721$ ) (Beyer et al., 2005). Gender inequality was measured by The Separate Spheres Ideology Scale (Miller & Borgida, 2016) consisted of 15 items (McDonald's  $\omega = .811$ ). The differences between men and women (Welch's t-test) showed a strong effect within gender inequality (Cohens  $d= -.653$ ), where men perceived it at a higher rate than women. Further, differences with medium effect size (Cohens  $d= -.347$ ) were demonstrated between ICT and non-ICT students under gender discrimination (There is gender discrimination in the study of Computer Science.) where non-ICT students agreed with the statement to a higher extent than ICT students. The results of the pilot study can help understand how gender perceptions differ between ICT and non-ICT students and women and men. Understanding this is important for developing more inclusive educational environments in ICT disciplines.

**Keywords:** *University students, information and communication technologies, gender inequality, gender discrimination.*

### 1. Introduction

Gender stereotypes play a crucial role in shaping individuals' perceptions of various professions. Researchers have extensively examined these stereotypes, particularly among young people, to understand how they influence career choices. Most of the existing literature (e.g., Eccles, 1994; Cejka & Eagly, 1999; Levy et al., 2000; Cheryan et al., 2013) about stereotypical beliefs about occupation has been conducted in North America.

Holland (1985) states that adolescents tend to choose a career in relation to their personality. Recent studies in US (Moss & Frieze, 1993; Cheryan et al., 2013) revealed that stereotypes about people working in ICT field often depict professionals as highly intelligent and technology- oriented.

\* *Acknowledgment:* VEGA 2/0146/22 Psychological constructs and contextual frameworks determining the intention of girls and women to study ICT fields.

However, negative traits as lacking social skills or having unattractive physical features, persist. These stereotypes may discourage young women from pursuing ICT careers.

Ghorayeb, Comber and Gooberman-Hill (2021) and Sáinz et al. (2016) found that students hold stereotypical beliefs about ICT professionals, with a masculine portrayal being prevalent. However, these stereotypes are not always negative, and both boys and girls can hold counter-stereotypical beliefs. Cheryan et al. (2015) further emphasizes the role of cultural stereotypes in steering girls away from computer science and engineering, suggesting that diversifying these stereotypes can increase girls' interest in these fields. Funk and Parker (2018) add to this by highlighting the differences in perceptions of computer science between male and female students, with men focusing more on technical aspects and women being attracted to creativity and communication. Research conducted by Cheryan et al. (2013) points to perception of ICT as a masculine field persists, impacting women's participation. Stereotypes often associate ICT field with traditionally masculine traits, such as programming focus and social awkwardness. These biases can discourage women from pursuing careers in ICT. Challenging these stereotypes is crucial for creating a more inclusive environment in ICT. Stereotypes and attitudes in the field of ICT are phenomenon that has been studied for a long time, and therefore this contribution is based on a complex problem on the issue of the application of girls and women in the field of ICT.

## 2. Objectives

The aim of this paper is to compare genders; information and communication technologies (ICT) and non-ICT students in terms of their attitudes toward people from ICT field, gender discrimination, and gender inequality.

## 3. Methods

### 3.1. Research sample

The research sample consisted of 225 university students from Slovakia (64.44% females) aged 18-26 years ( $M=22.82$ ;  $SD=1.23$ ). Regarding regional distribution, the sample included individuals from eight different regions of Slovakia, with the highest representation from the Bratislavský region ( $n = 36$ , 16.00%) and the lowest from the Žilinský region ( $n = 21$ , 9.333%). In terms of their field of study, most of the participants reported an economic focus ( $n = 206$ , 91.556%), followed by those with a humanistic focus ( $n = 12$ , 5.333%). Participants were also asked about their involvement in ICT programs or specializations. A minority of the participants ( $n = 55$ , 24.444%) confirmed studying in the relevant ICT programs, whereas a majority ( $n = 170$ , 75.556%) did not pursue any ICT-related program or specialization.

### 3.2. Methodology

Attitudes toward people from ICT field were measured by four items (I think I should work in ICT.; My close family thinks I should work in ICT., My closest friends think I should work in ICT., People who are important to me think I should work in ICT.) on a 5-point scale, where 1 = strongly disagree - 5 = strongly agree with the statement.

Attitudes towards gender discrimination (ATGD) was measured by 8 items from "Stereotypes of CS" scale designed by Beyer et al. (2005), which is based on the Role Conflict Scale (Cuny et al., 2003). Stereotypes of CS scale measures stereotypical perception of ICT students and people working in the field of ICT. A score was calculated and divided by the number of items (McDonald's  $\omega = .721$ ).

Gender inequality was measured by The Separate Spheres Ideology Scale (SSIS; Miller & Borgida, 2016) consisted of 15 items, which measured attitude toward gender roles especially technical skills, marriage roles and parenting and family structure in the context of gender. A score was calculated and divided by the number of items (McDonald's  $\omega = .811$ ). JASP 0.18.3.0 (JASP, 2024) was used for analysis of the data.

## 4. Results

First, descriptive statistics for individual beliefs and social perceptions regarding employment in the ICT sector, as well as attitudes towards gender discrimination and inequality within this field is reported. The results, summarized in the following table, include means, confidence intervals for means, and distribution measures for each variable.

Table 1. Descriptive statistics.

|  | 95% Confidence Interval Mean |       |       |       | SD     | Skewness | Kurtosis | Min   | Max |
|--|------------------------------|-------|-------|-------|--------|----------|----------|-------|-----|
|  | M                            | Upper | Lower |       |        |          |          |       |     |
| I think I should work in ICT.                              | 2.671                        | 2.842 | 2.500 | 1.302 | 0.116  | -1.219   | 1        | 5     |     |
| My close family thinks I should work in ICT.               | 2.342                        | 2.508 | 2.176 | 1.265 | 0.466  | -0.939   | 1        | 5     |     |
| My closest friends think I should work in ICT.             | 2.240                        | 2.403 | 2.077 | 1.241 | 0.468  | -1.001   | 1        | 5     |     |
| People who are important to me think I should work in ICT. | 2.307                        | 2.469 | 2.144 | 1.239 | 0.422  | -0.942   | 1        | 5     |     |
| Attitudes towards gender discrimination (ATGD)             | 4.108                        | 4.218 | 3.998 | 0.836 | -0.266 | -0.111   | 1.5      | 6.625 |     |
| Gender inequality (SSIS)                                   | 3.526                        | 3.632 | 3.419 | 0.810 | 0.032  | 0.321    | 1.133    | 6.2   |     |

In addition, we made a comparison between men and women on all variables. The analysis was done using Welch's t-test. This is shown in Table 2.

Table 2. Comparison of men and women (Welch's t-test).

|  | Gender | N   | Mean  | SD    | t      | df      | p      | Cohen's d |
|--|--------|-----|-------|-------|--------|---------|--------|-----------|
| I think I should work in ICT.                              | women  | 145 | 2.531 | 1.270 | -2.162 | 156.769 | 0.032  | -0.303    |
|  | men    | 80  | 2.925 | 1.329 |        |         |        |           |
| My close family thinks I should work in ICT.               | women  | 145 | 2.159 | 1.188 | -2.881 | 147.356 | 0.005  | -0.408    |
|  | men    | 80  | 2.675 | 1.339 |        |         |        |           |
| My closest friends think I should work in ICT.             | women  | 145 | 2.048 | 1.151 | -3.053 | 144.38  | 0.003  | -0.434    |
|  | men    | 80  | 2.587 | 1.328 |        |         |        |           |
| People who are important to me think I should work in ICT. | women  | 145 | 2.186 | 1.219 | -1.961 | 159.27  | 0.052  | -0.274    |
|  | men    | 80  | 2.525 | 1.253 |        |         |        |           |
| Attitudes towards gender discrimination (ATGD)             | women  | 145 | 4.066 | 0.791 | -0.972 | 144.296 | 0.333  | -0.138    |
|  | men    | 80  | 4.184 | 0.914 |        |         |        |           |
| Gender inequality (SSIS)                                   | women  | 145 | 3.345 | 0.767 | -4.674 | 159.273 | < .001 | -0.653    |
|  | men    | 80  | 3.853 | 0.788 |        |         |        |           |

Note. Welch's t-test.

A Welch's t-test revealed a significant difference between genders on the belief "I think I should work in ICT," with women ( $M = 2.531$ ,  $SD = 1.270$ ) scoring lower than men ( $M = 2.925$ ,  $SD = 1.329$ ),  $t(156.769) = -2.162$ ,  $p = .032$ , Cohen's  $d = -0.303$ . When it came to family beliefs about them working in ICT, there was also a significant difference, with women ( $M = 2.159$ ,  $SD = 1.188$ ) scoring lower than men ( $M = 2.675$ ,  $SD = 1.339$ ),  $t(147.356) = -2.881$ ,  $p = .005$ , Cohen's  $d = -0.408$ . Regarding friends' beliefs, women ( $M = 2.048$ ,  $SD = 1.151$ ) scored significantly lower than men ( $M = 2.587$ ,  $SD = 1.328$ ),  $t(144.38) = -3.053$ ,  $p = .003$ , Cohen's  $d = -0.434$ . For the importance of opinions from significant others on working in ICT, women ( $M = 2.186$ ,  $SD = 1.129$ ) scored lower than men ( $M = 2.525$ ,  $SD = 1.253$ ), but this difference did not reach significance,  $t(159.27) = -1.961$ ,  $p = .052$ , Cohen's  $d = -0.274$ .

In terms of attitudes towards gender discrimination (ATGD), there was no significant difference between women and men ( $t(144.296) = -0.972$ ,  $p = .333$ , Cohen's  $d = -0.138$ ). However, there was a significant difference in perceived gender inequality (SSIS), with women ( $M = 3.345$ ,  $SD = 0.767$ ) scoring lower than men ( $M = 3.853$ ,  $SD = 0.788$ ),  $t(159.273) = -4.674$ ,  $p < .001$ , Cohen's  $d = -0.653$ .

We also compared ICT students with those not studying ICT. The results are shown in Table 3.



Table 3. Comparison of non/students of ICT (Welch's t-test).

|  | Do you study ICT? | N   | Mean  | SD    | t      | df      | p      | Cohen's d |
|--|-------------------|-----|-------|-------|--------|---------|--------|-----------|
| I think I should work in ICT.                              | Yes               | 55  | 3.800 | 0.931 | 9.622  | 116.037 | < .001 | 1.397     |
|  | No                | 170 | 2.306 | 1.192 |        |         |        |           |
| My close family thinks I should work in ICT.               | Yes               | 55  | 3.345 | 1.04  | 7.996  | 100.869 | < .001 | 1.206     |
|  | No                | 170 | 2.018 | 1.159 |        |         |        |           |
| My closest friends think I should work in ICT.             | Yes               | 55  | 3.255 | 1.075 | 7.989  | 93.97   | < .001 | 1.230     |
|  | No                | 170 | 1.912 | 1.109 |        |         |        |           |
| People who are important to me think I should work in ICT. | Yes               | 55  | 3.345 | 1.126 | 7.952  | 88.392  | < .001 | 1.247     |
|  | No                | 170 | 1.971 | 1.079 |        |         |        |           |
| Attitudes towards gender discrimination (ATGD)             | Yes               | 55  | 3.884 | 0.908 | -2.167 | 82.989  | 0.033  | -0.347    |
|  | No                | 170 | 4.181 | 0.801 |        |         |        |           |
| Gender inequality (SSIS)                                   | Yes               | 55  | 3.541 | 0.908 | 0.143  | 81.284  | 0.887  | 0.023     |
|  | No                | 170 | 3.521 | 0.779 |        |         |        |           |

Note. Welch's t-test.

Individuals currently studying ICT reported higher levels of personal, family, and friends' belief that they should work in ICT compared to those not studying ICT. Specifically, individuals studying ICT believed they should work in ICT ( $M = 3.800$ ,  $SD = 0.931$ ) more than those not studying ICT ( $M = 2.306$ ,  $SD = 1.192$ ),  $t(116.037) = 9.622$ ,  $p < .001$ , Cohen's  $d = 1.397$ . Similarly, participants reported that their close family members ( $M = 3.345$ ,  $SD = 1.040$  for ICT students vs.  $M = 2.018$ ,  $SD = 1.159$  for non-ICT students),  $t(100.869) = 7.996$ ,  $p < .001$ , Cohen's  $d = 1.206$ , and their closest friends ( $M = 3.255$ ,  $SD = 1.075$  for ICT students vs.  $M = 1.912$ ,  $SD = 1.109$  for non-ICT students),  $t(93.97) = 7.989$ ,  $p < .001$ , Cohen's  $d = 1.230$ , were more likely to think they should work in ICT. This trend was also seen in the views of important people to the participants, with those studying ICT reporting higher agreement ( $M = 3.345$ ,  $SD = 1.126$ ) compared to their non-ICT counterparts ( $M = 1.971$ ,  $SD = 1.079$ ),  $t(88.392) = 7.952$ ,  $p < .001$ , Cohen's  $d = 1.247$ .

Regarding attitudes toward gender discrimination, individuals not studying ICT reported slightly higher agreement with attitudes towards gender discrimination (ATGD) ( $M = 4.181$ ,  $SD = 0.801$ ) compared to those studying ICT ( $M = 3.884$ ,  $SD = 0.908$ ),  $t(82.989) = -2.167$ ,  $p = .033$ , Cohen's  $d = -0.347$ . However, there was no significant difference in perceptions of gender inequality, as measured by the Gender Inequality (SSIS), between those studying ICT ( $M = 3.541$ ,  $SD = 0.908$ ) and those not ( $M = 3.521$ ,  $SD = 0.779$ ),  $t(81.284) = 0.143$ ,  $p = .887$ , Cohen's  $d = 0.023$ .

## 5. Discussion and conclusion

The research results between men and women showed significant gender differences in the level of individual beliefs and social perceptions regarding employment in the ICT sector, where men perceived it at a higher rate than women. Our findings are consistent with previous researches (Vekiri & Chronaki, 2008; Volman, van Eck, Heemskerk, & Kuiper, 2005). Researchers found small, but significant positive effect favoring boys. In other words, boys held more favorable attitudes toward technology and considered themselves more competent than girls did (Cai et al., 2017).

Individuals currently studying ICT reported higher levels of personal, family, and friends' belief that they should work in ICT compared to those not studying ICT. Specifically, individuals studying ICT believed they should work in ICT more than those not studying ICT. Regarding attitudes toward gender discrimination, individuals not studying ICT reported slightly higher agreement with attitudes towards gender discrimination compared to those studying ICT. Non-ICT students, due to not being immersed in the ICT environment, may hold stronger gender stereotypes about the field. This could contribute to their belief that gender discrimination is more prevalent. On the other hand, ICT students might be more immune to stereotype threat due to their direct involvement in the discipline. Students studying ICT may have a more nuanced understanding of the dynamics within the field. It's possible that ICT students, being directly involved in CS, are more aware of efforts to address gender discrimination within the discipline.

They may also have a more personal and positive experience, leading to a lower perception of discrimination. The results of the pilot study can help understand how gender perceptions differ between ICT and non-ICT students and women and men.

Limitation of our research lies in the use of masculine generics by participants, which may inadvertently exclude gender-neutral language. Future efforts should emphasize inclusive language to ensure that all individuals, regardless of gender, feel represented and encouraged in their career aspirations. On the other hand, results of the pilot study can help understand how gender perceptions differ between ICT and non-ICT students and males and females. Understanding this is important for developing more inclusive educational environments in ICT disciplines. Young people suffer from lack of comprehensive information about the labor market and specific occupations, targeted interventions are essential. These interventions should be actively challenging stereotypical beliefs associated with various professions. By providing individuals who haven't committed to a specific academic path with authentic role models in the field of ICT, we can broaden their perspective and encourage diverse career choices.

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## TECHNOLOGY COMPETENCE AND MOTIVATIONAL STYLES OF SCHOOL ADMINISTRATORS AS CORRELATE TO TEACHERS' PERFORMANCE

**Moniquo A. Santos, Elenita M. Tiamzon, Ma. Rosario M. Quejado, & Erico M. Habijan**  
*Graduate Studies, Pamantasan ng Lungsod ng Marikina (Philippines)*

### Abstract

This study aimed to determine the technology competence and motivational styles of school administrators as correlate to teachers' performance which served as inputs for the technology-based leadership development program. The researcher used descriptive research design and quantitative method in this study to determine the leadership competence in instructional technology supervision and motivational styles of school administrators as correlate to teachers' performance. The respondents of this study were one hundred twenty-nine (129) school administrators and three hundred (300) senior high school teachers from the twenty-nine (29) public senior high schools in the Schools Division Offices of Marikina City, Pasig City and Quezon City, Philippines. The respondents rated the technology competence of the school administrators in instructional supervision and motivational styles as correlate to teachers' performance. Research results revealed that the two groups of respondents perceived the technology competence of the school administrators in terms of personal leadership, learning and teaching, talent management and planning and operations is *High Level*, while it differed in school culture. Further, they evaluated the school administrators' motivational styles as *Strongly Agree* in terms of expectancy and *Agree* in terms of valence and instrumentality. Hence, this yielded a significant difference in the perceptions of the two groups of respondents. Likewise, this also showed a significant correlation between the perceptions of the two groups of respondents on the school administrators technology competence and motivational styles as correlate to teachers' performance. This implied that programs should be developed within the instructional and technological leadership which should denote a common vision and promote growth in all variables. Based on the results of the study, a technology-based leadership development program was proposed.

**Keywords:** *Technology competence, motivational styles, technology-based leadership development program, descriptive research design, quantitative method.*

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### 1. Introduction

*"Leaders become great not because of their power, but because of their ability to empower others."* - J. C. Maxwell, 2014 (as cited in Reid, 2016) – this is what we often hear from leaders who bring out the true potential of others. In education, the phrase also relates to instructional supervision, which is characterized by guidance, assistance, sharing of ideas, facilitation, or creation to help teachers improve learning situation and quality of learning in the schools. This also concerns instructional leader who possesses superior knowledge and skills and works collaboratively in the school environment which yields professional development of learning environment and quality of education. In section 2 paragraph 1 of Republic Act (RA) 9155, also known as the Governance of Basic Education Act of 2001, quality basic education is the right of all Filipino citizens, and we need collegial work to attain quality in educational aspect. School head has also an important role in the delivery of quality education to the learners and stakeholders, thus, implementing and monitoring educational programs and services are integral to ensure achievement of educational mission, vision, and goal of the school.

During the 15<sup>th</sup> Senior Officials' Meeting on Education (SOM-ED) attended by education ministers across the Association of Southeast Asian Nations (ASEAN), Philippine Department of Education (DepEd) Secretary Leonor Magtolis Briones stated that the department is aiming for a forward-looking education that is responsive to the demands of a fast-changing world and the re-direction and re-structuring of their plans for education to be able to cope with the challenges brought by and after the COVID-19. Moreover, education ministers encouraged each member state to continue supporting their learners by providing quality content through online platforms. As this meeting provides harmonious

link between ASEAN nations and supports individual teachers' needs and learners demand in quality education and organizational goals amidst COVID-19, it is necessary to further understand the importance of instructional supervision with the integration of technology that shows cooperative process in inductive manner. Further, in response to the statement made by the DepEd secretary, it clearly implies the need to develop connections between instructional supervision and professional development, reform initiatives like the ASEAN meeting, and collaboration with external stakeholders, peers, and superiors in the school setting.

Moreover, teacher professional development is any type of continuing education effort for educators. It is one way where teachers can improve their skills and, in turn, boost student outcomes. Therefore, the educational sector (public or private) needs to strengthen their cooperation and collaboration with outstanding schools that could share their best practices and help schools to improve their performance as well. This is associated to the DepEd Order No. 35, S. 2016, entitled: "Learning Action Cell (LAC) as a K to 12 Basic Education Program School-Based Continuing Professional Development Strategy for the Improvement of Teaching and Learning". Through this policy, there is a continuous professional growth of its teaching personnel based on the principle of lifelong learning. The development of teacher's potential with proper instructional supervision by the school administrators can be done through the school-based LAC. To have an effective learning environment, the instructional supervision must be done continually to respond to the changing needs and schools shall improve their performance using technology in instructional supervision that requires instructional leaders to take active leadership and expand their responsibilities, which include the continuous process of monitoring and supervision. This improvement is the key process to focus both on customers' needs and the desired performance to establish a culture of continuous learning and improvement. Likewise, assessment shall be conducted using DepEd Order No. 83, s. 2012 entitled, "Implementing Guidelines on the Revised School Based Management (SBM) Framework, Assessment, Process and Tool (APAT)" which aims to improve school performance and stakeholder engagement by helping instructional leaders to evaluate the efficiency level of school practices and grant additional funds to augment the school fund on Maintenance and Other Operating Expenses (MOOE) that supports the Learning Action Cell (LAC) projects, the conduct of stakeholders' activities, and the mobilization and other professional development that stresses the need in instructional supervision.

Concerning this, the researcher wanted to determine the school administrators' technology competence in instructional technology supervision as perceived by the teachers and school administrators respondents in terms of personal leadership, learning and teaching, school culture, talent management, and planning and operations because educators and school administrators are longstanding advocates in making efforts to increase the graduation rates, ensure access, quality and good governance to educational opportunities for all students, resolve the achievement gaps, and foster collaboration that would equip families, communities, and other stakeholders. Further, this study will provide adequate understanding of school administrators' technology competence in terms of motivational styles and instructional technology supervision that is associated to the teacher's performance. It is due to the above circumstances and reason why the researcher pursued this study.

## 2. Methods

The researcher used the descriptive research design in this study to determine the leadership competence in instructional technology supervision and motivational styles of the school administrators in the Division of Marikina City, Pasig City, and Quezon City as correlates of teachers' performance. McCombes (2019) defined descriptive research as a research design that aims to describe a population, situation, or phenomenon accurately and systematically. It can answer what, where, when, and how questions. It can use a wide variety of research methods to investigate one or more variables. In this design, the researcher only observes and measures the variables.

This study assessed the level of school administrators' leadership competence in instructional technology supervision, and the significant correlation between the perceptions of the two groups of respondents on the school administrators' technology competence and motivational styles with respect to teachers' performance. The research design used in this study is helpful because it concerned the relationship that existed, opinions that were held, processes that were going on, and events that were evident. Likewise, the application of its findings, and implication of judgment of the competence of the school administrators in terms of carefully defined and agreed objectives or indicators showed that this study is descriptive in nature for it sought to analyze the relationship between variables and assess the technology competence of the school administrators.

The researcher used survey questionnaire as the main instrument to gather data which was validated on its content and phases by ten (10) experts from across educational fields. Moreover, the

research instrument was guided by the New Leaders Transformational Leadership Framework 2020 to support school leaders in redefining their responsibilities as change agents which is characterized as instructional technology supervision (as cited in Ponticell & Pineda, 2019). The transformational leadership framework 2020 covers five levers: (a) personal leadership, (b) learning and teaching, (c) talent management, (d) school culture, (e) planning and operations. According to Desravines, et. al. (2022), these levers have a direct impact on educational quality and equity.

Further, the researcher used Expectancy Theory of Motivation by Victor Vroom's (1964) as a key driver of teachers' performance with Expectancy (E), Instrumentality (I), and Valence (V) as its three variables. According to Campbell, et. al. 2015 (as cited in Rybnicek et al., 2017), motivated employees are more engaged in their work and their performances are in high quality. Thus, the Expectancy Theory of Motivation was significant in this study because it enabled the researcher to assess the school administrator's effective motivational styles in increasing the work performance. On the other hand, the performance ratings of the teacher respondents for the three consecutive school years were used to determine the teachers' performance. The study was conducted during school year 2021-2022 with one hundred twenty-nine (129) school administrators-respondents and three hundred (300) senior high school teachers-respondents from the twenty-nine (29) public senior high schools in the Schools Division Offices of Marikina City, Pasig City and Quezon City, Philippines. The researcher developed the research questionnaire followed by its validation and secured approval to conduct a study from the schools' division offices. The gathered data were treated using the following statistical treatments – figuring the weighted mean to determine the school administrators' technology competence in instructional technology supervision as perceived by two groups of respondents and utilizing the Five-point Likert's scale in interpreting the data. In finding out the performance ratings of the teacher respondents for the last three years, the average mean was used while t-test was utilized to identify the significant difference between the perceptions of the two groups of respondents on the school administrators' technology competence on technology integration with respect to the variables. In addition, to find the significant correlation between the perceptions of the two groups of respondents on the school administrators' technology competence on technology integration with respect to the variables, Pearson Product Moment Correlation Coefficient was used. After the statistical treatment, the data were verbally interpreted.

### 3. Results and discussion

*Level of Technology Competence of School Administrators in Instructional Technology Supervision.* The data revealed that the teacher and school administrator respondents have almost the same perceptions on the level of technology competence of school administrators in instructional technology supervision with respect to personal leadership, learning and teaching, talent management, and planning and operations with verbal interpretation of High Level (HL) while it differed in school culture. However, despite the same perceptions on the level of technology competence of school administrators in instructional technology supervision, the school administrator respondents rated themselves slightly lower regarding personal leadership (OWM = 4.04, SD = 0.66) and planning and operation (OWM = 4.03, SD = 0.45), which were verbally interpreted as High Level (HL). Moreover, the teachers assessed the school administrators with a Very High Level (VHL) technological competence on instructional technology supervision, while school administrators deemed that their competency is a notch lower High Level (HL). The conclusion implied that school administrators must empower themselves by upgrading their technological skills to be successful instructional technology leaders leading to a need for technology-based leadership development program which accords to the study of Eichorn et al. (2018) (as cited in Yahşi & Hopcan, 2021) indicating that school administrators are unprepared to succeed in technology leadership role and there are some challenges that school technology faces which are technostress and technology acceptance process.

*Significant Difference on the Perceptions of Teacher-Respondents and School Administrators-Respondents on the School Administrators' Technology Competence in Instructional Supervision.* The perceptions of the teacher-respondents and school administrator-respondents on the school administrators' technology competence in instructional technology supervision with respect to personal leadership ( $t = 8.95, p = 0.000$ ), learning and teaching ( $t = 5.57, p = 0.000$ ), school culture ( $t = 10.87, p = 0.000$ ), talent management ( $t = 7.86, p = 0.000$ ), and planning and operations ( $t = 10.44, p = 0.000$ ) were statistically significant ( $t = 9.35, p = 0.000$ ), which were less than 5% significant level, this means that there is a significant difference between the perceptions of the two groups of respondents on the school administrators' technology competence in instructional technology supervision with respect to aforementioned variables. It can be manifested that both respondents have opposing views on the school administrators' technology competence that established systematic approach with ICT integration. Which agrees with the study of Baharuldin et al. (2019) indicating that school administrative support and

teachers' ICT literacy play an important role in shaping teachers' ICT competence. Likewise, the result provided further evidence that the school principals, through teachers' ICT, play an important role in integrating ICT in the classroom.

*Respondents Perceptions on the School Administrators' Motivational Styles.* It is apparent that the school administrator respondents' perceptions on their motivational styles in terms of expectancy (OWM = 4.52, SD = 0.54) have the highest overall weighted mean rating with verbally interpreted as Strongly Agree (SA). Whereas the teacher respondents gave different perception in terms of valence (OWM = 4.12, SD = 0.85) with lowest overall weighted mean with verbal interpretation as Agree (A). The results conform to Zameer et al. (2014) (as cited in Rehman et al., 2019) indicating that motivation plays a significant role in driving organization's progress. Hence, teachers who are especially competent in their work need to be commended by school administrators by giving awards or recognitions since these recognitions affect their motivation to work.

*Significant Difference on the Perceptions of Teacher-Respondents and School Administrators Respondents on the School Administrators' Motivational Styles.* The perceptions of the two groups of respondents on the school administrators' motivational styles in terms of expectancy ( $t = 0.00$ ,  $p = 1.00$ ) is statistically not significant, which is above 5% significant level which reveals no significant difference in terms of expectancy. On the other hand, instrumentality ( $t = 3.42$ ,  $p = 0.00$ ), and valence ( $t = 0.43$ ,  $p = 0.00$ ) are statistically significant, which are less than 5% significant level which shows a significant difference in terms of instrumentality and valence. Generally, the perceptions of the two groups of respondents on the school administrators' motivational styles ( $t = 4.19$ ,  $p = 0.00$ ) is significant which is less than 5% significant level which results to a significant difference between the perceptions of the two groups of respondents on the school administrators' motivational styles. Based on the result of the study, the perceptions of the two groups of respondents may show self-importance especially if appropriate rewards or incentives are given to good work results or high performance which concurs with Duraku and Hoxha (2021) expressing school leaders' leadership styles and practices are among the main factors in teacher's work motivation as well as their motivation for complimentary task to complete specific tasks. In addition, Rehman (2019) claims that the motivation of employees is closely linked with productivity level.

*Performance Ratings of the Teacher Respondents for the Three Years.* Teacher-respondents have almost the same performance ratings for the last two consecutive school years: 2018-2019 (WM = 4.57), and 2019-2020 (WM = 4.52) which are verbally interpreted as Outstanding, while school year 2020-2021 (WM = 4.43) differs which is verbally interpreted as Very Satisfactory.

*Significant correlation between the perceptions of the Teacher-Respondents and School Administrators Respondents on the School Administrators' Technology Competence in Instructional Technology Supervision and Teachers' Performance.* Pearson Product Moment Coefficient was conducted to explore the correlation between the mean performance rating of the teacher respondents for the three consecutive school years (School Year 2018 to 2021) and the perceptions of the teacher-respondents and school administrator respondents on the school administrators' technology competence in instructional technology supervision in terms of personal leadership, learning and teaching, school culture, talent management, and planning operations. The school administrators' technology competence ( $r$ -value = 0.850,  $p = 0.000$ ) is below the 0.05% level of significance. There is a moderate positive correlation between school administrators' technology competence in instructional technology supervision and teachers' performance as indicated by the  $r^2$  value of 0.722. The result conforms to the study of Tyagi (2010) (as cited in Comighud et al., 2020), stating that instructional supervision needs to provide guidance, support, and empowerment of teachers for their professional development. Further, school administrators have major roles in improving the competence of teachers and it could be attributed to teacher's classroom practices and instructions, personal and professional development (Yu and Prince, 2016).

*Significant correlation between the perceptions of the Teacher-Respondents and School Administrators Respondents on the School Administrators' Motivational Styles and Teachers' Performance.* The school administrators' motivational styles ( $r$ -value = 0.845,  $p = 0.000$ ) is less than the 5% level of significance for the teacher respondents. There is positive correlation between school administrators' motivational styles and teachers' performance as indicated by the  $r^2$  value of 0.714. It can be presumed that motivational factors also influence teacher's job satisfaction either positively or negatively. When applied negatively in the school system it will cause dissatisfaction which results to withdrawal, neglect of duty and negative outcome (Onjoro et al., 2015). Therefore, school administrators' leadership styles and practices play a significant role that could lead to teacher's work motivation and organizational progress according to Duraku and Hoxha (2021).

#### 4. Recommendations

Based on the results of the study, it is worthy to note that a technology-based leadership development program for school administrators can be proposed and developed. This would be effective and appropriate to address the needs of school administrators and teachers, with respect to personal leadership, learning and teaching, school culture, talent management, and planning and operations and sustain the improvement of school administrators' technology competence in instructional technology supervision. Moreover, in improving the school administrators' motivational styles in terms of expectancy, instrumentality, and valence.

Further, school administrators may use this study as basis in developing further technology-based leadership development program to incorporate technology into the process of monitoring and evaluating teachers' performance which is necessary to ensure quality education. Moreover, other researchers may conduct parallel studies to develop more technology-based leadership development programs that are timely and useful in the digitalization of education.

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# PERCEPTION OF VISUAL NARRATIVE AS A COMPONENT OF DIGITAL NATIVES' INTERNAL COMMUNICATION

**Sandra Veinberg**

*Professor at the Faculty of Social Sciences Liepaja University (Latvia)*

## Abstract

In physical sciences, music has traditionally been considered an acoustic phenomenon because its perception is related to hearing. For a long time, most music recordings were distributed in exclusively audio formats. But with the development of a screen version of a song or film adaptation of music and with the popularization of video streaming services in the last decade, visual representations have become available and are now one of the most popular challenges in music distribution, especially among the younger generation. The visual component is not a minor aspect of music perception, but an important factor in conveying meaning. The topic of this research is the analysis of the visual component of the music video or MV. This research aims to investigate the impact of visual cues on the perception of musical messages. This study seeks to understand how 86 art students from two Latvian universities perceive MV impulses within their internal communication systems. Participants watched Jonas Åkerlund's music videos and analyzed their perceptual effects individually and collectively during a discussion in a university auditorium. Art reception analysis was employed as the study methodology. Bourdieu's theory of mediated decoding operation was utilized to assess whether the students could decipher the video artist's message. Cognitive Dissonance Theory and Symbolic Interaction Theory were also employed to analyze the results, as internal communication research has been influenced by sociogenetic theorists and was thus utilized to ensure the proper processing and interpretation of the collected data. This is already the fourth study dedicated to analyzing the internal communication of digital natives through music video perception.

**Keywords:** *Digital natives, music video, Jonas Åkerlund, Pierre Bourdieu, intrapersonal communication.*

## 1. Introduction

The social structure encompasses the patterned relationships between individuals that persist over time. Each social structure fosters its own unique social perception, a process by which individuals utilize the behavior of others to form opinions or make inferences about those individuals. Consequently, each social structure resembles a unique pair of glasses through which individuals perceive external stimuli. This phenomenon extends to art perception. New social groups, upon entering the scene, adopt art forms that align with their sensibilities, demonstrating their distinct approach to consuming artistic impulses compared to preceding generations.

This difference may be illuminated by its resemblance to the concept of a "foreign language" as formulated by Mikhail Bakhtin in linguistics. This language enters and begins to function without an existing context (Volosinov, 102), remaining incomprehensible for a period to the dominant sections of society and traditional culture.

One such "foreign language" is music video art, which is rapidly developing alongside the digitalization of society. The native residents of this socio-economic formation are digital natives, who have learned screen communication since childhood and favor it over other art forms.

The grammar of their foreign language is the following: 1) They have access to a vast array of art and information readily available on their screens and the internet. 2) They don't need to go to the theater or concerts as they can access a diverse range of artistic experiences through their smartphones and computers. 3) Digital natives have a distinct approach to art consumption. Digital natives consume art continuously, following impulses on their phone screen: on the street, at a bus stop, in a canteen, during lessons at school or university and talking to parents at the dinner table. 4) Digital natives are immersed in the digital realm. They maintain a constant connection to art through the internet.



Music videos were initially created as a form of entertainment for young people, and they have since become a popular and influential art form. Digital natives, who have grown up with technology and are accustomed to consuming information and entertainment through screens, have embraced music videos in a way that previous generations have not. This suggests that music videos can be seen as a cultural manifestation of the digital age, reflecting the values, attitudes, and preferences of this new generation.

Music has long yearned for a visual dimension. Several classical composers indicated in their scores a desire for visual accompaniment during concert performances. Among these were Johann Sebastian Bach (1685-1750), Wolfgang Amadeus Mozart (1756-1791), and Ludwig van Beethoven (1770-1827). Claude Debussy (1862-1918), a pioneer of Impressionistic music, employed music to conjure imagery of light, water, and other natural phenomena (Latham, 2002; Burkholder, Grout & Palisca, 2010). Alexander Scriabin's (1872-1915) most ambitious and radical work, *Prometheus, or The Poem of Fire* (1919), is a tone poem for orchestra, chorus, and piano. Scriabin envisioned it accompanied by a 'light organ' that would project colored lights onto the stage (Bentham, 1980). However, no such light organ was ever created.

About 130 years ago, the first cinematographers emerged and experimented with combining music and film. In the early 1900s, several musicians started producing short films to showcase their songs. By the 1920s and 1930s, musical short films gained popularity, paving the way for the modern music video. Music videos exemplify postmodern media art as they continue to innovate and explore new ways for artists to tell stories and express their musicality.

To analyze the perception of music videos (M/V) as art (which was done in this study) we use the works of the supporter of anti-authoritarianism with acute sensitivity to the role of ideology in asserting and maintaining political and economic power, the Swedish director and filmmaker Jonas Åkerlund. The focus group of this study included only digital natives who are concurrently studying audiovisual media arts at university.

The primary objective of this research is to investigate whether the process of decoding artistic impulses can be considered a form of internal communication during interactions with art. To elucidate this concept, we have designed an experiment involving four key elements: 1) Jonas Åkerlund's music videos as artistic artifacts, 2) digital natives as recipients, 3) Pierre Bourdieu's theory of mediated decoding operations, and 4) relevant existing research on the processes of internal communication in art perception.

## **2. Methodology**

To explore the dynamics of art communication among young people, a qualitative reception analysis was conducted. The study involved 86 participants, with an average age of 23.5 years, all of whom were students at Liepaja University and RISEBA in Riga. The study took place from September to November 2023. Participants were shown the music video "The Cardigans. My Favourite Game" by Jonas Åkerlund and then engaged in both individual and group discussions to analyze its perceptual impact. Subsequently, each participant selected and analyzed a different music video of their choice. Four focus group discussions were held throughout the study. The study author then reviewed and analyzed the 86 individual analyses, compiled both in PowerPoint presentations and written commentaries.

To further contextualize the findings, a similar study from the previous year was consulted, which focused on the analysis of MV perception. The study employed reception analysis as the primary methodological approach, drawing upon the works of Eriksson (2006), Holub (1984), and Hall (1980). This approach was complemented by Bourdieu's theory of mediated decoding operations (Bourdieu, 1992)

## **3. Analysis, findings and results**

### **3.1. The first step in the perception of an idea**

Understanding how people comprehend visual narratives, including picture stories, comics, and film, requires integrating traditionally separate theories that span the initial sensory and perceptual processing of complex visual scenes, the perception of events over time, and comprehension of narratives (Loshky, 2020, p. 311). The Scene Perception & Event Comprehension Theory (SPECT) is one of the most recent and currently prominent theories in the field of art perception analysis. While psychology has primarily focused on analyzing these processes, our narrative analysis differs from that of psychologists as it focuses on the relationship between the artist's message (code) and its interpretation by the audience, who attempt to decode and comprehend this code.

This process is described by French sociologist Pierre Bourdieu as a mediated decoding operation. Immediate and accurate comprehension is only possible in the rare instance when the cultural code that enables the act of decoding is fully grasped and internalized by the observer, either through acquired knowledge or a natural predisposition, and aligns with the cultural context (Bourdieu, 1992)

In our research, we wanted to find out if this is how the first step in the perception of an idea proceeds. So: a) do the students surveyed know that such a code will be offered? b) are they confident that they will be able to decipher it?

Half of the surveyed students admit that such a code of the author's message exists in the work of art, but only 2% of them are able to decipher it. 40.9% believe that such a code is "probably hidden somewhere" but agree that it is often not noticed and deciphered.

If students are presented with multiple specific interpretations of the artistic code in the music video "My Favourite Game," 6% of respondents agree with both versions of the offered "interpretation" or didactic conclusions: a) Losing the game can result in losing your life, b) If something fails, you should not do it. An additional 18% of respondents agree that the car ride is a metaphor that illustrates how individuals are responsible for their own problems in all life situations. These findings support the notion that some individuals utilize all four stages in their internal communication, while others may skip or omit the second or third stage entirely (Veinberg, 2023).

Our previous research in this direction has proved that the perception of artistic impulse is a part of internal communication. (Veinberg, 2023; 2020) and the decisive factor in the perception of the work of art is still the wow-effect (52%), although 22% rate it as insignificant.

Students gravitate towards artists or artworks that evoke a sense of surprise, placing a premium on the brilliance and impact of the conveyed message. Unlike its application in other industries, such as healthcare or financial services, the wow-factor in art can effectively capture attention even when it triggers unpleasant associations, irritation, or anger (31%).

The following responses were received to explain the wow effect: strange screen characters (14.9%), awkward, complicated relationship situations (13.8%); a powerful message (12.6%), unusual storyline (12.8%); recognizable sensations, for example, driving a car, exceeding the speed limit (23%); journalistic style (4.48%).

This means that music videos can come to the attention of digital natives due to two identified reasons: a) it suits my taste or likes 52%, so I always only choose distributors that I like and know (45.6%) or b) it contains the wow-effect (52%). The research proved that it is almost impossible to attract attention with an unknown distributor or author of MV, because digital natives watch and listen only to those fillers and MV authors that they already "roughly know", "know" and are sure that they "like it". (52%). An exception to this choice only occurs if friends suggest to watch something previously unknown (21.4%), someone forces you to watch it (17.4%), if you suddenly manage to understand the message code (39.9%), if MV are watched together with friends and acquaintances (21.4%).

This means that it is difficult to get the students surveyed to choose to focus on the work of a lesser known or unknown author. They consume art just like food - they order only what they know and know they like. Until now, it has been believed in the reception of art that the acceptance of unknown authors is connected with the fact that the public does not buy tickets for performances of unknown authors, film screenings, because they do not want to spend money on untested goods. In other words, there are objective obstacles (money, space, time) that prevent us from focusing on areas of art that have not been studied so far. This study demonstrates that there are no such limitations. MV are available on the phone or computer and the viewer decides for himself which ones to choose and which ones not to.

### 3.2. Art narrative with basic instincts and emotions

A substantial portion of surveyed students (18.6%) recognize the strong plot logic in Jonas Åkerlund's music videos. This narrative prowess, as acknowledged by 12.9% of respondents, effectively engages viewers, drawing them into the unfolding events on screen. The immersive nature of Åkerlund's storytelling fosters empathy for the main character and even creates the illusion of personal participation in the narrative. As a result, the audiovisual narratives in his music videos captivate audiences (18.6%), offering an inviting escape into a world of captivating stories.

Jung identified five instinctive factors: creativity, reflection, activity, sexuality and hunger. Our study confirms the presence of these instincts: 1) the theme of driving on the highway at maximum speed resonates with viewers (21.6%); 2) the presence of details like rings with skulls, a bandaged hand after cutting the veins, and the sacrifice of a beloved toy suggests that 9% of respondents can interpret the artist's symbolic language. 3) 12.2% of respondents can identify and relate to the protagonist's experiences of love, success, and failure, demonstrating their capacity for empathy. Interestingly, the majority of respondents still prioritize aesthetic pleasure in their evaluation of the artwork, suggesting that

while instinctive drives influence our perception of art, aesthetic considerations remain a significant factor, i.e. be "candy for the eyes and ears" (22%).

Individuals seek out "tasty information" in the art kitchen, just as they do in their own internal communication processes (Veinberg, 2023). Internal communication employs a specific defense mechanism that resembles a black-and-white rating scale. Information deemed "tasty and wholesome" is readily absorbed, while messages perceived as suspicious, difficult, or unwanted are excluded from internal dialogue. This selective filtering mechanism can be attributed to the principle of energy conservation, which applies to communication as well. If individuals lack control over incoming information, the influx of unwanted or overwhelming stimuli can lead to "overheating" of internal communication, resulting in internal stress.

Survey participants indicated that a familiar environment plays a crucial role in their engagement with art, facilitating emotional involvement in the events unfolding on the screen (29.3%). This finding suggests a parallel between communication with engaging video art and internal communication with oneself. Internal communication, like a dialogue with a close friend or like-minded individual (Veinberg, 2019), involves a receptive and open mindset, allowing for the intake of stimulating and enjoyable information.

#### 4. Discussion and conclusion

Music videos have emerged as one of the most prevalent forms of art in the digital natives' online landscape. This group of recipients possesses a unique ability to decipher and grasp the cultural codes embedded within the artist's message.

The first stage of engagement with music videos is often triggered by the "wow factor," a captivating element that emotionally enralls the audience, immerses them in the artist's world (escapism), and temporarily satisfies fundamental human instincts.

Despite their relatively short duration, music videos can evoke powerful emotional responses through the skillful employment of expressive techniques such as symbols, details, exaggerated scenes, intense experiences, dramatic editing, and characters navigating emotionally charged situations.

This ability to evoke deep emotions within a short timeframe suggests a parallel between engaging with captivating video art and engaging in internal dialogue with oneself.

The potential of music videos extends beyond the realm of artistic training, offering valuable applications in various educational fields within higher education. They serve as catalysts for stimulating discussions and fostering the exchange of diverse perspectives among young minds.

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## MENTALIZATION, EDUCATIONAL STYLE AND LEARNING

**Alessandro Frolli, Clara Esposito, Francesco Cerciello,  
Rossana Pia Laccone, & Fabio Bisogni**

*Department of International Humanities and Social Science,  
Rome University of International Studies (Italy)*

### Abstract

The term Theory of Mind (ToM) defines the ability of understanding thoughts, emotions and desires of others. Precursors of ToM are Mentalization and Reflexive Functions experienced in the relationship with the figure of primary care. We can describe the Mentalization as a combination of self-reflective and interpersonal components. The Reflexive Function (RF) consists in the mental ability to manage the proper and the other ones behavior. In this way, children could respond not only to the others' behavior but also to their feelings, beliefs and expectations. In addition, an essential aspect is the educational styles to which they are exposed from the early experiences. It consists in two aspects: demandingness (requesting discipline from children) and responsiveness (emotional support). The first dimension includes the demands of parents regarding the observance of the rules. The second dimension includes the responsiveness of parents in child development by fostering his self-esteem, the perception of an individual identity and the self-regulation and the awareness of his abilities. On the basis of these two dimensions, we can identify four educational styles: authoritative, authoritarian, permissive and disinterested. It has been highlighted that the authoritative parenting style is the one that allows a balanced growth of children because there is a balance between: demandingness and responsiveness. We examined 30 teachers of primary school with their own class composed by 20 students. In total we had 600 pupils. In order to assess the teachers' level of mentalization we administered every teacher with RFQ\_8 test after 4 months of school. After, we investigate children academic achievement with BVSCO-2, Test MT 3 Clinic and Test AC-MT 6-11. We found that a good level of mentalization, expressed in term of certain scale of RFQ\_8 had significance influence of learning skills measured in terms of errors and in terms of time. Our results show a correlation between mentalization skills measured in teachers and student learning in terms of reading, writing and arithmetic skills. The aim of this study is about how a good level of teacher mentalization could be positively related to children's learning.

**Keywords:** *Theory of Mind, Mentalization, educational styles, learning.*

### 1. Introduction

Theory of Mind is the ability to impute mental states to the self e to the others as a way of making sense and predicting behavior (Premack & Woodruff, 1978). These abilities are not innate but they begin at the development of the child, due to an healthy interaction with the primary attachment figures. This interaction allows children to be able to represent not only their own mental states but also the other ones. ToM is essentially focused on social aspects because it allows to understand the behavior of others, even if it is not directly explained. This ability leads to the possibility of predicting the behavior of the people we observe. Precursors of ToM are Mentalization and Reflexive Functions experienced in the relationship with the figure of primary care. We can describe the Mentalization as a combination of self-reflective and interpersonal components which provides the ability to reflect and understand their own and the other ones mental and emotional states. The development of this ability leads to recognize actions as a result of mental states. Attachment is defined as an innate behavioral system that "predisposes children to show attachment behaviors [...] that serve to increase closeness to the caregiver, particularly in times of distress" (Jedrychowski et al., 2012). The Parental Reflective Function refers to the ability of the caregiver to reflect on their own internal mental experiences and those of the child (mentalization). This ability is important for the development of emotional regulation, the development of the agency, and a secure attachment relationship. The reflective functioning of parents (PRF), or mentalization of parents, is defined as the ability of the parent to reflect on the ongoing psychological processes in the child and

himself as a parent (Borelli et al., 2017). Therefore, PRF allows the parent to "decode" the child's behavior, linking it to internal states, and thus provides the parent with a greater understanding of the child's needs (Borelli et al., 2017). PRF is believed to play a role in parental sensitivity (Ensink et al., 2017) and in important aspects of child development, such as the regulation of emotions and the development of the child's reflexive abilities, as well as the child's behavioural problems (Rostad & Whitaker, 2016; Senehi et al., 2018). Weaknesses in PRF typically lead to problems in the proper "reading" of the child's mind, which, in turn, adversely affect the quality of parental caring behavior (Katznelson, 2014; Camoirano, 2017). Reflexive functions can manifest in hypermentalization or hypermentalization that will affect both the parent's educational style and the attachment relationship. Parental involvement practices are initiated by parents and they could be different depending on parents. This goal can be achieved by parents using attitudes and behaviors that we can imagine along a continuum, at an extreme of which we find the affective coldness and the rigid imposition of rules, to the other affectivity and autonomy albeit conditioned by clear and congruent rules. These poles may correspond to two dimensions: one based on making demands and exercising control in a way that does not take into account the characteristics and needs of the child, The other is characterized by an education based on a positive attitude towards the child, which takes into account his individuality and needs. From these dimensions have been outlined four educational styles (Abdul Gafor & Kurukkan, 2014): 1) Permissive - forgiving: the affectivity of the parents is not accompanied by the ability to set rules and behavioral limits, therefore few requests are addressed to the child. In this style we find a fall in requesting function and an excess in the reflexive function; 2) Permissive - indifferent: the disinterest and the poor involvement of parents in the life of the child are the main characteristics. The son is basically left to himself, without guidance and emotional restraint, master of a freedom that can cause a state of confusion. In this style we find a fall in both the reflexive function and the requesting function; 3) Authoritarian: parents impose rules without motivating them and not contemplating the possibility of questioning them, they therefore expect the child a total and uncritical adherence to their desires; transgression of the rules involves immediate punishment. In this style we find a fall in reflexive function and an excess in the re-questing function.; 4) Authoritative: parents who follow this educational model, in addition to expressing a sincere interest in the life of the child and strengthening his autonomy, are affectionate, sensitive to his needs and his requests. In this style we find a balance in the reflexive function and in the required function. At the same time, they are able to exercise careful and respectful control over their lives and behaviour, impose limits and rules, clarify their meaning and be willing to discuss their validity. It is understandable that this is the most positive educational style, as it facilitates the development of autonomy and self-confidence, social relations and a sense of responsibility.

The main goal of our research is to explore how a good level of teachers' mentalization could affect children' educational school achievements.

## 2. Methods

In this study, we examined 30 teachers of primary school with their own class composed by 20 students. In total we had 600 pupils. All participants were recruited from 3 primary schools in the area of Rome (Italy). Therefore, the inclusion criteria were as follows: (a) belonging to the same class level (third elementary grade), (b) students with no medical or psychological diagnosis; (c) a IQ between 95 and 105 assessed through the WISC-IV (Wechsler, 2003); (d) medium-high socio-cultural class assessed through the SES scale (Rossi, 1994). After confirming the inclusion criteria of the sample, in order to assess the level of mentalization we administered every teacher with RFQ\_8 test (Luyten, 2017). In conclusion we investigate children academic achievement with BVSCO (Cornoldi & Tressoldi, 2013), Test MT 3 Clinica (Cornoldi et al., 2015) and Test AC-MT 6-11 (Cornoldi et al., 2020). The aim of this study is to investigate how the RFQ teachers' results correlates with the level of academic achievement of the class.

### 2.1. Instruments

The protocol used consists of the following tests:

- SES: Self-administered questionnaire that allows collecting information about the level of education and professional of parents and indicates the position of the person or family within the social system (Rossi, 1994).
- WISC-IV: The IQ has been evaluated through the administration of Wechsler scales (Wechsler, 2003), multicomponent intelligence scales that allow to synthesize the intellectual ability of a subject through a global IQ index, the Verbal Comprehension Index (ICV, verbal reasoning ability on the basis of previously learned information), the Visuo-Perceptive Reasoning Index (IRP), the Index of Working Memory (IML, ability to maintain information and use it within seconds) and the Processing Speed Index (IVE, ability to process information efficiently);

- RFQ\_8 (Reflective Functioning Questionnaire. Self-administered questionnaire that evaluates the level of mentalization possessed by two subscales, which evaluate certainty (RFQ\_C) and uncertainty (RFQ\_U) about the mental states of self and others. The highest scores at these subscales indicate two distinct RF disorders, respectively, hypomentalization and hypermentalization. Hypomentalization reflects concrete thinking and poor understanding of the mental states of self and others, while hypermentalization describes that attitude towards the identification of too certain and detailed patterns of mind and mental states not supported by evidence (Luyten, 2017);
- Test MT – 3 Clinic: to measure reading and comprehension skills from primary school to the second year of secondary school (Cornoldi et al., 2015);
- BVSCO -2: to evaluate all aspects involved in the learning path of writing: graphism, spelling competence and the production of written text (Cornoldi & Tressoldi, 2013);
- AC-MT 6-11: for the assessment of numerical and computational skills including tests of calculation and writing and recovery of arithmetic facts (Cornoldi et al., 2020).

## 2.2. Procedures

Mentalization as a combination of self-reflective and interpersonal components which provides the ability to reflect and understand their own and the other ones mental and emotional states. The development of this ability leads to recognize actions as a result of mental states. The Reflexive Function (RF) consists in the mental ability to manage the proper and the other one's behavior. In this way, children could respond not only to the others' behavior but also to their feelings, beliefs and expectations that underpin and motivate human behavior. The RF is strictly linked to attachment: indeed, a secure attachment allows the development and improvement of cognitive and socio-affective intelligence, emotional regulation and the ability to mentalize. In order to assess the teachers' level of mentalization we administered every teacher with RFQ\_8 test after 4 months of school (Luyten, 2017). After, we investigate children academic achievement with BVSCO (Cornoldi & Tressoldi, 2013), Test MT 3 Clinic (Cornoldi et al., 2015), and Test AC-MT 6-11 (Cornoldi et al., 2020). The aim of this study is to investigate how the RFQ teachers' results correlates with the level of academic achievement of the class.

## 3. Results

Data analysis was carried out using the SPSS 26.0 statistical survey software. Significance was accepted at the 1% level ( $\alpha < 0.01$ ). In that study, we decided to perform a correlation analysis to investigate whether faculty mentalization skills could affect the average school attendance of students. From our analysis positive correlations emerged between the Certainty subscale and the performance of students measured at reading tests in correctness [ $r = 0.962$ ;  $p < 0.001$ ], at mathematics tests in correctness [ $r = 0.908$ ;  $p < 0.001$ ] and at writing tests [ $r = 0.954$ ;  $p < 0.001$ ]. These data show that as you increase the certainty of your mentalization skills and the ability to understand mental states, you improve your students' performance skills (expressed in a reduction in the number of errors to the tests administered). In addition, inverse correlations were found between the Certainty sub-scale and the performance of the students measured at the speed reading tests [ $r = -0.956$ ;  $p < 0.001$ ], under understanding [ $r = -0.921$ ;  $p < 0.001$ ] and at the speed mathematics tests [ $r = -0.926$ ;  $p < 0.001$ ]. These data show that as teachers' mentalization skills and ability to understand mental states in others increase, so do students' performance skills (expressed in a reduction in the time taken to complete the tasks of speed and a reduction in errors in comprehension tests). Regarding to the Uncertainty subscale, positive correlations were found with the performance of the students measured at the reading tests in rapidity [ $r = 0.944$ ;  $p < 0.001$ ], in comprehension [ $r = 0.905$ ;  $p < 0.001$ ] and at the mathematical tests in rapidity [ $r = 0.928$ ;  $p < 0.001$ ]. These data show that with decreasing uncertainty in faculty mentalization skills and the ability to understand mental states in others, they improve students' performance skills (expressed in a reduction in the time taken to complete the tasks of speed and a reduction in errors in comprehension tests). Inverse correlations were also found between the Uncertainty subscale and the performance of the students measured at correctness reading tests [ $r = -0.955$ ;  $p < 0.001$ ], at correctness mathematics tests [ $r = -0.914$ ;  $p < 0.001$ ] and at writing tests [ $r = -0.948$ ;  $p < 0.001$ ]. These data show that with decreasing uncertainty in faculty mentalization skills and the ability to understand mental states in others, they improve students' performance skills (expressed in a re-duction in the number of errors in the correctness tests) [Table 1].

Table 1. Correlations between RFQ and Learning outcomes.

|       |   | MT_CORR | MT_RAP  | MT_COM  | AC_MT_CORR | AC_MT_RAP | BVSCO_ERR |
|-------|---|---------|---------|---------|------------|-----------|-----------|
| RFQ_C | r | .962    | -.956   | -.921   | .908       | -.926     | .954      |
|       | p | <0.000* | <0.000* | <0.000* | <0.000*    | <0.000*   | <0.000*   |
| RFQ_U | r | -.955   | .944    | .905    | -.914      | .928      | -.948     |
|       | p | <0.000* | <0.000* | <0.000* | <0.000*    | <0.000*   | <0.000*   |

\*Statistical significance

#### 4. Discussion

Schools are often unresponsive to the needs of new generations; instead, they fail to understand the importance of competency-based instruction. Our research reveals that schools ignore the ability to place knowledge and expertise in context and fail to understand the importance of context when teaching concepts. Instead, schools should adopt a conceptual approach and curriculum focused on achievement. This would allow for schools to better respond to students' needs. Schools currently use a grade-based system. This causes students to struggle due to differences in their performance. Classifying students by age erases the educational benefits of encouraging students to interact with others and increase confidence. Instead, schools should highlight students' ability to solve problems and develop new skills through creative thinking. It is crucial to underline how different level of mentalization could affect education. It is well knowing how attachment is influenced by how parent handle ordinary situations with the baby. At the same way the faculty of ipomentalize or ipermentalize of teacher could have consequences on the learning ability of pupils. The ecological systems theory (Bronfenbrenner, 1979) highlights the influence of contextual factors on human behavior. Relationships and, in general, contexts close to the subject (microsystems) foster competence (King & Ganotice, 2014) and motivate school engagement (Veiga et al., 2012) providing they guarantee positive, affective support (Hughes & Chen, 2011). Traditionally, three microsystems (family, circle of friends and school environment) have been considered to have the greatest impact on adjustment among school children (Ou, 2005; Ramos-Díaz et al., 2016) with family being seen as the predominant one, even more so than school environment (Alves et al., 2017). However, more recent findings suggest that it is in fact teachers' support that has the greatest influence on school engagement, followed by family, while peers appear to have no effect at all (at least not directly) on this construct (Fernández-Zabala et al., 2016; Rodríguez-Fernández et al., 2016). Our analysis investigates how both high or low level of certain and uncertain could correlate with learning skill. We found that a good level of mentalization, expressed in term of certain scale had significance influence of learning skills measured in terms of mistakes and in terms of time. We confirm this data also in the correlation with the Uncertain Scale of Mentalization. For teachers, mentalization is a tool for understanding both students and their own mental states. Teacher mentalization is the process by which teachers understand students' minds and reflect on themselves, and these processes underlie the empathy that teachers display. Teachers affect children' learning ability based on their motivation to understand or not understand the internal state of students (Ickes, 2011; Smith et al., 2011). Identifying teachers' involvement in the process of understanding and responding to students' inner states with sensitive care is critical to effective classroom interaction.

#### 5. Conclusion

In conclusion, considering there are several effective factors in student's educational achievement, including motivational variables, teaching practices and classroom construction, therefore, we recommended further studies in order to find the effect of each factor with a more assertive methods and more advanced processing. We also want to underline the need to have a follow-up for a major generalization.

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# THE PREDICTIVE INFLUENCE OF THE BIG FIVE PERSONALITY TRAITS ON ADOLESCENT SELF-CONCEPT

**Lucia Paskova, & Lenka Ďuricová**  
*Faculty of Education, Matej Bel University (Slovakia)*

## Abstract

In today's dynamic and changing environment, the adolescent's social environment and social inclusion are vital because of the formative influence of experiences with the social environment on the adolescent's self-concept. Self-concept is among the most important predictors of mental health and quality of life in contemporary adolescents. The underlying concept of the present paper is the Piers-Harris model of self-concept, which is viewed following the Big Five concept. The main aim of the present study is to analyse the predictive influence of the Big Five personality traits on adolescents' self-concept. The research population comprised 1 013 Slovak adolescents (73% female, AM age = 17.00, SD age = 1.27). The research instruments used were the ASCSS/Adolescents' Self-concept Short Scale (Veiga & Leite, 2016) and the Slovak version of the NEO FFI personality questionnaire (Ruisel & Halama, 2007). Correlational analysis showed several moderately significant relationships between the Big Five factors and individual dimensions and with adolescents' overall self-concept. Regression analysis subsequently demonstrated a clear predictive effect of personality on adolescent self-acceptance, demonstrating that personality traits are an important source of adolescents' self-definition. Mental health promotion also emphasises the promotion of a favourable self-concept in adolescents, which creates room for the influence of professionals in counselling or school psychology. The paper is part of the project VEGA 1/0765/21 Multidimensional self-concept of the digital adolescent generation in Slovakia and its contexts.

**Keywords:** *Self-concept, Big Five, personality, adolescents.*

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## 1. Introduction

People have been dealing with questions like "Who am I? What shaped me this way?" since time immemorial. The answer is hidden within us - who we are - physically, emotionally, socially, spiritually and in terms of all the other aspects that make us who we are. Each of us has a unique self-concept that differs from others' self-concepts and perceptions of us.

Baumeister (1999) argues that self-concept is a person's beliefs about themselves, including their characteristics and who and what they are. According to Rosenberg (1979), self-concept is the totality of an individual's thoughts and feelings that relate to themselves as an object.

Attention to self-concept has been extensive in recent years. It is currently defined as a hypothetical construct explaining a person's behaviour and experience. Balcar (1983) argues that a conscious formulation of the self is not necessary for ordinary life because the function of self-concept is mainly motivational, often exercised at an unconscious level.

Blatny (2001) distinguishes three aspects that characterise self-concept. These are the cognitive aspect, which refers to the content and its organisation (self-image, self-awareness); the affective aspect, which refers to the emotional relationship to oneself; and the conative aspect, which expresses the fact mentioned above that self-concept has a motivational - self-regulatory application (self-esteem, self-efficacy).

The fundamental change in the view of self-concept compared to the 1960s is that self-concept ceased to be regarded as a global, holistic idea of the self, consistent across time and situations. Its multifaceted, hierarchically ordered structure and the dynamics of its functioning depending on both so-called self-motives and situational context are now being emphasised (e.g. Markus & Wurf, 1987; Harter, 1996; Bandura, 1999).

In general, authors agree that an individual's unique self-concept:

- Is a learned-not innate-multidimensional construct, encompassing our views of the self in terms of many different aspects (e.g. social, religious, spiritual, physical, emotional);
- is influenced by biological, environmental, and social factors;
- is inter-individually dependent on context and time;
- develops most strongly in childhood and early adulthood, when it is more easily changed or updated;
- takes on different valences, ranging from a positive to a very negative pole.

### 1.1. Determinants of self-concept

One of the most important internal factors influencing an individual's self-concept is personality. An analysis of the relationships between the Big Five personality traits and self-concept reveals the following:

- More extraverted individuals tend to perceive themselves as influenced by social interaction. Their self-concept is influenced by how other people perceive them and how they feel in social situations;
- More neurotic individuals may tend to perceive themselves as influenced by emotional instability and anxiety;
- More open individuals have a more variable and complex self-concept influenced by their ability to adapt;
- Self-concept of individuals with higher agreeableness is associated with their ability to affiliate;
- Individuals with higher conscientiousness tend to perceive themselves as responsible, goal-oriented, and well-organised individuals whose self-concept is mainly determined by their tendency to plan and achieve goals (Larsen & Buss, 2009; Pilarska, 2018; McEwan et al., 2019).

The relationship between personality traits and self-concept is, of course, more complex and influenced by individual experiences, environment, and social context. In addition to family members and close friends, other people can contribute significantly to self-identification. Pesu, Viljaranta and Aunola (2016) found that the more a teacher believes in the abilities of a high-achieving student, the higher the student's self-concept (no such association was found for lower-achieving students). The most significant external determinants of self-concept include:

**The family environment** significantly influences the development of self-concept in children. Interactions with parents and other family members, relationships and expectations formed in the family environment can shape how an individual perceives themselves.

**The school environment** and interactions with peers and teachers can influence self-concept success or failure in school; social relationships and the ability to cope with school challenges can significantly impact how an individual perceives their abilities and worth.

**Culture and society** - cultural norms, values and expectations create the framework within which self-concept is formed. Each culture may emphasise different aspects of identification and value, which influences how an individual perceives themselves concerning their cultural affiliation.

**Individual abilities and performances** manifested in personal accomplishments, skills, and abilities may influence how an individual perceives themselves. Successfully overcoming challenges and achieving goals can reinforce a positive self-concept.

**Social relationships** in the form of interactions with other people, including family, friends, and romantic partners, greatly influence self-concept. Acceptance, rejection, support, or conflict in these relationships can shape self-concept.

**Individual experiences and events** can have a profound effect on self-concept. Experiences such as traumas, successes, or failures can shape how an individual perceives themselves and their place in the world.

**Social comparison**, or comparing oneself to others, can be an important factor in self-concept formation. Comparing one's abilities, appearance, or achievements with others can influence one's perception of self-worth.

**Shared stories** - self-concept can also develop through shared stories. For example, one study found that female readers who were "deeply invested" in a story about a main character with a traditional gender role had a more feminist self-concept than those who were not as moved by the story (Richter, Appel & Calio, 2014).

Whether mass or social media, **media** is one of the most significant formative factors today. According to Vandenbosch and Eggermont (2015), if these media promote certain ideals, an individual is likelier to adopt them. Moreover, the more often these ideals are presented, the more they influence an individual's self-identity and self-concept.

Self-concept development is a dynamic process where these determinants can interact and change over time. Individual differences, life circumstances, and personal experiences contribute to each individual's unique self-concept.

### 1.2. Self-concept in adolescence

Adolescence is a period of complete personality transformation, and identity or self-concept is also subject to dynamic changes. Comparison with other adolescents forms the foundations of a relatively permanent self-concept. During this period, adolescents tend to self-deprecate, have exaggerated self-esteem, and are easily influenced by peers and the chemical changes occurring in their brains (Sebastian, Burnett, & Blakemore, 2008). They enjoy greater freedom and independence, engaging in increasingly competitive and often risky activities (Manning, 2007). According to Manning (2007), two factors are significant in adolescence with formative solid influences:

- Achieving success in the personal engagement zone;
- Approval from persons significant to the individual.

Self-concept development is never complete. Although self-identification is thought to be formed primarily in childhood, experiences in adulthood can alter an individual's current self-concept. For example, a more positive self-concept subsequently occurs in the case of increased self-esteem.

In recent decades, self-concept has been analysed as a multidimensional construct conditioned by intrinsic and contextual variables (Craven & Marsh, 2008; Veiga, 2012), which allows not only delving deeper into the essence of how a person perceives themselves but also explaining or predicting their behaviour. The present study aims to analyse the importance of personality in terms of the Big-Five concept in predicting self-concept.

## 2. Methods

The study population comprised 1 013 adolescents from Slovakia (15 - 20 years), 73% female and 27% male. The research data collection was based on volunteering and conducted online.

Self-concept was measured using the Adolescent Self-Concept Short Scale/ASCSS (Veiga & Leite, 2016), which consists of 30 items from the original PHCSCS - 2 / Piers-Harris Children's Self-Concept Scale 2 (Piers & Herzberg, 2002). Each of the six dimensions (Anxiety, Physical Appearance, Behaviour, Popularity, Happiness, Intellectual Status) comprises five items, and the respondent expresses their agreement using a 6-point Likert scale (1 = strongly disagree; 6 = strongly agree). For the study, we worked with the adolescent's total self-concept score. The internal consistency of the individual dimensions in the adapted version of this instrument used in our research was satisfactory ( $\alpha = .70-.84$ ); the reliability of the research instrument as a whole was also satisfactory ( $\alpha = .88$ ).

The Big Five personality traits were identified using the 60-item version of the NEO-FFI (Ruisel & Halama, 2007); each of the five scales (neuroticism, extraversion, openness to experience, agreeableness, and conscientiousness) is made up of 12 items, with the respondent answering using a 5-point scale (ranging from not at all true for me - to entirely true for me). For each factor, Cronbach's alpha ranges from .82 for the Agreeableness factor to .84 for the Neuroticism factor.

We used the JASP statistical program to process all the data collected in our research. Considering the results of the Shapiro-Wilk normality test, the relationships between the variables were examined through the non-parametric Spearman's correlation coefficient.

## 3. Results

Table 1 shows weak to moderately statistically significant associations of personality factors in terms of the Big Five construct, except for agreeableness, with adolescents' total self-concept scores.

*Table 1. Relationship (Spearman correlation) between adolescent self-concept and personal factors Big five (N=1013).*

|                              | Extraversion | Agreeableness | Conscientiousness | Neuroticism | Openness to experience |
|------------------------------|--------------|---------------|-------------------|-------------|------------------------|
| <b>Self-concept (PH_TOT)</b> | .427***      | .035          | .433***           | -.684***    | .091**                 |

*Note:* \*\*\*  $p < .001$  ; \*\*  $p < .01$

Table 2 confirms the predictive power of personality factors regarding correlations again, except for agreeableness.

Table 2. Predictive influence of the Big Five personality traits on overall self-concept as measured by Piers-Harris ( $N = 1013$ ).

| Model                  | R     | R <sup>2</sup> | adj. R <sup>2</sup> | F       | p     |
|------------------------|-------|----------------|---------------------|---------|-------|
| H <sub>1</sub>         | .789  | .623           | .621                | 332.801 | <.001 |
| H <sub>1</sub>         | B     | Beta           | t                   | p       |       |
| (intercept)            | 3.882 |                | 28.810              | <.001   |       |
| Extraversion           | .216  | .288           | 13.871              | <.001   |       |
| Agreeableness          | -.019 | -.021          | -1.025              | .306    |       |
| Conscientiousness      | .234  | .235           | 11.352              | <.001   |       |
| Neuroticism            | -.477 | -.556          | -26.302             | <.001   |       |
| Openness to experience | .058  | .059           | 3.018               | <.01    |       |

Note: R = multiple correlation coefficient, R<sup>2</sup> = determination index, adj. R<sup>2</sup> = adjusted determination index, F = F-test result, p = F-test significance, B = unstandardised coefficient, Beta = standardised coefficient, t = T-test result, p = T-test significance

#### 4. Discussion and conclusion

Adolescents' self-perception is crucial as it influences their motivation, attitudes and behaviour. It also affects how we feel about ourselves as the person we think we are, including whether we are competent or have self-esteem. Self-esteem is more plastic when we are younger and still going through self-discovery and identity formation. As we get older and learn more about who we are and what is important to us, these self-assessments become much more detailed and structured, which is why we focus on adolescents' self-concept. Our findings clearly confirmed the Big Five personality factor relationships. We found that extraversion and conscientiousness were moderately related to overall self-concept in a positive direction. Neuroticism was most strongly though negatively related to self-concept, suggesting that a neurotic adolescent full of worry and anxiety will have a more negative self-concept than a more emotionally balanced individual. These findings are consistent with other authors (Pilarska, 2018; Larsen & Buss, 2009; McEwan et al., 2019). In the case of linear regression, these associations were again statistically significantly confirmed. According to our findings, the only personality factor with no predictive influence on adolescent self-concept is agreeableness.

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## LEADER'S SELF-EFFICACY AND GENERAL SELF-EFFICACY IN THE CONTEXT OF TRANSFORMATIVE LEADERSHIP

Lucia Paskova, & Eva Sollarova

*Faculty of Education, Matej Bel University (Slovakia)*

### Abstract

Self-efficacy is one of the most frequently analyzed predictors of leader effectiveness. We seek to offer an analysis of leader effectiveness through the most powerful self-regulatory mechanism influencing leader behavior in any organization, which is based on social cognitive theory - self-efficacy. The concept of general self-efficacy represents an individual's beliefs about his or her ability to successfully face specific job tasks or situations. The aim of the present paper is to analyze the interrelationship between general self-efficacy and specific leadership self-efficacy in the concept of the transformational leadership model. The research population consisted of 183 teachers - potential educational leaders with an average age of 43.5yrs. To measure general self-efficacy, the -General Self-Efficacy Scale (Schwarzer & Jerusalem, 1995; in Kosci et al., 1993) was used to assess self-efficacy by the leaders themselves. Specific leadership self-efficacy was measured by the LSE - Leadership self-efficacy scale (Bobbio & Manganeli, 2009). Different types of transformational leader behaviors were measured by the LPI -Leadership Practices Inventory instrument (Kouzes & Posner, 2013). Our research findings suggest a clear association between general and leadership self-efficacy, and an analysis of the association between self-efficacy and leadership behaviors suggests that the multidimensional LSE scale is a more parsimonious instrument that corresponds better with the specificity of leadership than the broader construct of general self-efficacy. Practical applications of the LSE scale can be envisaged in the selection of leaders, their assessment and in training programs in the work environment.

**Keywords:** *Leaders self-efficacy, general self-efficacy, self-concept, education, transformative leadership.*

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### 1. Introduction

**Self-concept** is a psychological construct encompassing how individuals perceive, evaluate, and understand themselves. It is an internal mental model of the self-integrating perceptions of one's individual physical characteristics - appearance, abilities, values, beliefs, and relationship to oneself. Self-concept can be positive (involving a realistic self-image associated with a positive attitude towards oneself, self-esteem, and positive attitudes towards one's abilities and values). However, it can also be negative (associated with low self-esteem, insecurity, and negative evaluative beliefs about oneself) (Anderson, 2011). Self-esteem develops over a lifetime under the influence of various factors, including family, education, culture, interpersonal relationships, and life experiences. Positive self-concept is often associated with improved mental health and resilience to stress (Greenwald & Farnham, 2000). According to Goleman (in Livi et al., 2008), self-knowledge and self-concept are the first and necessary steps towards self-management and managing others at the level of relationships, productivity, or increasing effectiveness. An important component of self-concept is a self-regulatory mechanism based on social cognitive theory - self-efficacy.

**Self-efficacy** represents an individual's beliefs about their ability to cope with specific work tasks or situations successfully and is formed based on specific (positive or negative) experiences of coping with work tasks. It is based on an individual's belief in their abilities to achieve goals, solve problems and cope with challenging situations. There is a reciprocal relationship between self-image and self-efficacy as a positive self-image and attitude reinforces self-efficacy beliefs and higher self-efficacy leading to achievement and experience of success, which in turn reinforces the individual's self-confidence and overall self-image. The concept of general self-efficacy as part of Bandura's social cognitive theory describes effective individuals as motivated, resilient in the face of adversity, goal-oriented, and able to think clearly even under pressure or in situations of stress (Bandura, 1997). Self-efficacy is considered by various authors (in Prochazka et al., 2013, 2014) as a significant predictor of higher leader efficacy,

especially in the case of the world's most cited model of leadership in different areas of society functioning (educational environment not excluding) - transformational leadership.

**Transformational leadership** emphasises emotionality in leading people. In his classic work *Leadership* (Burns, 1978), Burns introduced the concept of transformational leadership as a process in which a leader communicates and interacts with their followers in order to increase their motivation as well as morale by taking a natural interest in their needs and striving to develop their overall personal potential. One well-known author whom Burns significantly influenced was Bass (1985). The current conception of transformational leadership emphasises enhancing employees' intrinsic motivation, exercised primarily in close supervisory relationships, and promoting leaders' effectiveness in innovation and the creation of new visions and ideas. A leader in a company characterised by a high frequency of change can influence employee attitudes by developing trust, openness and vigour through transformational leadership (Bass-Avolio, 1990). The transformative leadership approach is related to various indicators of leader effectiveness. It is positively related to objectively measured group performance, to the evaluation of leader effectiveness by the leader's supervisors, to the evaluation of leader effectiveness by the leader's followers, to the evaluation of leader effectiveness by an external evaluator, and the self-assessment of leader effectiveness (Prochazka et al., 2014). One of the most popular models within transformational leadership theory, which is also the most commonly used in application to educational leadership, is *Kouzes and Posner's (2016) Transformational Leadership Model*, which includes specific personality traits and practices that enable a leader to lead followers along with practical guidelines for behavior in challenging situations. The model consists of *The Five Practices of Exemplary Leadership*®, which cover almost all of the behavioural patterns of an exceptionally successful leader.

## 2. Methods

Based on the general theory of self-efficacy, leaders with higher levels of self-efficacy can be expected to be willing to exert greater goal-directed effort despite various difficulties persistently. According to Jayawardena and Gregar (2014), a measure of general self-efficacy predicts a specific level of self-efficacy. Thus, for leaders, there is a specific "leadership self-efficacy" as a leader's beliefs about their ability to succeed in leading other people.

According to Howard (2008), leaders with higher levels of leadership self-efficacy transfer their behavioural consciousness of efficacy to their followers, increasing the whole team's effectiveness. Concerning the study of Kane et al. (2002), leadership self-efficacy impacts group goal setting and leader strategy, positively influencing workgroup performance. However, on the other hand, according to Jayawardena and Gregar (2013), the specific leadership self-efficacy of managers is unrelated to their career success. This study aims to analyse the interrelationship between general and specific leadership self-efficacy in the context of the transformational leadership model.

The research sample comprised 183 teachers - potential educational leaders with a mean age of 43.5 years (SD = 1.35). They were secondary school teachers in the districts of Banska Bystrica, Trencin and Zilina. The selection of the research sample was guided by the criterion of availability and willingness to participate.

General self-efficacy was measured using the Kosc et al. (1993) - General Self-Efficacy Questionnaire. It is a research instrument with ten statements that measure the degree of perceived self-efficacy on a 4-point scale. The raw score takes values from 10 to 40, and the reliability of the questionnaire, as measured by Cronbach's alpha, is .89).

Specific leadership self-efficacy was measured by the Leadership self-efficacy scale (LSE - Bobbio & Manganelli, 2009), consisting of 21 items comprising six dimensions - Starting and leading change processes in groups, Choosing effective followers and delegating responsibilities, Building and managing interpersonal relationships within the group, Showing self-awareness and self-confidence, Motivating people, and Gaining consensus of group members. The reliability of the whole scale (21 items) was .91.

Potential transformative leaders were identified through the LPI – Leadership Practices Inventory (Kaliska & Heinzova, 2022), which focuses on the analysis of five main types of leadership behaviour: Model the Way, Inspire a Shared Vision, Challenge the Process, Enable Others to Act, and Encourage the Heart. The questionnaire consists of a 30-item self-assessment inventory in leadership skills, with six items for each area of leadership in which respondents rate their behaviour on a 10-point Likert scale. The sum of each leadership domain is an extra score, which can take values from 6 to 60. The reliability of the questionnaire, measured by Cronbach's alpha for each component, took on values ranging from .68-.83.

The research data were processed using SPSS Statistics version 22.0. The normality of the distribution of the variables was assessed by describing the shape of the distribution (skewness, kurtosis). The data did not show the characteristics of a normal distribution; therefore, we used non-parametric statistical methods - Spearman's correlation coefficient - in their processing.

### 3. Results

Table 1. Description variables (N=183).

|                         | Model the way | Inspire a shared vision | Challenge the process | Enable others to act | Encourage the heart | Specific leadership self-efficacy | General self-efficacy |
|-------------------------|---------------|-------------------------|-----------------------|----------------------|---------------------|-----------------------------------|-----------------------|
| Median                  | 7.23          | 6.28                    | 6.43                  | 7.76                 | 7.81                | 4.99                              | 3.89                  |
| Mean                    | 7.18          | 6.23                    | 6.32                  | 7.38                 | 7.62                | 4.71                              | 3.72                  |
| Std. Deviation          | 1.33          | 1.83                    | 1.63                  | 1.22                 | 1.59                | 1.63                              | 1.23                  |
| Shapiro-Wilk            | .73           | .86                     | .71                   | .84                  | .78                 | .82                               | .86                   |
| P-value of Shapiro-Wilk | < .001        | < .001                  | < .001                | < .001               | < .001              | < .001                            | < .001                |
| Minimum                 | 2.53          | 2.01                    | 1.18                  | 1.57                 | 1.57                | 1.63                              | 1.23                  |
| Maximum                 | 8.84          | 10.00                   | 9.63                  | 10.00                | 10.00               | 7.00                              | 3.98                  |

Table 1 presents descriptive indicators of the observed leadership behaviors. It shows that for the leadership behavior types, respondents tended to exhibit Encourage the heart (AM=7.62), Enable others to act (AM=7.38) and least tended to exhibit Inspire a shared vision (AM=6.23).

Table 2. Correlations between general self-efficacy, leadership self-efficacy and transformational leadership (N=183).

|            |                         | GSES   | LSE    |
|------------|-------------------------|--------|--------|
|            |                         | $\rho$ | $\rho$ |
| <b>LPI</b> | Model the way           | .178** | .387** |
|            | Inspire a shared vision | .224*  | .287*  |
|            | Challenge the process   | .058   | .247** |
|            | Enable others to act    | .294   | .025   |
|            | Encourage the heart     | .137   | .174   |

Note:  $\rho$  – Spearman correlation coefficient, \*relation significant at  $p \leq 0,05$ ; \*\* =  $p \leq 0,01$

Our findings suggest a weak and moderate relationship between general self-efficacy and Model the Way and Inspire a Shared Vision behaviours. For specific leadership self-efficacy, we found weak to moderate relationships with Model the Way, Inspire a Shared Vision, and Challenge the Process behaviours. The correlations between specific leadership self-efficacy and general self-efficacy can be expressed as a statistically significant, strong relationship ( $\rho = .788$ ;  $p = .003$ ).

### 4. Discussion

In the present study, we focused on revealing the potential relationships between general and specific - leadership self-efficacy in a specific environment, which was the educational reality of Slovak schools. We examined the personality as mentioned above characteristics in the context of transformational leadership, specifically Kouzes and Posner's (2016) model, which is the baseline model in more than 42% of existing research analyses using the LPI as an effective psychometrically valid and reliable instrument for mapping transformative types of behaviour in educational contexts (Sun et al., 2017). Leadership self-efficacy was analysed using the LSE scale (Bobbio & Manganelli, 2009); the authors noted sufficient psychometric properties and stability of the scale's factor structure. Our study is a probe into the issue under investigation in the Slovak school environment and a contribution to validating the LSE scale. We worked only with the total score, and therefore, we consider it necessary to analyse its individual dimensions and their relationships with general self-efficacy and individual types of transformative leader behavior in more detail.



According to Prochazka et al. (2013), in the case of leadership research, the measure of general self-efficacy predicts the measure of specific self-efficacy. According to research by other authors (Bass, 1997, Avolio & Bass, 2004), general self-efficacy is primarily related to self-confidence predicting charismatic behaviour and inspiring followers, suggesting that if general self-efficacy is an overall measure of confidence in one's abilities it should logically be associated with high self-confidence. The clear link between charismatic behaviour or inspiring followers and self-efficacy has been confirmed in our research for general and specific leadership self-efficacy. Similar conclusions were reached by Kane et al. (2002), according to whom leaders high in general self-efficacy aspire to higher and more attractive challenges on their own and with their followers, making them behave transformatively and be more successful with their followers in achieving a shared vision.

## 5. Conclusion

That transformational leadership is an approach appropriate for educational settings and that it influences many parameters important to the effectiveness of school functioning is evidenced by our findings of the relationships between both general and leadership self-efficacy and several types of transformational leader behaviours. In the realm of education, this model provides a conceptual framework for educational leadership, a measurement tool (LPI), and a framework for designing educational leadership training specifically aimed at supporting the practices/behaviours of the transformative leader.

In the school setting, developing individuals' leadership potential is key to enhancing their effectiveness, where self-efficacy emerges as one of the most important determinants. Since both general and leadership self-efficacy are formed based on success or failure in coping with various work tasks, it can be assumed that both constructs may change over time, which creates room for their positive influence through various developmental and training practices.

From a theoretical and conceptual perspective, it is important to acknowledge that existing knowledge relating to the relevance of some models of effective leadership to educational contexts, examined explicitly in terms of their contribution to the success of schools as organisations, can and should be used in the design of requirements for the qualities of school leaders, and as such should be reflected in the forms of training or support for existing and future school leaders.

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## **SOCIAL ANXIETY AND SPEECH ANXIETY. THE MEDIATING ROLE OF CONFIDENCE AS A SPEAKER**

**Dan Florin Stănescu, & Marius Constantin Romașcanu**

*Department of Communication, National University of Political Studies and Public Administration  
(Romania)*

### **Abstract**

Social anxiety is a condition experienced by a large number of people. An estimated 12.1% of U.S. adults experience social anxiety disorder at some time (National Comorbidity Survey, 2007). People with social anxiety often experience extreme self-consciousness and a strong fear of being judged, criticized, or embarrassed by others. This fear can be so overwhelming that it interferes with their ability to engage in everyday activities, such as attending social gatherings, speaking in public, or conversing with others. Furthermore, speech anxiety, also known as public speaking anxiety, is a psychological condition characterized by fear, nervousness, or apprehension when speaking in front of an audience or any situation that involves public speaking. This is often associated with physical symptoms such as trembling, sweating, and dry mouth, and cognitive symptoms like fear of embarrassment or prediction of poor performance and failure. The study is based on a cross-sectional design, with data being collected from a convenience sample of 206 participants (39 males, 167 females), aged between 18 and 35 years old ( $M=19.84$ ,  $SD=2.38$ ) through the following structured questionnaires: Social Anxiety Questionnaire for Adults (Caballo et al., 2012), Speech Anxiety Thoughts Inventory (Cho et al., 2004), and Personal Report of Confidence as a Speaker scale (Heeren et al., 2013) who measure the fear of public speaking. The results of the study suggest that both Social Anxiety ( $r=.606$ ,  $p<.01$ ) and Fear of public speaking ( $r=.766$ ,  $p<.01$ ) correlate with Speech Anxiety. Moreover, the two subscales of Speech Anxiety, namely Fear of Negative Evaluations and Prediction of Poor Performance also showed significant correlations with Social Anxiety ( $r=.576$ ,  $p<.01$ ;  $r=.579$ ,  $p<.01$ ) and fear of public speaking ( $r=.656$ ,  $p<.01$ ;  $r=.785$ ,  $p<.01$ ). Furthermore, fear of public speaking mediates the relationship between Social Anxiety and Speech Anxiety ( $z=7.960$ ,  $p<.01$ ). Practical implications of the recent study are discussed as well as some directions for future research in the area.

**Keywords:** *Speech anxiety, social anxiety, fear of public speaking, mediation.*

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### **1. Introduction**

Social anxiety is a prevalent contemporary issue, clinically recognized as Social Anxiety Disorder (SAD). The Diagnostic and Statistical Manual of Mental Disorders (DSM-5) (APA, 2013) characterizes it as the "marked fear or anxiety about one or more social situations in which the individual is exposed to possible scrutiny by others" (p. 202). The APA's definition encompasses three situational markers: social interactions (e.g., conversations, meeting new people), being observed (e.g., having dinner), and performing in front of others (e.g., dancing, giving a speech). In essence, the social situations in which individuals engage in different types of activities while aware of being watched and evaluated by others (Caballo et al., 2014).

According to Stein and Stein (2008), "Social anxiety disorder is the most common anxiety disorder: it has an early age of onset—by age 11 years in about 50% and by age 20 years in about 80% of individuals" (Stein & Stein, 2008, p. 1115). It is characterized by persistent fear and avoidance of social interactions, the scrutiny of others, and withdrawal from social situations to evade feelings of embarrassment and humiliation (Alyami et al., 2017).

Different scholars describe specific forms of social anxiety such as fear of speaking to an audience or talking to persons in authority (Stein, Walker, & Forde, 1994, 1996). Earlier examinations within this field have determined that performance anxiety, with public speaking anxiety as its predominant fear, constitutes a distinct subtype of social anxiety. This subtype is recognized to be qualitatively and quantitatively distinct from generalized social anxiety, as highlighted by Hook and

Valentiner (2002). Numerous discussions regarding the criteria for distinguishing between public speaking anxiety and social phobia have taken place, particularly following the publication of Heimberg and colleagues' (1993) review of social phobia subtypes. Starting from these observations and the fact that speaking in public is considered the most commonly reported fear in the general population (Dwyer & Davidson, 2012; Sawyer, 2016), we have decided to study the relation between those variables including a specific mediator namely fear of public speaking (or confidence as a speaker as it is to be found in the scale description).

According to various studies (Cho & Won, 1997; Stein et al., 1996), public speaking emerges as the most frequently feared situation, with prevalence estimates ranging from 20% (Cho & Won, 1997) to 34% (Stein et al., 1996). It refers to the anxiety an individual undergoes while delivering a speech or preparing to speak in the presence of an audience. As noted by Bodie (2010), anxiety also encompasses the preparation of the speech. In mainstream scientific literature, public speaking anxiety has been described as social anxiety with a “threat of unsatisfactory evaluations from audiences” (Schlenker & Leary, 1982, p. 646). This condition has been associated with various outcomes, including inadequate preparation, suboptimal decision-making during speeches, and a detrimental impact on both effect and performance (Dwyer & Davidson, 2021).

For those grappling with the anxiety associated with public speaking, addressing an audience can adversely affect both their physical and emotional health. Symptoms of public speaking anxiety may manifest through various channels, including physical sensations, irrational thoughts, changes in emotions, and avoidance behaviors (Daly et al., 1997). Examples of physical symptoms include nausea, tremors, and excessive sweating in the palms, as identified by Kushner (2004) and North and Rives (2001).

Past research within the public speaking domain has confirmed that the prospect of being on stage instills fear in numerous individuals due to the phenomenon commonly referred to as glossophobia, or the fear of public speaking (Dansieh, Owusu, & Seidu, 2021). In the realm of communication research, the fear of public speaking is characterized as a distinct form of communication-related anxiety. In this context, individuals encounter physiological arousal, negative thoughts, and behavioral reactions in response to actual or anticipated presentations (Ayres & Hopf, 1992).

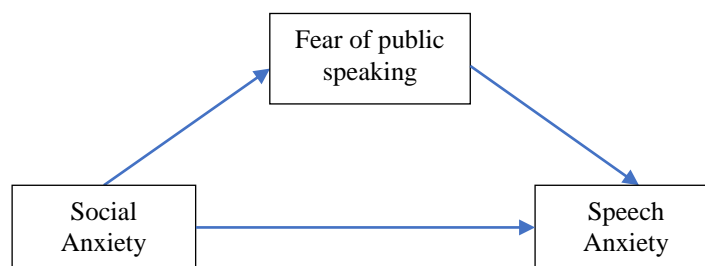
Fear of public speaking mainly involves a specific type of inner dialogue and thoughts that are self-deprecating, pessimistic, or undermining. Combining conscious thoughts and unconscious beliefs and biases provides a way for the brain to interpret and process daily experiences. In the area of interpersonal communication, focusing on negative thoughts may lead to decreased motivation as well as greater feelings of helplessness and anxiety.

Following the literature review findings, we propose the following hypothesis (Figure 1):

**H<sub>1</sub>**: Social Anxiety positively correlates with Speech Anxiety

**H<sub>2</sub>**: Fear of Public Speaking mediates the relationship between Social Anxiety and Speech Anxiety

Figure 1. Conceptual framework.



## 2. Methods

The study included 206 participants, comprising 39 males and 167 females, with ages ranging from 18 to 35 years ( $M = 19.84$ ,  $SD = 2.38$ ). Purposive convenience sampling was utilized for data collection, employing a self-reported method. Participants were briefly briefed on the study's purpose before providing informed consent. Assurance was given to all participants regarding the confidentiality of their data, emphasizing its use solely for research purposes. The participants were asked to complete the following structured questionnaires: Social Anxiety Questionnaire for Adults (Caballo et al., 2012),

Speech Anxiety Thoughts Inventory (Cho et al., 2004), and Personal Report of Confidence as a Speaker Scale (Heeren et al., 2013) who measure the fear of public speaking.

Social Anxiety Questionnaire for Adults (Caballo et al., 2012) is structured on 30 items designed to assess various aspects of social anxiety in adults. It comprises a series of social situations that may or may not cause unease, stress, or nervousness (e.g., *Talking to people I don't know at a party or a meeting*). Each item consisted of a 5-point Likert Scale where "1" represents no unease, stress, or nervousness and "5" represents very high or extreme unease, stress, or nervousness. The internal consistency coefficient was  $\alpha=.919$ .

Speech Anxiety Thoughts Inventory (Cho et al., 2004) is an instrument measuring maladaptive cognitions associated with speech anxiety. It consists of 23 items structured on 2 dimensions: prediction of poor performance (e.g., *I won't be able to speak as well as others*) and fear of negative evaluation by the audience (e.g., *I must deliver a good speech to gain approval from the audience*). The answers are distributed on a five-option Likert scale from 1 (Very strongly disagree) to 5 (Very strongly agree). The internal consistency coefficient of the composite score was  $\alpha=.964$ .

Personal Report of Confidence as a Speaker Scale (Heeren et al., 2013) is a scale designed to measure the fear of public speaking. It is structured on 12 items (e.g., *My thoughts become confused and jumbled when I speak before the audience*). The participants are invited to answer *True* or *False* to each of the respective statements. The internal consistency coefficient of the composite score was  $\alpha=.842$ .

### 3. Results

Following data collection, SPSS 26.0 software was used for data analysis. Examination of Skewness and Kurtosis coefficients revealed a normal distribution of the data. Consequently, to test the proposed hypothesis, the Pearson correlation was employed. Table 1 displays the means, standard deviations, and bivariate correlations for all study variables. The table illustrates several noteworthy positive correlations.

The results show that Social Anxiety positively correlates with Speech Anxiety ( $r=.606, p<.01$ ) thus confirming our first hypothesis. Moreover, the two subscales of Speech Anxiety, namely Fear of Negative Evaluations and Prediction of Poor Performance also showed significant correlations with Social Anxiety ( $r=.576, p<.01$ ;  $r=.579, p<.01$ ).

Table 1. Descriptive statistics and inter-correlations of the study variable.

|                                   | Mean  | SD    | 1      | 2      | 3      | 4      | 5 |
|-----------------------------------|-------|-------|--------|--------|--------|--------|---|
| 1. Social anxiety                 | 90.46 | 19.83 | -      |        |        |        |   |
| 2. Prediction of poor performance | 40.14 | 13.40 | .579** | -      |        |        |   |
| 3. Fear of negative evaluation    | 32.52 | 9.92  | .576** | .812** | -      |        |   |
| 4. Speech anxiety                 | 72.66 | 22.23 | .606** | .966** | .936** | -      |   |
| 5. Fear of public speaking        | 6.52  | 3.43  | .611** | .785** | .656** | .766** | - |

n=206, \*\*p<0.01

To address the second hypothesis (Hy 2: Public Speaking mediates the relationship between Social Anxiety and Speech Anxiety), and to examine the mediation model following the guidelines of Preacher and Hayes (2004), we utilized the PROCESS macro (version 3.5). The model incorporates Social Anxiety as a predictor, Fear of Public Speaking as a mediator, and Speech Anxiety as the outcome variable (Figure 1).

Table 2. Regression results for the first process of mediation.

| Model            | Coeff. | SE   | t      | p    | CI(lower) | CI(upper) |
|------------------|--------|------|--------|------|-----------|-----------|
| Without mediator |        |      |        |      |           |           |
| SoA -> SpA (c)   | .679   | .062 | 10.884 | .000 | .556      | .802      |
| With mediator    |        |      |        |      |           |           |
| SoA -> FPS (a)   | .106   | .010 | 11.013 | .000 | .087      | .125      |
| FPS -> SpA (b)   | 4.089  | .354 | 11.537 | .000 | 3.390     | 4.788     |
| SoA -> SpA (c')  | .247   | .061 | 4.018  | .000 | .126      | .368      |

\*SoA=Social Anxiety; SpA=Speech Anxiety; FPS=Fear of Public Speaking

In Step 1 of the mediation model, the regression of the Social Anxiety on Speech Anxiety, ignoring the mediator, is significant,  $F(1,204) = 118.45, p < .001, R^2 = .36, b = .679, t(204) = 10.884, p < .001$ . Step 2 shows that the regression of the Social Anxiety on the mediator, Fear of Public Speaking,

is also significant,  $F(1,204) = 121.29$ ,  $p < .001$ ,  $R^2 = .37$ ,  $b = .106$ ,  $t(204) = 11.013$ ,  $p < .001$ . Step 3 of the mediation process shows that the mediator, Fear of Public Speaking, controlling for Social Anxiety is significant,  $F(2,203) = 164.12$ ,  $R^2 = .61$ ,  $p < .001$ ,  $b = 4.089$ ,  $t(203) = 11.537$ ,  $p < .001$ . Step 4 of the analysis reveals that controlling for the mediator, Fear of Public Speaking, Social Anxiety score is a less significant predictor of Speech Anxiety,  $b = .247$ ,  $t(203) = 4.018$ ,  $p < .001$  than in the previous case.

Following Baron and Kenny's (1986) recommendation, we performed the Aroian version of the Sobel test, revealing that fear of public speaking mediates the connection between social anxiety and speech anxiety ( $z=7.960$ ,  $p<.01$ ).

#### 4. Conclusions

The objective of the present study is to investigate the impact of Social Anxiety on Speech Anxiety, with a focus on the mediating influence of Fear of Public Speaking. Findings indicate that Fear of Public Speaking significantly mediates the association between Social Anxiety and Speech Anxiety.

The results are in line with previous studies that noted that the fear of public speaking is commonly associated with social anxiety (Tillfors & Furmark, 2007). Interestingly, this fear may manifest even in the absence of several or most other features of social anxiety as observed by Blöte and colleagues (2009).

Furthermore, the results mirror the findings of Scott (2023) who noted that negative self-talk plays a significant role in public speaking anxiety. Negative self-talk can contribute to heightened anxiety and make the experience more challenging.

While this study yielded valuable insights, it is not without its limitations. A primary weakness lies in the adoption of a cross-sectional design, preventing the examination of cause-and-effect relationships. Additionally, a common constraint, inherent in many studies, pertains to the reliance on self-reported questionnaires, where individuals may tend to explore and disclose attitudes rather than actual behaviors. The small sample size is another noteworthy limitation, posing challenges in generalizing the findings.

Future studies should take into account the observation of Horwitz (2001), who pointed out the fact that state anxiety differs from trait anxiety in that the former represents a temporary episode of anxiety, while the latter stems from inherent individual factors, like personality, that can lead to anxiety in diverse situations. This distinction is even more important when trying to understand the predictors of public speaking anxiety or speech anxiety.

Similarly, communication apprehension, defined as the degree of fear or anxiety linked to actual or expected communication with another individual (McCroskey, 1984) is also perceived in two measures. The first measure is trait-based, representing a consistent level of fear or anxiety, while the second is variable and depends on the situation or context (Aly & Islam, 2005; Harris, Sawyer, & Behnke, 2006). Hence, adding Communication Apprehension as a new variable to the conceptual model will enhance comprehension of the phenomena.

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# SLOVAK ADOLESCENTS' SELF-CONCEPT IN RELATION TO PERCEIVED PARENTAL ACCEPTANCE

**Lenka Ďuricová, & Beata Žitniaková Gurgová**  
*Faculty of Education, Matej Bel University (Slovakia)*

## Abstract

Parental responsiveness is considered one of the significant sources of child and adolescent self-esteem. The present study aims to extend empirical knowledge in this area by focusing on the multidimensional self-concept of the Slovak adolescent population. The study aims to clarify the interrelationships between adolescents' self-concept in the Piers-Harris sense and perceived parental acceptance/rejection. The research sample comprises 1,013 Slovak adolescents (73% female,  $M_{age} = 17.00$ ,  $SD_{age} = 1.27$ ). The research instruments used were the ASCSS/Adolescents' Self-concept Short Scale (Veiga & Leite, 2016) and PARQ-S/Parental Acceptance-Rejection Questionnaire Short Version (Rohner, 2005). The results of correlational analyses indicate moderate correlations between adolescents' overall Piers-Harris self-concept and perceived parental responsiveness for both mother and father. Subsequent linear regression confirmed both maternal and paternal overall rejection as a significant negative predictor of adolescent self-concept. Approximately 22% of the variability in adolescent self-concept in the Piers-Harris sense can be explained through these variables. Exploring adolescent self-concept in the context of perceived parental acceptance suggests its importance in forming self-concept even in mid-to-late adolescence. The results are interpreted and discussed in terms of both age and gender. Despite its limitations (self-report measures, sample characteristics, data collection), the study provides results that complement previous research and may be of interest to parents, caregivers, and educators, i.e., all who care about youth's mental health.

**Keywords:** *Self-concept, adolescence, perceived parental acceptance/rejection.*

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## 1. Introduction

Parents play an important role in an adolescent's psychological adjustment. According to Cobham et al. (2016), parents' psychological and behavioural reactions, including parents' general emotional states, parental appraisal, coping, and support, have an impact on adolescents' mental health. Based on longitudinal research, Boudreault-Bouchard et al. (2013) also found the impact of parental emotional support on adolescents' well-being. Also, according to Cimino and Cerniglia (2021), poorer parent-child relationship quality is associated with increased levels of psychopathological symptoms in adolescents. Parental support has also emerged as a significant variable in longitudinal research focusing on adolescents' psychological adjustment during the COVID-19 pandemic (Li et al., 2023). Already, a study by Campo and Rohner (1992) showed significantly higher rates of perceived maternal and paternal rejection in childhood in young adult abusers (alcohol) compared to nonabusers. Higher perceived parental neglect is also associated with alcohol problems during emerging adulthood, according to a more recent study (Backer-Fulghum et al., 2012). The link between perceived parental neglect and the more recent problem of IGD (Internet Gaming Disorder) is, in turn, reported in a study by Zhu and Chen (2021). Also, current research by Shi et al. (2022) shows negative relationships between parent-adolescent relationships and emotional and behavioural problems in Chinese adolescents.

Low self-esteem predicts negative outcomes and mediates the relationship between childhood adversity and mental health problems during adolescence (Seim et al., 2021). The protective function of positive self-esteem against internalized symptoms (anxiety, depression) in adolescence is also supported by Schoeps et al. (2021). Self-esteem refers to the self-evaluation of one's worth and abilities and develops as a function of one's personal history, experiences, and cognitive abilities (Harter, 2012). Self-esteem is typically understood as a multidimensional construct with several domain-specific components, such as academic, physical, and social domains of self-esteem and global self-esteem (Harter, 2012; Rosenberg et al., 1995). For example, as a person may have high academic and low physical self-esteem, their global self-esteem then depends on how important academic and physical achievement is to them (intrapersonal



perspective) and how important these domains are to their perception of their social status (interpersonal perspective). In this sense, it is impossible to adequately understand a person's self-esteem without considering global and domain-specific components (Harter, 2012; Marsh et al., 2004; Rosenberg et al., 1995; Von Soest et al., 2016). The requirement of domain specificity is also met by E. Piers' construct, which defines self-concept as a relatively stable set of attitudes toward the self that includes descriptions and evaluations of one's behavior and qualities (Piers & Herzberg, 2002). The above is one of the most widely used self-concept assessment questionnaires in educational, clinical, and social psychology. For the purposes of the present study, we chose an abbreviated version of it (Veiga & Leite, 2016), in which the authors changed the response scale (from dichotomous responses to a 6-item Likert-type scale), which shows good psychometric qualities.

Although adolescents typically seek autonomy to disengage from parents, parents remain an important source of feedback. Both negative and positive feedback from parents can fundamentally shape adolescents' self-evaluations (Brummelman & Thomaes, 2017; Jacquez et al., 2004), and later in adulthood (Koepke & Denissen, 2012). Children with emotionally unavailable, rejecting, and unsupportive caregivers are prone to develop self-perceptions of themselves as incompetent, unlovable, and unworthy, which manifests as low global self-esteem (Harter, 2012). The direct influence of parental attachment on self-esteem in late adolescence was brought to light by a study by Laible et al. (2004). The reinforcing effect of parental emotional support on adolescent self-esteem was also confirmed in a longitudinal study by Boudreault-Bouchard et al. (2013).

The present study aims to confirm the hypothesized relationships between perceived parental acceptance/rejection and the self-concept of Slovak adolescents in the Piers-Harris sense. Furthermore, we are interested in the extent to which parental emotional support still explains self-concept in middle to late adolescence.

## 2. Methods

The research file comprised 1,013 Slovak adolescents aged 15 to 20, 73% female. The research involved a combination of cluster sampling (multiple random collection sites) and voluntary sampling (people using these specific sites responded to the online survey). The online questionnaire was distributed via official representatives of different secondary schools across Slovakia. The online form included:

*Adolescents' Self-concept Short Scale/ASCSS* (Veiga & Leite, 2016). A shortened 30-item version of the original PHSCS - 2 / Piers-Harris Children's Self-Concept Scale 2 (Piers & Herzberg, 2002) was used. The original factor structure was retained. Each of the six dimensions (Anxiety, Physical Appearance, Behaviour, Popularity, Happiness, Intellectual status) is saturated by five items, and the respondent provides their opinion on the statements using a 6-point Likert scale (1=strongly disagree; 6=strongly agree). In addition to the raw scores in the individual dimensions, this questionnaire allows for the identification of the total self-concept score of the given adolescent. According to Veiga and Leite (2016), the internal consistency of the individual dimensions (Cronbach's alpha) of this questionnaire tested on a sample of 440 Portuguese adolescents varied from .70 to .79. The internal consistency of the individual dimensions in the adapted version of this instrument used in our research was satisfactory ( $\alpha = .70 - .84$ ); the reliability of the research instrument as a whole was also satisfactory ( $\alpha = .89$ ).

*Parental Acceptance – Rejection Questionnaire Short Version/PARQ-S*. A shortened version of the original 60-item PARQ. It is a self-reporting questionnaire designed for children and adolescents focusing on their current perception of parental acceptance/rejection (Rohner, 2005). Each parent is scored separately. This instrument consists of 24 items and four subscales: warmth (8 items), hostility (6 items), indifference (6 items), and undifferentiated rejection (4 items). For each item, the respondent comments on a 4-point scale (1 = almost never; 4 = almost always). The subscale items are added up to calculate the rough score. The internal reliability in all scales was satisfactory to excellent (Cronbach's alpha = .79 to .94). After recoding the warmth subscale, the instrument also permits calculating the total parental rejection score ( $\alpha_{\text{mother}} = .95$ ;  $\alpha_{\text{father}} = .94$ ).

## 3. Results

Tables 1 and 2 present the descriptive characteristics of the variables of interest according to the research instruments used. Considering the results of the Shapiro-Wilk normality test, the relationships between the variables were examined through the non-parametric Spearman's coefficient (Table 3). Linear regression confirmed parental rejection (both maternal and paternal) as significant negative predictors of adolescent self-concept (Table 4).

Table 1. Descriptive characteristics of adolescents' overall self-concept according to the ASCSS (N = 1013).

|                            | <b>Mdn</b> | <b>AM</b> | <b>SD</b> | <b>S-W</b> | <b>p (S-W)</b> | <b>Min.</b> | <b>Max.</b> |
|----------------------------|------------|-----------|-----------|------------|----------------|-------------|-------------|
| <b>TOT<sub>ASCSS</sub></b> | 3.933      | 3.935     | 0.760     | 0.997      | 0.033          | 1.100       | 5.900       |

Note: ASCSS = Adolescents' Self-concept Short Scale, TOT<sub>ASCSS</sub> = total self-concept score, Mdn = median, AM = mean, SD = standard deviation, S-W = Shapiro-Wilk test, p(S-W) = p-value of Shapiro-Wilk, Min. = minimum, Max. = maximum

Table 2. Descriptive characteristics of the variables PARQ-S (N = 1013).

|                         | <b>M-tot</b> | <b>M-W</b> | <b>M-H</b> | <b>M-I</b> | <b>M-R</b> | <b>F-tot</b> | <b>F-W</b> | <b>F-H</b> | <b>F-I</b> | <b>F-R</b> |
|-------------------------|--------------|------------|------------|------------|------------|--------------|------------|------------|------------|------------|
| Median                  | 3.542        | 3.250      | 3.833      | 3.500      | 3.750      | 3.292        | 2.875      | 3.833      | 3.333      | 4.000      |
| Mean                    | 3.319        | 3.112      | 3.498      | 3.305      | 3.485      | 3.155        | 2.739      | 3.516      | 3.117      | 3.503      |
| Std. Deviation          | 0.627        | 0.810      | 0.640      | 0.652      | 0.676      | 0.662        | 0.936      | 0.677      | 0.717      | 0.709      |
| Shapiro-Wilk            | 0.885        | 0.900      | 0.785      | 0.892      | 0.773      | 0.934        | 0.935      | 0.746      | 0.924      | 0.740      |
| P-value of Shapiro-Wilk | < .001       | < .001     | < .001     | < .001     | < .001     | < .001       | < .001     | < .001     | < .001     | < .001     |
| Minimum                 | 1.083        | 1.000      | 1.000      | 1.000      | 1.000      | 1.000        | 1.000      | 1.000      | 1.000      | 1.000      |
| Maximum                 | 4.000        | 4.000      | 4.000      | 4.000      | 4.000      | 4.000        | 4.000      | 4.000      | 4.000      | 4.000      |

Note: PARQ-S = Parental Acceptance – Rejection Questionnaire Short Version, M-tot = total mother rejection, M-W = mother-warmth, M-H = mother-hostility, M-I = mother-indifference, M-R = mother-undifferentiated rejection, F-tot = total father rejection, F-W = father-warmth, F-H = father-hostility, F-I = father-indifference, F-R = father- undifferentiated rejection

Table 3. Relationship (Spearman's correlation) between adolescent self-concept and parental acceptance/rejection factors (N=1013).

|                            | <b>M-tot</b> | <b>M-W</b> | <b>M-H</b> | <b>M-I</b> | <b>M-R</b> | <b>F-tot</b> | <b>F-W</b> | <b>F-H</b> | <b>F-I</b> | <b>F-R</b> |
|----------------------------|--------------|------------|------------|------------|------------|--------------|------------|------------|------------|------------|
| <b>TOT<sub>ASCSS</sub></b> | -.424***     | .392***    | -.358***   | -.378***   | -.354***   | -.392***     | .349***    | -.314***   | -.341***   | -.314***   |

Note: TOT<sub>ASCSS</sub> = total self-concept score, M-tot = total mother rejection, M-W = mother-warmth, M-H = mother-hostility, M-I = mother-indifference, M-R = mother-undifferentiated rejection, F-tot = total father rejection, F-W = father-warmth, F-H = father-hostility, F-I = father-indifference, F-R = father-undifferentiated rejection, \*\*\* p < .001

Table 4. Regression model and estimation of regression coefficients for total self-concept in terms of Piers-Harris as explanatory variable (N = 1013).

| <b>Model</b>         | <b>R</b> | <b>R<sup>2</sup></b> | <b>adj. R<sup>2</sup></b> | <b>F</b> | <b>p</b> |
|----------------------|----------|----------------------|---------------------------|----------|----------|
| <b>H<sub>1</sub></b> | .463     | .215                 | .213                      | 137.990  | <.001    |

| <b>H<sub>1</sub></b> | <b>B</b> | <b>Beta</b> | <b>t</b> | <b>p</b> |
|----------------------|----------|-------------|----------|----------|
| <b>(intercept)</b>   | 1.925    | -           | 15.657   | <.001    |
| <b>M-tot</b>         | -.356    | -.294       | -8.663   | <.001    |
| <b>F-tot</b>         | -.262    | -.228       | -6.736   | <.001    |

Note: M-tot = total mother rejection, F-tot = total father rejection, R = multiple correlation coefficient, R<sup>2</sup> = determination index, adj. R<sup>2</sup> = adjusted determination index, F = F-test result, p = F-test significance, B = unstandardised coefficient, Beta = standardised coefficient, t = T-test result, p = T-test significance

#### 4. Discussion and conclusion

The study aimed to add to the current state of knowledge and to verify the assumed negative relationships between perceived parental rejection and the self-concept of Slovak adolescents in the Piers-Harris sense. The results of both correlation and regression analyses yielded a negative association between these variables. Statistically significant moderate negative correlation coefficients are interpreted to mean that maternal/paternal rejection, hostility and indifference distort the adolescent's overall self-concept. Conversely, maternal/paternal warmth acts as a protective factor in its formation and strengthens it. These results are consistent with previous research (Boudreault-Bouchard et al., 2013; Brummelman & Thomaes, 2017; Harter, 2012; Jacquez et al., 2004; Koepke & Denissen, 2012; Laible et al., 2004), although different research instruments were used. Our resulting statistically significant regression model explains approximately 22% of the variability in adolescents' overall self-concept through maternal and paternal rejection. In the case of our study, these are mid-to-late adolescents, where the range of sources of self-concept is already expanding, but parents nonetheless remain one of the significant ones.

There were no gender differences in the factors or the overall perceived parental rejection in our sample. However, there were differences in some dimensions of self and the overall self-concept (in favor of males). Clearly, other variables besides gender enter into the formation of self-concept. Future research could focus in this sense, for example, on peer acceptance, adolescent socio-demographic characteristics, school performance, extracurricular activities, personality traits, and the like. A suggestion for further research could also be to explain the self-concept of early adolescents through parental rejection and to compare the results.

Despite some limitations (self-report measures and online data collection), our research complements the previous one. It confirms the importance of parental emotional support for forming the adolescent's self-concept. The adolescent's psychological adjustment and subjective well-being go hand in hand with a favorable self-concept. Thus, our results may interest all who care about and are co-responsible for adolescent mental health, such as parents, educators, teachers, and others.

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# EVALUATING THE EFFECTIVENESS OF EXPOSURE TO COUNTERSTEREOTYPIC FATHERS ON REDUCING IMPLICIT FATHER AND MOTHER STEREOTYPES IN JAPAN: II

**Mizuka Ohtaka**

*Toyo University/Department of Social Psychology, Faculty of Sociology (Japan)*

## **Abstract**

An earlier study that exposed famous fathers as counterstereotypic exemplars suggested that, for men, exposure to counterstereotypic fathers can reduce the implicit father and mother stereotypes. However, for women, famous fathers might be considered a subtype of fathers distinct from ordinary fathers. Therefore, this study examined whether exposure to ordinary fathers who took childcare leave for at least 3 months can reduce the implicit stereotype that ‘fathers should work outside the home and mothers should keep the house’. The Implicit Association Test (IAT) was conducted among Japanese adults. The participants were randomly assigned to the counterstereotypic group or control group by gender and age group. 210 respondents (105 men and 105 women in their 20s, 30s, 40s, 50s, and 60s) were included in the analysis. The results indicated that, in their 50s, the intervention reduced the implicit association between father and work and between mother and home. In addition, the implicit association between work and father and between home and mother was stronger for those in their 50s than for those in their 20s. Thus, for 50s, with strong implicit father and mother stereotype, exposure to counterstereotypic fathers can reduce the implicit father and mother stereotypes. In other age groups, however, the intervention did not reduce the implicit father and mother stereotypes. Therefore, future studies will need to examine interventions with stronger effects.

*Keywords: Stereotype, father, mother.*

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## **1. Introduction**

Ohtaka (2020) demonstrated that famous fathers who enjoy childrearing to Japanese undergraduates, and suggested that for men, exposure to counterstereotypic fathers can reduce the implicit father and mother stereotypes that ‘fathers should work outside the home and mothers should keep the house’. However, even when women were exposed to counterstereotypic fathers, their implicit stereotypes were not reduced because they might have considered counterstereotypic fathers, a subtype of fathers. Famous fathers who enjoy childrearing as counterstereotypic fathers were selected following previous studies (Dasgupta & Asgari, 2004, Study 1; Dasgupta & Greenwald, 2001, Study 1, Study 2; Dasgupta & Rivera, 2008; Hanita, 2015, Study 1-2). Famous fathers, however, might be considered a subtype of fathers distinct from ordinary fathers (Hewstone & Hamberger, 2000; Kunda & Oleson, 1995). Furthermore, because gender stereotypes vary according to socioeconomic factors (Suzuki, 2017), this study targeted not only undergraduates but also adults in a larger sample to generalise the findings. Thus, this study revealed ordinary fathers who enjoy childrearing as counterstereotypic fathers to Japanese adults and investigated whether this exposure of fathers can reduce the implicit stereotype that ‘fathers should work outside the home and mothers should keep the house’.

## **2. Methods**

This study conducted the power analysis (effect size  $f: .25$ , alpha error probability:  $.05$ , power:  $.80$ ) using G\*Power, aimed for a sample size of 179. However, this study tried to recruit up to 250 participants, supposing nonparticipation. A total of 212 Japanese adults participated in this study. Their ages ranged from 20 to 69 years old, were of both genders, were born and raised in Japan, spoke Japanese as their native language and lived in Japan, excluding same-sex married couples and students. They answered the satisfying item correctly (Miura & Kobayashi, 2015).

The first study was conducted as a study on memory based on Dasgupta and Asgari (2004). The participants were randomly assigned to the counterstereotypic father group or the control group by gender and age group. The participants were shown descriptions of either counterstereotypic fathers or flowers (control group). After reading the descriptions, the participants saw an abbreviated correct and incorrect description of each individual (or flower). They were asked to identify the correct description. This memory test was administered to ensure that the participants had paid attention to the information and to strengthen the memory cover story. After identifying the correct description, the participants in the counterstereotypic fathers condition were asked to rate the extent to which they thought most other fathers could enjoy childrearing as these fathers did on a five-point scale ranging from 1 (impossible) to 5 (possible). The participants in the flowers control condition were asked to indicate the flowers that they liked the most from the rest.

In addition, four fathers who took childcare leave for at least three months were selected from 'Star Ikumens (fathers who enjoy childrearing).' The descriptions of each individual were taken from the internet site of the 'Ikumen project' (Ministry of Health, Labour and Welfare, 2020). Meanwhile, four flowers were collected for the control condition. The description of each flower was derived from the internet site 'Gardening for Pleasure' (NHK Publishing, 2020).

In the second study, the Implicit Association Test (IAT, Greenwald et al., 1998) was conducted as a study on judgement based on Dasgupta and Asgari (2004). The IAT procedure followed the recommendations by Nosek et al., (2005). On the computer, the participants were instructed to categorise words and images as quickly and accurately as possible. In the case of a reaction error, error feedback (X) was provided and they were instructed to push the right key again. The IAT is composed of seven blocks, with three practice blocks and four critical blocks. In the 1st practice block (20 trials), participants categorised words related to father and mother into categories labelled on the left or right. In the 2nd practice block (20 trials), participants categorised words related to work and home. In the 3rd (20 trials) and 4th (40 trials) critical blocks, participants categorised words related to father/mother work/home in alternating trials. Consequently, participants categorised words corresponding to father and work with one key and those corresponding to mother and home with another key. In the 5th practice block (20 trials), participants categorised the words corresponding to mother and father again, except the categories had switched sides. The father/mother category originally on the left was now categorised with the right key and the father/mother category originally on the right was now categorised with the left key. In the 6th (20 trials) and 7th (40 trials) critical blocks, participants categorised pairings opposite to the ones found in the third and fourth blocks. Consequently, participants categorised words related to mother and work with one key and those related to father and home with the other key. The sixth and seventh blocks were counterbalanced with the third and fourth blocks between participants to control potential order effects. The position of the work/home categories was also randomised between participants: Half the participants categorised work to the left key and home to the right key, and the other half did the reverse.

The 'father' (N = 5) and 'mother' (N = 5) words were selected from fathers' and mothers' names called by their children (e.g. 'father', 'dad' and 'papa'/'mother', 'mom' and 'mama') (Benesse, 2009). The 'home' (N = 5) words were 'cleaning', 'washing', 'housework', 'childrearing' and 'cooking'; the 'work' (N = 5) words were 'meeting', 'workplace', 'commuting', 'working' and 'company' (Hanita & Murata, 2013).

The IAT score was scored with the D algorithm as recommended by Greenwald, et al. (2003). A positive D score indicated faster average response when 'father' words were paired with 'work' words and 'mother' words were paired with 'home' words, compared to the reverse situation.

Finally, the participants completed self-reported questionnaires on demographic measures on the computer.

### 3. Results

#### 3.1. Analysis targets

Of the 212 valid responses, 1 respondent answered the open-ended question about the impact of the memory survey on their ability to process information: 'I remembered examples of men who were positive about parental leave, so they remained in my mind as afterimages and I was a little more positive about them'. Another respondent whose latency was less than 300 ms in more than 10% of the trials (Greenwald et al., 2003) was thereby excluded, and 210 respondents (105 males and 105 females) were included in the analysis.

They were randomly assigned to the counterstereotypic fathers condition or the flowers control condition by gender and age group as follows.

- The 20s age group: 19 (9 men, 10 women) in the counterstereotypic fathers condition, and 23 (13 men, 10 women) in the flowers control condition

- The 30s age group: 22 (11 men, 11 women) in the counterstereotypic fathers condition, and 19 (9 men, 10 women) in the flowers control condition
- The 40s age group: 22 (10 men, 12 women) in the counterstereotypic fathers condition, and 20 (11 men, 9 women) in the flowers control condition
- The 50s age group: 26 (16 men, 10 women) in the counterstereotypic fathers condition, and 18 (6 men, 12 women) in the flowers control condition
- The 60s age group: 20 (10 men, 10 women) in the counterstereotypic fathers condition, and 21 (10 men, 11 women) in the flowers control condition

### 3.2. Analysis of variance

The data were analysed using a three-way analysis of variance. The analysis design used three independent variables: the counterstereotypic fathers condition or the flowers control condition (between factor) [condition], being man or woman (between factor) [respondents' gender], age group i.e. 20s, 30s, 40s, 50s or 60s (between factor) [respondents' age group]. The dependent variable was the D score (Greenwald et al., 2003).

First, the two-way interaction effect of [group] × [respondents' age group] was marginally significant ( $F(4, 190) = 2.27, p = .064, \text{partial } \eta^2 = .05, 95\% \text{ CI } [.00, .09]$ ). The simple main effect of [condition] was significant among the 50s group ( $F(1, 190) = 8.20, p = .005, \text{partial } \eta^2 = .17, 95\% \text{ CI } [.00, .10]$ ). The D score in the counterstereotypic fathers condition ( $M = 0.66$ ) was lower than the D score in the flowers control condition ( $M = 0.91$ ). That is, in the 50s group, the intervention reduced the implicit association between 'father' and 'work' and between 'mother' and 'home'.

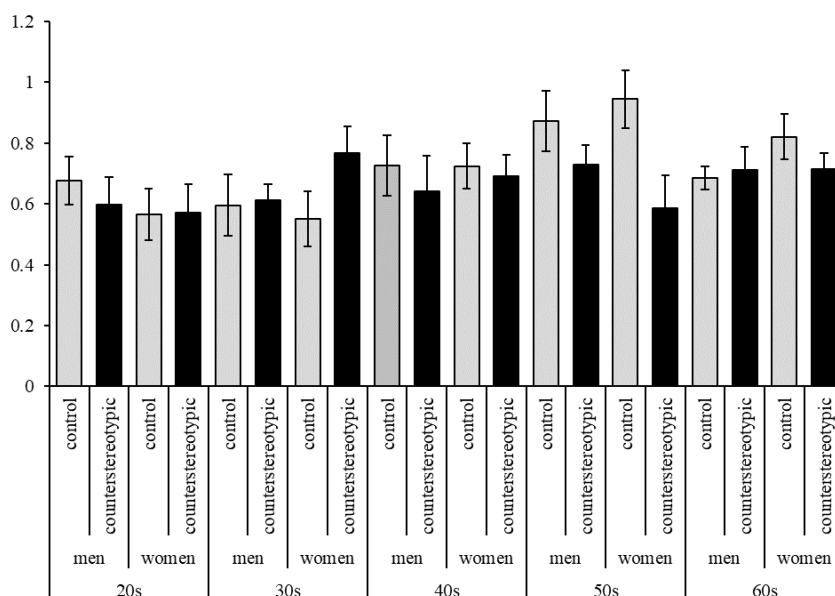
Second, the main effect of [respondents' age group] was significant ( $F(4, 190) = 2.93, p = .022, \text{partial } \eta^2 = .06, 95\% \text{ CI } [.00, .11]$ ). The D score in the 50s group ( $M = 0.78$ ) was higher than the D score in the 20s group ( $M = 0.60$ ). That is, the implicit association between 'father' and 'work' and between 'mother' and 'home' was stronger for those in their 50s than for those in their 20s.

The average D scores are shown in Figure 1.

### 4. Discussion

The result implied that the participants from the 50s age group have a strong implicit 'father' and 'mother' stereotype. This might be because younger people have more equal gender role attitudes (Ohtaka, 2022). However, it was discovered that the 60s age group might have their children, regardless of their gender, work outside the home and keep the house. Furthermore, such a strong implicit stereotype in the 50s group can be reduced by exposure to counterstereotypic fathers. However, the intervention did not reduce the implicit father and mother stereotypes among the other generations. This might be because the intervention effect was weak. Kurdi et al. (2023) argued that exposure to counterattitudinal exemplars can reduce implicit racial stereotypes, but such malleability depends strongly on contingency awareness. Thus, future studies should focus on contingency awareness to explore stronger interventions.

Figure 1. Average D scores.



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# IMPACTS OF EMPLOYMENT DURATION AND WORK PERFORMANCE ON JOB MISMATCHED GRADUATES' USE OF DEFENCE MECHANISMS

**Getrude Cosmas**

*Faculty of Psychology and Education, University Malaysia Sabah (Malaysia)*

## Abstract

One of the employability challenges that most graduates face at present is securing jobs that are in line with their educational levels and fields (i.e., job mismatch). To overcome this challenge, graduates may use various types of defense mechanism (i.e., mature, immature & neurotic). Graduates who use mature defense mechanism tends to use or transform their negative feelings and thoughts into something that are less harmful and risky compared to those who use immature and neurotic defence mechanism. However, the use of defense mechanisms may be affected by employment duration and work performance. The present study was conducted to determine the impacts of employment duration and work performance on the use of each type of defence mechanisms. Of the 231 employed graduates who participated in the present study, 117 were job mismatched. Longer employment duration decreased their use of mature defence mechanisms. As for work performance, more graduates who perceived themselves as having higher work performance used neurotic defence mechanisms (undoing, pseudo-altruism, idealisation, and reaction formation), but the factor did not have any impact on their use of mature defence mechanisms (suppression, sublimation, humour, and anticipation) and immature defence mechanisms (projection, passive aggression, acting out, devaluation, autistic fantasy, and denial). The study findings can help make job-mismatched graduates aware of the impacts of their employment duration and work performance on their use of psychological coping strategies and can help employers understand the defence mechanisms used by their job-mismatched employees and the job factors that may drive them to adopt these strategies. The understanding from both parties may lead to a better productivity in the industry.

**Keywords:** *Job mismatches, self-defence mechanisms, graduates, work performance.*

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## 1. Introduction

Today's highly competitive job market has put a strain on some graduates' employability and has led them to accept jobs that are not in line with the educational levels they have reached and their academic fields. These graduates need more time to adapt and adjust their skills to their new jobs, which is compounded by the challenge of transitioning from university life to work life. In a study by Molinsky and Pisman (2019), 54 graduates who experienced transitioning from college to the professional world stated in interviews that they felt disoriented, confused, dissatisfied and, in many cases, overwhelmed with the real world. The workplace can push individuals to their emotional thresholds as they receive critical feedback, interact with abrasive colleagues, and are sometimes micromanaged by their supervisors. In addition, the workplace consists of people with different personalities who have different ways of dealing with situations (Omol, 2019). Defence mechanisms are used particularly during crises or in unwanted and undesirable situations (Fatima & Mahour, 2021), such as in dealing with work stressors and unexpected demands from one's employers. A basic concept in psychoanalytical theory, they are defined as strategies employed to protect one's ego (Fatima & Mahour, 2021).

Graduates tend to use various types of defence mechanisms (i.e. mature defence mechanisms, defined as adaptive, normal and effective confrontation strategies, and neurotic and immature defence mechanisms, defined as nonadaptive and ineffective confrontation strategies (Sepidehdam et al., 2012) to adapt to their work demands and challenges and to cope with the psychological tensions caused by these, but their use of defence mechanisms may be influenced by their employment duration and work performance. For instance, Sepidehdam et al. (2012) found that people who utilise grown defence mechanisms experience less affective burnout and greater success. In a study by Cosmas et al. (2023a) involving 116 employed graduates, mature self-defence mechanisms were found to have a positive effect on their work performance, while immature defence mechanisms did not show any significant effect on the same. It was also found that

there was no difference between the job-matched and job-mismatched graduates in terms of their use of mature and immature defence mechanisms; both groups used these two types of defence mechanisms in dealing with their job tasks. Gronningsaeter et al. (1991) found that highly active workers (i.e., those who exercised for at least 45 minutes on three or more days in a week) were likelier to use the mature defence mechanism of compensation (i.e., making up for a task that one is not good at by performing other job tasks that one excels in) than less active workers and inactive groups (i.e. those who had no exercise at all), and that less inactive workers were likelier to use the immature defence mechanism of projection.

The present study was conducted to determine the effects of employment duration and work performance on job-mismatched graduates' use of mature, immature, and neurotic defence mechanisms.

## 2. Objectives

Based on the preceding discussion on the challenges faced by job-mismatched graduates, the present study sought to determine the effects of their employment duration and work performance on their use of mature, immature, and neurotic defence mechanisms.

## 3. Methods

A survey was conducted to collect data from the study participants, who were employed graduates whose jobs were not in line either with their academic fields (horizontal job mismatch) or with the educational levels they had reached (vertical job mismatch). The participants were graduates of either public or private universities. A questionnaire divided into three sections was used to collect data from the participants. Section A gathered the participants' demographic profiles (i.e. gender, ethnicity, religion, university attended, academic programme taken, educational level reached, current job and employment duration). Section B measured the participants' vertical job mismatches (educational level reached versus educational level required for the job) and horizontal job mismatches (the participant's academic field and the academic field required for the job). Vertical job mismatches based on educational level reached focus on overeducation. Overeducation was measured by comparing the educational level reached by a participant with the educational level required for their job. That is, a participant was categorised as overeducated if the educational level they had reached was higher than the educational level required for their job. Each participant had to indicate the minimum educational level required for their current job and to state whether they were overeducated based on their perceptions and understanding of their job. The educational level they had reached was then compared with the minimum educational level required for their job. Horizontal job mismatches, on the other hand, were measured by comparing the academic field of a participant with the academic field or background required for their job. Some examples of the questions asked in Section B were 'What educational level have you reached?' 'What is the minimum educational level required for your current job?' and 'Does your current job match your academic field/programme at your university?' Section C of the questionnaire used in the present study measured each participant's defence mechanisms using the Defence Style Questionnaire (Andrew et al., 1993). This questionnaire consists of 40 items that measure the mature defence mechanisms (suppression, sublimation, humour, and anticipation), immature defence mechanisms (projection, passive aggression, acting out, devaluation, autistic fantasy, and denial) and neurotic defence mechanisms (undoing, pseudo-altruism, idealisation, and reaction formation) used by the respondent. The response scale ranges from 1 ('strongly disagree') to 9 ('strongly agree'). The following are some examples of the questionnaire items: for mature defence mechanisms, 'I work out my anxiety by doing something constructive and creative, such as painting or woodwork' (sublimation) and 'I'm able to keep a problem out of my mind until I have time to deal with it' (suppression); for immature defence mechanisms, 'I work out more things in my daydreams than in real life' (autistic fantasy) and 'When I'm depressed or anxious, eating makes me feel better' (displacement); And for neurotic defence mechanisms, 'After I fight for my rights, I tend to apologise for my assertiveness' (undoing) and 'I often find myself being very nice to people whom I should be angry at' (reaction formation). Finally, Section D (designed by Koopmans, 2015) of the questionnaire used in the present study measured work performance. It consisted of 18 items that measured three main dimensions of job performance: task performance, contextual performance, and counterproductive performance. The response scale ranged from 0 ('seldom') to 5 ('always').

#### 4. Results

Before the data were analysed, they were screened, and their reliability and validity were checked. A total of 231 graduates participated in the present study, but due to the study's objectives, only 117 job-mismatched graduates were included. Most of them were female (78, 66.70%), and only 39 (33.30%) were male. The study results showed that employment duration had negative effects on the participants' use of mature defence mechanisms, contributing 4% to the variance in the use of such defence mechanisms (Beta  $[_{1,114}] = -.20$ ;  $t = -2.18$ ;  $p < .05$ ). The mean employment duration was 8.89 months (SD = 15.34). This showed that the longer the employment duration, the less frequent the use of mature defence mechanisms (see Table 1).

Table 1. Simple Regression Value of the Effect of Employment Duration on Each Type of Defence Mechanism.

| Defence mechanism | R-square | Employment duration |         |         |
|-------------------|----------|---------------------|---------|---------|
|                   |          | Beta                | t-value | P-value |
| Mature            | .040     | -.20                | -2.18   | .03     |
| Immature          | .003     | .05                 | 0.56    | .05     |
| Neurotic          | .020     | -.13                | -1.43   | .15     |

Note:  $k < .05$

Employment duration did not show any significant impact on the use of immature and neurotic defence mechanisms, but work performance showed positive effects on the use of neurotic defence mechanisms (Beta  $[_{1,111}] = .32$ ;  $t = 3.53$ ;  $p < .05$ ), contributing 10% to the variance in the use of such defence mechanisms. This indicated that the higher the work performance perceived by graduates, the more frequent they use of neurotic defence mechanisms (see Table 2).

Table 2. Simple Regression Value of the Effect of Work Performance on Each Type of Defence Mechanism.

| Defence mechanism | R-square | Work performance |         |         |
|-------------------|----------|------------------|---------|---------|
|                   |          | Beta             | t-value | P-value |
| Mature            | .007     | .083             | 0.83    | .380    |
| Immature          | .003     | .050             | 0.56    | .050    |
| Neurotic          | .100     | .32              | 3.53    | .001    |

Note:  $p < .05$

#### 5. Discussion

The study results indicated that employment duration could affect job-mismatched graduates' use of mature defence mechanisms, defined as adaptive, normal, and effective confrontation strategies. They are based on a healthy and conscious relationship with reality. Other defence mechanisms can be primitive, immature, or maladaptive (Ohwovoriolè, 2022). Individuals who use mature defence mechanisms tend to transform their negative feelings and thoughts into less harmful and risky feelings and thoughts. According to Ohwovoriolè (2022), defence mechanisms are strategies that people use to manage their stress or anxiety. These coping skills can be varied and unconscious. They have likely evolved to protect and promote the integrity of our psychological architecture, our sense of self and our identity and esteem (Psychology Today, n.d.). The results of the present study showed that the longer the job-mismatched graduates' employment duration was, the less often they used mature defence mechanisms. This could have been influenced by several factors, such as their work environments and employment duration. Graduates who succeed in obtaining a job may tend to use mature defence mechanisms in the early stages of their employment. Cosmas et al. (2023a) found that graduates who obtained jobs sooner after graduating were likelier to use mature defence mechanisms than those who obtained jobs later. However, due to the unpleasant work environments they found themselves in, they could use other unhealthy defence mechanisms, such as projection, passive aggression, acting out, devaluation, autistic fantasy, and denial. Cosmas et al. (2023b) also found that graduates who secured a job sooner after graduating might be more concerned about their respective work environments, such as their senior workers' and employers' expectations of their productivity. Although they performed excellently at the university, it did not necessarily follow that they would also perform excellently in the workplace. This is because the work environment could be more challenging than the study environment. Raziqa and Maulabakhsha (2015) found that employees from three sectors (i.e. banking, university and telecommunication) believed that conducive and friendly work environments could help increase employees' job satisfaction. The employees who participated in the study

showed work environment concerns, such as working hours, job safety and security, relationships with co-workers, esteem needs and top management.

Regarding the second finding that work performance had positive effects on neurotic defence mechanisms, it was shown that the higher the graduates' perceived work performance, the more often they used neurotic defence mechanisms, such as undoing, pseudo-altruism, idealisation, and reaction formation. Wagas et al. (2018) found that high achievers scored higher in the use of mature and neurotic defence mechanisms, such as pseudo-altruism, idealisation, and reaction formation. According to Di Giuseppe and Perry (2021), people who use high neurotic defence mechanisms can deal with either the emotional or cognitive side of internal and external stressors, which can be handled one at a time. However, neurotic defence mechanisms have short-term advantages in coping, although they are used as crucial ways of dealing with problems (Fatima & Mahour, 2021). For instance, workers who use neurotic defence mechanisms, such as reaction formation, may find themselves being very nice to their co-workers even though they have a right to be angry at them, and workers who use the undoing defence mechanism may ask forgiveness for their assertiveness after fighting for their rights in the workplace.

## 6. Conclusion

To conclude, employment duration and work performance can affect the defence mechanisms used by job-mismatched graduates. Defence mechanisms can significantly help these graduates deal with the anxiety and stress they experience in the workplace. However, according to Walker and McGabe (2021), the continual use of defence mechanisms may lead to maladaptive behaviour, which may have negative effects on an individual's social functioning and physical and mental health. This assertion was supported by Fatima and Mahour (2021), who stated that defence mechanisms could be both constructive and destructive, based on the nature and degree of their use. Therefore, it is important for job-mismatched workers to understand the external factors that may affect their use of defence mechanisms, such as those explored in the present study. It is hoped that the present study's findings will drive future researchers to examine each type of defence mechanism (i.e. mature, immature, and neurotic). For instance, it would be interesting to examine the effects of employment duration and work performance on the use of different types of mature defence mechanisms, such as suppression, sublimation, humour, and anticipation, and to examine their contributions.

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# FACTORS RELATED TO ACCESS TO FATHERHOOD AND MOTHERHOOD

**Leire Iriarte, Leire Gordo, & Susana Corral**

*Department of Psychology, Faculty of Health Sciences, Deusto University (Spain)*

## Abstract

The declining birth rate has been a social concern for decades. Socioeconomic factors are the most studied concerning the decision to become parents. However, it is a complex and far-reaching decision that is also influenced by multiple psychological, emotional, and relational factors. The aim of this study is to analyze these factors in a sample of women and men around the third decade of life through semi-structured interviews analyzed through Thematic Analysis. The results show that the decision in many cases changes over time and circumstances and that financial and labor stability and the couple's relationship are the most relevant factors when making the decision.

**Keywords:** *Fatherhood, motherhood, psychological and emotional factors.*

## 1. Introduction

The declining birth rate is a global problem, which affects society as a whole. Experts predict that the increasing life expectancy and the current low birth rate will generate difficulties in public finances in the not-too-distant future. The problematic emancipation processes, job instability, higher education, and current living conditions are the factors most highlighted by the literature for this decline (George-Nicolae, 2013).

Whether to have children is one of the most important decisions that adults make throughout their lives (Fiori et al., 2017). The different reproductive life projects are grouped into three; (1) "childfree" (Veevers, 1979), people who decide not to have offspring during their lifetime, (2) people who decide to delay their parenthood, a group that is considered the most prominent in recent decades (Yopo Díaz, 2021), and (3) parents, who have made the decision to have children.

In a decision-making process as vital as becoming a parent, the most studied variables refer to socioeconomic factors. As mentioned above, the current economic situation, the demand for higher academic requirements (Smock & Greenland, 2010), the pressure to have offspring as well as a successful career (Harrington, 2019) and the difficulty of reconciling work and family life stand out as significant aspects that affect the decision to not have offspring (Comas d'Argemir et al., 2016). The incorporation of women into the labor market and the greater value placed on individual freedom have also been pointed out as factors that may lead to this decision (Avison & Furnham, 2015).

In addition to the socioeconomic factors that influence this decision, it is also important to analyze the psychological and emotional factors involved in this process, such as past attachments, personality or individual values (Stegen et al., 2021).

The aim of this study is to analyze, using a qualitative approach, the most relevant factors that people mention in their decision-making process to have or to not have children.

## 2. Method

### 2.1. Participants

46 people participated in the study, 39 women and 7 men with a mean age of 33.22 ( $sd = 5.12$ ) years. Participants were divided into three groups for the analysis: those who have children; those who do not have children but want them; and those who do not want them.

Table 1. Sociodemographic data.

|                                       | N  | Women | Men | Age ( <i>M, sd</i> ) | Married | In a relationship | Single |
|---------------------------------------|----|-------|-----|----------------------|---------|-------------------|--------|
| Parents                               | 19 | 18    | 1   | 35.89 (3.67)         | 12      | 6                 | 1      |
| Participants who want children        | 13 | 11    | 2   | 29.25 (3.33)         | 1       | 7                 | 4      |
| Participants who do not want children | 14 | 10    | 4   | 33 (5.96)            | 1       | 5                 | 8      |

## 2.2. Procedure

Participants were recruited through an invitation following their participation in a quantitative study. Data were collected through semi-structured interviews. Although the interviews were designed to capture different aspects of the decision and experience of accessing parenthood, this paper presents and analyzes the first theme around the reasons and circumstances surrounding the decision to have or to not have children.

## 2.3. Data analysis strategy

Thematic analysis (TA) was used for the analysis. This method is flexible and allows to explore almost any research question and ontological, epistemological and theoretical frameworks (Braun & Clarke, 2013). Two researchers coded a sample of the interviews independently, elaborating codes that captured the explicit meaning of the participants' narratives. Thus, a coding framework was agreed upon, which was used in the analysis of the subsequent interviews by the three researchers, adding more codes to the framework during the process.

We followed the 6-step process proposed by Braun and Clarke (2006): first, a detailed reading of the interviews to familiarize ourselves with the data was carried out; second, we generated initial codes, which identified some relevant and interesting features in the data; third, themes were generated, with the identification of patterns and capturing something important about the research question; the fourth step involved reviewing the themes to move on in the fifth step to defining and labeling the themes. The sixth step involved writing up the results.

## 3. Results

### 3.1. "I have children"

The desire to have children has always been present in most of the participants in this group. Most of the participants talked about the presence of this desire or the presence of the maternal/paternal instinct in their lives, saying that "it is something I had always contemplated and had the option to do it" (participant 21, woman, 40 years old), "for me, this is an experience that I had to go through. Just like someone who studies a career because they like it, I had to do motherhood." (participant 16, woman, 28 years old) or "I knew I wanted to have children and the idea was to have one." (participant 25, male, 36 years old).

In addition, for some of the participants, motherhood has involved different processes. For example, one of the participants recounted how she had felt the maternal instinct at the moment of having her first daughter, that she had "almost because you have to have one and that's it" (participant 11, woman, 37 years old). For other participants, and despite the initial desire to become mothers, motherhood has involved the search for the "ideal moment" for it. For a few of these people, the desire for motherhood was not so clearly defined, and although it was present, it was not experienced as a determining factor.

It is important to point out that for these participants, as for the rest of them, parenthood is experienced as a couple, as "a life project for both of us" (participant 30, woman, 42 years old), which sometimes involves talking about it; it is a decision-making process ("we have talked a lot about it. Well, the typical thing, that you talk and talk about it and that you want to be... you want to start a family", participant 13, woman, 33 years old), and negotiation with the partner about the right time for the arrival of the children ("It is true that my husband wanted to have children earlier, but, as I said, because of work and so on, I slowed it down a little bit", participant 15, woman, 37 years old).

The partner, specifically the "right partner," seems to be one of the important factors influencing the decision to become a parent. Ten of the participants spoke of the importance of having the right person in their lives.

Other relevant factors when making the decision are financial and employment stability. "In other words, there was more precariousness" (Participant 1, woman, 36 years old).

Eight of the participants spoke of age as a factor with some weight on the decision, reporting the feeling that it was the age for parenthood: "when suddenly you realize that the age comes so that it has to be now and that it does not make sense to leave it for much longer..." (participant 21, woman, 40 years old).

It seems that there is a certain age, the 30s, which is experienced as the age for parenthood, not wanting to leave it for later because of age ("I mean, I did not want to wait until I was 40 to become a mother; participant 7, woman, 35 years old"), or health issues of the mother or the baby.

The idea of being prepared is related to the aforementioned factors, experienced as necessary condition(s) to access motherhood.

Something also mentioned by some of the participants is the importance of having a support network for parenting, the "tribe", something relevant to be able to access parenthood and be able to reconcile ("well, a bit like the tribe, who can help you and support you", participant 15, woman, 37 years old).

The model of a traditional family may be present, since many of the participants acknowledged having lived such a family model, but this does not necessarily mean that motherhood is experienced as a repetition of the family model of childhood, but rather that it seems to imply a conscious decision and a desire to do so.

Approximately half of the participants reflected on social or family pressure to have children, as well as their experiences of having friends or family around them who have children. Although this social pressure does not seem to have influenced the participants in their decisions, they did report being aware of this pressure, and the influence it can have ("Because everyone tells you that you have to have children and I have always said that we didn't know", participant 10, female, 37 years old).

### **3.2. "I don't have children, but I want to have"**

The desire to have children, as well as liking children are two factors that the participants highlight as an important starting point in deciding to want to become parents. In this sense, the participants explained that the desire to have children is a feeling or, in their words, a "maternal instinct" that has accompanied them throughout their lives and that clearly has an impact on their intention to have offspring. This feeling or instinct has sometimes been reflected in the good connection with the children.

Another element with an important weight in the decision-making of the participants is their partners' role. Among those who have a partner, it has to do with feeling that their partner is the person with whom they can initiate a joint parenthood project. Likewise, among those who do not have a partner, some pointed to the feeling of wanting or needing to share this project with another person: "I would say that it is not essential, but... yes, I personally would like to be able to share this life project with another person" (participant 45, man, 28). About the role of the partner, among those with a partner, it was important to have reached a consensus, first, on wanting to have children and second, on the best time to have them.

Family legacies also play a role in the decision to have children. The make-up and structure of their families of origin and even the meaning of family, based on what they experienced in their own families, seems to be an aspect that, according to the participants, plays a role in their desire to be a mother or father.

Another aspect to highlight among the factors that influence the desire to be a mother or father is personality. Specifically, several participants in this group pointed to two personality characteristics that they felt might be involved in this desire, the tendency to be caregivers and to be responsible people. Participant 34 (female, 25) explained: "it is something I carry very much in my day to day life, caregiving".

The role of society is another factor that participants explored as an aspect that has an impact on their desire to be mothers and fathers: "I think there is pressure from a very young age to be a mother, and if you are not a mother you are not 100% complete" (participant 4, female, 32). Participant 47 (male, 32) also spoke of the role of society: "At a social level it is established that at a certain age, you have to have children, isn't it?".

### **3.3. "I do not want to have children"**

Regarding the desire to be a parent, this group systematically reported not wanting to have children. The participants reported not feeling the need or the desire to be parents. "Let's say that I haven't felt the desire, because I don't feel the need, period," said participant 37 (woman, 29 years old). This desire to not have children appears to be related to the non-presence of the maternal instinct and never having felt it, even when young. This aspect appeared in some of the older participants of the group.

This articulated and explicit decision, taken early in youth or early adulthood, seems to fit with what Tietjens Meyers (2001) calls "early articulators" and which has been formulated as the choice of a



childless life, consistent with the decision taken (Blackstone & Stewart, 2012). Following these authors, there is another avenue for non-parenthood, which would consist of postponing the decision, until the moment when it is biologically impossible. This could be the case of participant 20, who described how from an initial idea of having children she had evolved to not wanting to have children and, close to the moment of potentially not being able to have children biologically, she reflected on how she experienced it.

“Well, at this moment I haven't felt the need, I haven't felt it, to want to have children and although years ago I did imagine my future having them, at this moment I haven't felt it at this age and I think I have little time left so I may not have them and this decision is not affecting me” (woman, 36 years old).

This could also be the reason behind the "gray zone", referred to by participant 2, in which several of the participants were moving, by not completely ruling out a future parenthood. Feeling ready, not liking children or thinking about oneself were also mentioned.

The decision-making process in these participants involved, for many of them, a process of reflection and a conscious and deliberate decision. In this group of participants, the idea that parenthood is an important decision, and that it is a decision that has to be thought through and given a lot of thought. Constant re-evaluation can be experienced as not having made the decision.

On the other hand, there is an element of negotiation with the partner, but most of the participants agreed with their partners and shared the decision to not become parents. However, four of the participants referred to the fact that their partner's choice would make them either reconsider their own decision ("So it is something that I have always thought that if my partner wanted it and wanted it, it would not be a resounding no, no? Well, I would have considered it", participant 46, female, 40 years old; "when I have had partners who wanted to have children, that is what makes you rethink it", participant 39, male, 29 years old) or have agreed to parenthood, guided by the choice and desire of the partner.

Undoubtedly, financial issues were mentioned as one of the important factors for not having children. Some of the participants recounted the difficulties in remaining financially independent and how having a dependent child would be an unbearable financial burden. Financial stability seems to be an important precondition for starting a family. On the other hand, having a partner also seems to be an important condition for the decision whether to have children or not. It seems to be important, according to the participants, to be very clear that the potential partner is the right person.

#### **4. Discussion**

Through the interviews, we can conclude that, even though in all three groups the idea of having children or not having children has been present in their lives, this decision is not totally defined for some people and it evolves throughout life or depending on the circumstances. This is a relevant conclusion since it implies that there is a high percentage of people who, under certain circumstances, could potentially have children. Therefore, the policies and measures promoted in this regard could lead to this decision.

As for the main reasons given by the participants for not having more children, postponing this decision or not wishing to have more children, the following stand out:

**a) Incompatibility with professional development.** Participants refer that the perception of an inadequate work-family conciliation and job instability are two key factors when deciding to have children or not.

**b) Insufficient financial resources.** Currently, the high level of job insecurity means that people live a more insecure life and that, consequently, their life projects, such as becoming a parent, are frustrated. Furthermore, several studies have shown that it is women who suffer the most from this job insecurity. Bearing in mind that most of the participants in this study are women, it is to be expected that although many of them have the desire to become mothers, their current situation makes them postpone their decision.

**c) Couple-related issues.** Stability in the couple and the possibility of emancipation are two variables that are related to the decision to become a parent. Currently, delaying parenthood is seen as something in keeping with the socioeconomic situation. Our findings and results indicate that couples need to have an acceptable financial stability that allows them to become emancipated to be able to perceive sufficient stability in the couple to decide to become parents. However, a clearly relevant factor is the couple. While in the group of people who have children the decision is made as a couple and the times are valued and negotiated, accommodating these within the couple, in the group of people who do not have children but want to have them, the couple seems to have an important weight as a necessary condition, which would indicate that maternity/paternity is mostly a life project that is lived as a couple. On the other hand, for the group of people who do not want to have children, there is also a "gray zone",

since maternity/paternity is not totally ruled out and the desire of the couple would at least make the decision be reevaluated.

The desire to maintain the current lifestyle. Participants value their lifestyle positively, as well as leisure time and being able to travel, and perceive that having a child will affect them negatively at this level. Undoubtedly, socioeconomic factors are not the only ones that affect the decision to become parents or not. At the social and cultural level, there have also been changes in which men and women, compared to past generations, have consciously decided to prioritize their lifestyle over the decision to become parents. Perhaps this change leads us to think that being a father or mother is no longer a social mandate, but is now perceived as a decision to be made. Qualitative data support this idea: the participants who do not wish to become a father or a mother are not willing to become one.

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## EXPLORING THE FACTORS INFLUENCING TURNOVER OF SLOVAK TEACHERS

**Monika Magdová<sup>1</sup>, Miroslava Bozogánová<sup>2</sup>, Marianna Berinšterová<sup>3</sup>, & Tatiana Pethö<sup>4</sup>**

*<sup>1</sup>Institute of Pedagogy, Andragogy and Psychology, Faculty of Humanities and Natural Sciences,  
University of Presov (Slovakia)*

*<sup>2</sup>Institute of Social Sciences of the Centre of Social and Psychological Sciences SAS (Slovakia)*

*<sup>3</sup>Institute of Psychology, Faculty of Arts, University of Presov (Slovakia)*

*<sup>4</sup>Department of Managerial Psychology, Faculty of Management and Business,  
University of Presov (Slovakia)*

### Abstract

Turnover of teachers is major problem in society. However, most teachers point to problems that are not being solved and which lead them to turnover. It is necessary to emphasize that turnover is linked to a number of negative impacts (e.g., financial). Furthermore, turnover also has negative consequences on the remaining employees, performance. This is why it is necessary to focus on teachers and find a way to prevent the occurrence of turnover. The aim of the contribution was to explore which areas leading to turnover are the most important for Slovak teachers. 132 teachers (87.1% women), aged 24 to 68 ( $M_{age}=38.03$ ,  $SD=10.20$ ) participated in the research. Of the total number of teachers, 15.6% worked at preschools, 53.9% worked at primary schools, 13.3% worked at secondary vocational schools, 14.1% worked at secondary schools. The research sample was selected from teachers reachable via social networks or email, taking advantage of the snowball effect. Questionnaire consist of sociodemographic characteristics (age, gender, the type of school, length of practice) and the list of 27 areas related to the teaching profession. Teachers were asked to select a maximum of 7 areas they consider to be the most problematic in the teaching profession and for which they would consider leaving their job. The list of areas was created according review of the researched factors determining teacher turnover and turnover tendencies. Additionally, the teachers were also given the choice of adding another area, other than those specified in the compiled list. We identified the most problematic areas in the teaching profession. They were these, which were label by at least one third of the respondents, specifically remuneration (72.7%); job satisfaction (63.6%); students' behavior during classes (50.0%); stress linked to the teaching profession (47.0%); students' aggressiveness (45.5%); work with a minority group (42.4%); students' performance (42.4%); communication with parents (42.4%); class size (number of students in class; 33.3%); and working conditions (environment; 33.3%). We analyzed the importance of each area according the age, type of school and length of practice in more details. Results point to the importance of chosen areas of turnover among Slovak teachers and offer an opportunity for further exploration and creation of a complex scheme of mutual relations between factors of turnover. Based on this knowledge, we can work in the future on reducing negative factors and supporting positive factors in order to reduce teacher turnover.

**Keywords:** *Turnover, Slovak teachers, factors.*

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### 1. Introduction

Turnover of teachers is major problem in society. However, most teachers point to problems that are not being solved and which lead them to turnover (e.g., the declining status of the teacher in society (Kariková, 2016; Pašková & Valihorová, 2010); the increasing demands on teachers' performance (Hroncová, 1999); a growing number of problem students (Pašková & Valihorová, 2010)).

There are several reasons why these issues need addressing. The first is the fact that teachers represent a large proportion of the population (Ingersoll & Smith, 2003). Another reason are the statistics suggesting an increasing number of unoccupied teaching positions. Slovak media often mention that qualified teachers, particularly younger teachers (Kosová, 2011 in Hanesová, 2014), more particularly foreign language speakers, are opting for other sectors or positions abroad (Kariková, 2016).

In addition to pointing out that not solving teachers' problems translates into turnover tendencies and turnover itself, it is necessary to emphasize that turnover is also linked to a number of negative impacts, including negative financial impacts (Abbasi, Hollman, & Hayes, 2008; Barnes, Crowe, & Schaefer, 2007). Furthermore, turnover also has negative consequences on the remaining employees, particularly their ability to complete duties, decreased work morale, overall performance (Abbasi et al., 2008; Yin-Fah, Sok Foon, Chee-Leong, & Osman, 2010). High rates of teacher turnover will likely mean greater school instability, disruption of curricular cohesiveness, and a continual need to hire inexperienced teachers, who are typically less effective, as replacements for teachers who leave (Grissom, 2011). This is why it is necessary to focus on teachers and find a way to prevent the occurrence of turnover.

Many of researches have searched for an answer on how to reduce teacher turnover. The result is a list of many researched factors and mediators influencing turnover.

## 2. Objectives

The aim of the contribution was to explore which areas leading to potential teacher turnover are the most important for Slovak teachers. Subsequently, examine whether the importance of individual areas differs depending on age, type of school and length of practice.

## 3. Methods

### 3.1. Sample and data collection

132 teachers (87.1% women), aged 24 to 68 ( $M_{age}=38.03$ ,  $SD=10.20$ ) participated in the research. Of the total number of teachers, 15.6% worked at preschools, 53.9% worked at primary schools, 13.3% worked at secondary vocational schools, 14.1% worked at secondary schools. The research sample was selected from teachers reachable via social networks or email, taking advantage of the snowball effect. Suitable research participants ( $n=150$ ) were subsequently contacted online. After giving their informed consent, they filled in an online survey questionnaire.

### 3.2. Measures

Questionnaire consist of sociodemographic characteristics:

- Age - open question, but we used 3 categories in data analyses, which were created through visual binning (a) under 33 years; b) 33 - 42 years; c) over 42 years)
- Gender - man / woman;
- the type of school - 3 categories: preschool / primary / secondary
- length of practice - open question, but we used 3 categories in data analysis, which were created through visual binning (a) under 5 years; b) 6 - 14 years; c) over 14 years).

Subsequently, the teachers had a list of 27 areas related to the teaching profession. Teachers were asked to select a maximum of 7 areas they consider to be the most problematic in the teaching profession and for which they would consider leaving their job. The list of areas was created according review of the researched factors determining teacher turnover and turnover tendencies (Allen, Burgess, & Mayo, 2017; Barnes et al., 2007; Grant, Jeon, & Buettner, 2019; Grissom, 2011; Guin, 2004; Hanesová, 2014; Holme, Jabbar, Germain, & Dinning, 2017; Hroncová, 1999; Ingersoll, 2001a; Ingersoll, 2001b; Kariková, 2016; Kraft, Marinell, & Shen-Wei Yee, 2016; Pašková & Valihorová, 2010; Popelková et al., 2010; Shakrani, 2008; Stuit & Smith, 2010; Tomčíková & Živčák, 2013). Additionally, the teachers were also given the choice of adding another area, other than those specified in the compiled list.

### 3.3. Statistical analyses

The information collected in the course of the survey was processed using descriptive statistics available in the SPSS 21.0 program.

## 4. Results

We identified the most problematic areas in the teaching profession (Table 1). They were these, which were label by at least one third of the respondents, specifically remuneration, job satisfaction, students' behavior during classes, stress linked to the teaching profession, students' aggressiveness, work with a minority group, students' performance, communication with parents, class size (number of students in class, and working conditions (environment).

*Table 1. A percentage representation of individual areas depending on perceived problems in the teaching profession.*

| Researched area   | n  | %           |
|---|----|-------------|
| Remuneration  | 96 | <b>72.7</b> |
| Job satisfaction  | 84 | <b>63.6</b> |
| Students' behavior during classes                                       | 66 | <b>50.0</b> |
| Stress linked to the teaching profession                                | 62 | <b>47.0</b> |
| Students' aggressiveness  | 60 | <b>45.5</b> |
| Work with a minority group  | 56 | <b>42.4</b> |
| Students' performance   | 56 | <b>42.4</b> |
| Communication with parents  | 56 | <b>42.4</b> |
| Class size (number of students in class)                                | 44 | <b>33.3</b> |
| Working conditions (environment)  | 44 | <b>33.3</b> |
| School's financial resources  | 38 | 28.8        |
| Non-financial benefits  | 30 | 22.7        |
| Management, superiors and relationship to them                          | 22 | 16.7        |
| Teacher status and value of teacher's work                              | 22 | 16.7        |
| Quality of relationships with colleagues                                | 18 | 13.6        |
| Health risks  | 18 | 13.6        |
| Perception of justice   | 18 | 13.6        |
| Career growth, opportunities for promotion                              | 16 | 12.1        |
| Work with students in general   | 16 | 12.1        |
| Support from superiors  | 16 | 12.1        |
| Motivation  | 12 | 9.1         |
| Work commitment and engagement  | 12 | 9.1         |
| Workplace communication   | 10 | 7.6         |
| Mobbing / bossing   | 8  | 6.1         |
| Type of job (work itself)   | 6  | 4.5         |
| Conflict between professional life and personal life                    | 4  | 3.0         |
| Freedom to take decisions and manage                                    | 4  | 3.0         |
| Other – school's material equipment; changes of textbooks for the worse | 2  | 1.5         |

Subsequently, we analyzed these important areas according the age, type of school and length of practice in more details. Considering age, we found that younger teachers (under 33 years) consider the following areas to be less problematic: a) students' behavior during classes; b) stress linked to the teaching profession; c) students' performance in compare to other teachers. On the other hand, they consider working condition more problematic with compare with other groups. In addition, we found that older teachers (over 42 years) consider communication with parents to be a problematic area compared to other teachers.

Considering type of school, we found that teachers from preschool education perceived: a) students' behavior during classes; students' aggressiveness; students' performance; communication with parents than less problematic areas; b) remuneration than more problematic areas with compare to teachers form other types of school. Moreover, teachers form primary schools perceived stress linked to the teaching profession and work with minority group than more problematic areas than others teachers.

Finally, according the length of practice, we found that differences appear only in relation to teachers with the shortest length of practice. These teachers perceived a) remuneration and working condition such as more problematic areas; b) students' behavior during classes; communication with parents; class size such as less problematic areas in compare with others teachers. We can summarize that even if the differences do not appear in every area, there are still some small ones.

Table 2. Important areas (percentage representation) according the age, type of school and length of practice.

|  | Age (%)     |             |             | Type of school (%) |             |           | Length of practice (%) |              |            |
|--|-------------|-------------|-------------|--------------------|-------------|-----------|------------------------|--------------|------------|
|  | ≤ 32 years  | 33-42 years | ≥43         | preschool          | primary     | secondary | ≤ 5 years              | 6 - 14 years | ≥ 15 years |
| Remuneration                             | 77,8        | 76,2        | 61,1        | <b>90,0</b>        | 68,1        | 77,1      | <b>82,6</b>            | 68,2         | 66,7       |
| Job satisfaction                         | 66,7        | 64,3        | 58,3        | 65,0               | 62,3        | 62,9      | 58,7                   | 68,2         | 64,3       |
| Students' behavior during classes        | <b>37,0</b> | 57,1        | 61,1        | <b>20,0</b>        | 56,5        | 48,6      | <b>34,8</b>            | 59,1         | 57,1       |
| Stress linked to the teaching profession | <b>29,6</b> | 57,1        | 55,6        | 30,0               | <b>58,0</b> | 40,0      | 43,5                   | 40,9         | 52,4       |
| Students' aggressiveness                 | 40,7        | 57,1        | 38,9        | <b>0,0</b>         | 60,9        | 51,4      | 43,5                   | 45,5         | 47,6       |
| Work with a minority group               | 44,4        | 38,1        | 44,4        | 30,0               | <b>50,7</b> | 31,4      | 34,8                   | 45,5         | 47,6       |
| Students' performance                    | <b>33,3</b> | 47,6        | 50,0        | <b>10,0</b>        | 44,9        | 54,3      | 39,1                   | 40,9         | 47,6       |
| Communication with parents               | 33,3        | 33,3        | <b>61,1</b> | <b>20,0</b>        | 42,0        | 42,9      | <b>26,1</b>            | 45,5         | 52,4       |
| Class size (number of students in class) | 27,8        | 38,1        | 36,1        | 30,0               | 34,8        | 34,3      | <b>21,7</b>            | 47,7         | 31,0       |
| Working conditions (environment)         | <b>42,6</b> | 26,2        | 27,8        | 30,0               | 34,8        | 25,7      | <b>41,3</b>            | 29,5         | 28,6       |

## 5. Conclusions

The aim of the contribution was to explore which areas leading to potential teacher turnover are the most important for Slovak teachers. The aim was filled through survey, where 132 teachers were participated and they stated, which areas are the most important and for which they would consider leaving their job. Results point to the importance of chosen areas leading to potential turnover among Slovak teachers. These areas are: remuneration, job satisfaction, students' behavior during classes, stress linked to the teaching profession, students' aggressiveness, work with a minority group, students' performance, communication with parents, class size (number of students in class), and working conditions (environment).

The descriptive character of statistical analysis may represent a limitation of this study, however this survey represent the first step of the exploration Slovak teacher turnover in wider context. The aim was to find out on which area it is important to focus in the future complex research.

We are based on the findings of the authors Price and Mueller (1981) and also Steers and Mowday (1979), who developed a comprehensive turnover model (which was several times revised) consisting of variables and intervening variables (direct and indirect impact) causing the variation of turnover. We would like to create similar model which will be consist of variables, which are the most important for Slovak teachers and which take into account the current situation and current events. We also mean the knowledge of the aforementioned authors that turnover is not affected only by a single factor, but a complex of several factors.

Based on this knowledge, we will explore the most important areas in more detail with the aim to create a complex scheme of mutual relations between factors of turnover. Based on this, we can work in the future on reducing negative factors and supporting positive factors in order to reduce Slovak teacher turnover.

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## **THE FEASIBILITY OF A RETIREMENT PREPARATION PROGRAM BASED ON RESOURCES FOR THE BRAZILIAN CONTEXT**

**Mariana Motta da Costa Broilo França, & Silvia Miranda Amorim**

*Department of Psychology, Federal University of Minas Gerais (Brazil)*

### **Abstract**

The aging of the world population, especially in Brazil, is an achievement of contemporary society, although it presents challenging social, economic, and psychological impacts. Therefore, the increasing number of retirees in Brazil makes retirement an important area of study in psychology, as its transition brings significant changes in lifestyle, which are interpreted positively or negatively by individuals. Perception of retirement, satisfaction, and well-being during this phase are influenced by various factors, and retirement well-being, as proposed by the Resource Theory, results from the adaptations of individuals' physical, financial, social, emotional, cognitive, and motivational resources. In this perspective, an analysis of retirement is conducted focusing on the positive aspects present in individuals' lives, with the aim of strengthening these personal resources. Thus, Retirement Preparation Programs (RPP) emerge as an intervention possibility, seeking to deconstruct prejudices and reinforce the potentials of pre-retirees, helping them to redefine this phase of life, support their decision-making, and generate well-being. Given the importance of RPPs, the research aimed to adapt a program model based on the resource theory for the Brazilian context, in order to provide the experience of retirement preparation for Brazilians. The developed RPP consisted of two experimental groups, and the intervention model comprised six pre-structured weekly sessions with the pre-retiree group. The first session was conducted to introduce the program, its objectives, and to reflect on the roles associated with work and retirement. The second session focused on discussing the individual resources present in each participant's life. The third session aimed to explore goals for retirement, while the fourth session addressed the identification of strategies for adapting to changes. The fifth session involved formulating potential actions to overcome retirement obstacles, and the sixth session served to conclude the group and reflect on insights derived from the program. The feasibility assessment of the study was conducted utilizing an evaluation form for the sessions by the facilitators and a final satisfaction form filled out by the retirees. The results enabled the identification of the feasibility of implementing the retirement preparation program based on resources in the Brazilian context. Building upon the initial feasibility evidence from the first groups, an expansion of the sample size and the implementation of a quasi-experimental longitudinal study are necessary to assess its effectiveness and psychological impact on the participants.

**Keywords:** *Retirement, retirement preparation, well-being, intervention.*

## **1. Introduction**

### **1.1. Retirement, resource theory, and retirement preparation programs**

The aging of the population in much of the world is a significant achievement of contemporary societies. In Brazil, it began in the 1970s, and currently, there is an increasingly large portion of the population in the 60 years old or older age group, with a life expectancy projected to be 79.9 years in 2040 (Miranda, Mendes & Silva, 2016). Although this development is positive for society, these continuous changes in the demographic pyramid bring concerns, as the country is not prepared to deal with its social, economic, and psychological effects and ensure quality of life for older citizens (Miranda et al., 2016). Due to this growth in the number of elderly individuals and consequently retirees, retirement becomes an increasingly relevant area of study and intervention for psychology.

Retirement can be conceptualized as the partial or complete exit of an individual from the workforce, accompanied by a decrease in psychological commitment to work (Wang & Shi, 2014). Given that work plays a central role in people's lives in contemporary society, retirement brings significant lifestyle changes and can be viewed in various ways by individuals. Some may associate retirement with uselessness and old age, others with a new stage of life, and still others as a moment of insecurity in the



face of losses (Macêdo, Bendassolli & Torres, 2017), associated with either more losses or more gains (França & Vaughan, 2008). Satisfaction and well-being in this phase are multifaceted, influenced by factors such as health, economic situation, gender, marital status, interpersonal relationships, voluntariness of retirement, length of retirement, and engagement in leisure activities (Amorim & França, 2019; Wang & Shi, 2014).

Considering these differences in individuals' perceptions of retirement and the outcomes on individual well-being, Wang (2007), drawing from Role Theory, Continuity Theory, Life Course Perspective, and Hobfoll's Resource Theory (2002), proposed the Resource Theory for retirement. According to Hobfoll (2002), resources could be defined as an individual's total capacity to satisfy their core values and needs. The Resource Theory for retirement suggests that this total capacity in retirement includes physical, financial, social, emotional, cognitive, and motivational resources. Well-being could then be seen as the result of changes in these personal resources (Wang, 2007). Thus, the Resource Theory integrates aspects of some of the main theories on aging to provide a possible explanation for why satisfaction and well-being in retirement differ among individuals and how each environmental and psychological factor can affect each one. In this view, retirement is analyzed based on the positive aspects existing in individuals' lives, aiming to strengthen these personal resources.

Considering the socio demographic change in Brazil, the diversity of perceptions towards retirement, the various factors impacting well-being in retirement, and the need to preserve personal resources in this stage of life, preparatory actions for this moment are essential to maintain elderly individuals psychologically healthy. From a positive view of aging, Retirement Preparation Programs (RPPs) emerge as an intervention possibility. These programs aim to deconstruct prejudices, strengthen the potentials of pre-retirees, help cope with stressors involved in the retirement process, promote greater autonomy, and enhance quality of life (Macêdo et al., 2017; Durgante, Navarie e Sá & Dell'Aglio, 2019; Cassanet, McKenzie & McLean, 2023). These programs are of great importance as retirement is a complex decision-making process that can be greatly influenced by planning (Wang & Shi, 2014), supporting retirees in decision-making and well-being promotion (Amorim et al., 2019; Pazzim & Marin, 2018).

RPPs exist in various structures, including sustained intervention, which refers to RPPs with a longer period, usually eight to 20 weekly sessions, brief intervention, which is a short-term preventive action of approximately three sessions, and intensive action characterized by immersion in activities concentrated over a few days (Seidl, Leandro-França & Murta, 2014). In Brazil, the first RPPs emerged in the 1980s, but they were mainly focused on lectures for workers about health, finances, leisure, and entrepreneurship, lacking the possibility of reflection on the process and deepening debates (Seidl et al., 2014). Currently, RPP development in the country is more extensive and profound, but there is still a great difficulty in implementing these programs at the national level and few studies seeking to measure their effectiveness (Durgante et al., 2019). Considering the beneficial potential of RPPs for retirees and the scarcity of RPP models for the Brazilian context, the main objective of this study was to adapt a retirement preparation program model based on Resource Theory for the Brazilian context and verify its implementation feasibility.

## **1.2. Program description: preparing resources for retirement**

The "Preparing Resources for Retirement" Program was built based on the program by Seiferling and Michel (2017), chosen for its solid theoretical foundation focusing on Resource Theory, its format of sustained interventions, its longitudinal follow-up with participants, and its significant effects on the reported quantity of resources by participants, expectations regarding retirement, and intention to master the retirement transition.

The developed RPP consisted of two experimental groups, each composed of 6 and 4 participants, respectively. Each group had a total of 6 pre-structured weekly meetings lasting two hours each, based on guidelines from other programs (Pazzim et al., 2018; Seiferling et al., 2017, 20; Cassanet et al., 2023). The general structure of the meetings consisted of an initial rapport, presentation of the meeting's theme, application of a dynamic, discussion, assignment of homework, and closure. The sessions included future-oriented exercises and techniques that encouraged participants to develop a clear and positive, yet realistic, picture and expectations about their retirement transition (Seiferling et al., 2017). For the program adaptation, techniques already used in other Brazilian programs were analyzed and selected to fit the theoretical objectives established by the resource-based RPP.

The first meeting was held to provide an overview of the intervention's objectives, content, and procedure and to reflect on the roles related to work and retirement and coping strategies for difficulties, based on Role Theory (Ashforth, 2001). The second meeting was used to discuss the individual resources existing in each participant's life and to help participants define goals, based on Resource Theory (Wang, 2007). The third meeting aimed to explore and define retirement goals, based on Locke and Latham's

Goal Setting Theory (1990). The fourth meeting was used to discuss the concepts of selection, optimization, and compensation and apply them to participants' trajectories, in order to help identify current strategies or develop new ones to manage the transition and adapt to life changes, based on Life Span Development Theory (Heckhausen et al., 2010) and Selection, Optimization, and Compensation Theory (Baltes & Rudolph, 2013). The fifth meeting was held to formulate potential actions to combat obstacles and setbacks to their retirement visions. This reflection on setbacks is essential for effectively coping with potentially stressful events and increasing feelings of capability and self-efficacy, thus facilitating retirement transition and adaptation. Finally, the sixth meeting was conducted to conclude the group, recap previous sessions, reflect on new insights and ideas from the program, and define rituals that could help structure psychological transitions, based on Psychological Transition Rituals (Bridges, 2009).

## 2. Methods

The present study is a feasibility study to verify the potential success of the intervention and propose changes based on the collected data, followed by an efficacy study of the intervention. Feasibility criteria were determined based on guidelines suggested by Durgante and Dell'Aglio (2018), which include: demand, adherence, processes and technical issues, and program satisfaction. The demand variable was collected by measuring attendance frequency and through the registration form, consisting of a sociodemographic questionnaire with 11 questions about relevant criteria for intervention application. Adherence, processes, and technical issues variables were collected through a form completed by the mediators at the end of each session, containing 7 objective Likert scale questions ranging from 1 to 5, and 3 descriptive questions, based on Durgante et al. (2019). The satisfaction variable was collected through a form filled out by the participants at the end of the intervention, containing 15 questions, with 2 descriptive and the rest objective, varying on a scale from 1 to 5, based on Durgante et al. (2019).

The feasibility study was conducted with a total of 10 retired participants divided into two experimental groups, each led by 2 mediators, psychology students (one responsible for conducting the session and one for taking notes). Participants were selected through the dissemination of the registration form on WhatsApp groups, Instagram, and LinkedIn of the research group, as well as on social media and press releases from the Federal University of Minas Gerais (UFMG). Inclusion criteria for the sample were: being within 5 years of retirement or already retired, agreeing to participate in the feasibility assessment, and signing the Informed Consent Form, in accordance with the ethical guidelines established by the UFMG Research Ethics Committee. Inclusion criteria for the mediators were: being psychology undergraduates from the eighth semester onwards at UFMG, having received theoretical training on program procedures and evaluation methods, and participating in weekly supervision meetings with the program's responsible faculty member.

Regarding the socio demographic data of the participants, 90% of them were female, and 80% were within two years or less of retiring. In terms of education, 2 participants had a bachelor's degree, 5 had a specialization, 2 had a master's degree, and 1 had a doctorate. The monthly income of 60% of the participants ranged between R\$ 4,001 and R\$ 8,000, while the remaining 40% had incomes between R\$ 8,001 and over R\$ 10,000. These findings suggest that the participants were mostly from the middle to upper class of the Brazilian population. Out of the total participants, 70% did not have retirement preparation programs in their workplace, and 30% were unsure about this information. The average age of the participants was 58.1 years ( $SD = 4.4$ ).

Due to the small number of participants making group comparisons difficult and the study's objective being to assess the general feasibility of intervention application, evaluations were conducted considering the group as a whole. Descriptive analyses and content analyses of the data were used for data analysis.

## 3. Results

In terms of demand, there were 30 individuals interested in the program. Out of the 14 selected to participate in the intervention, 10 completed the program (71.43%). Among the dropouts, three reported quitting due to their work schedules and requested to be included in the next group, and one reported that their expectations were not met. The remaining 16 interested individuals were placed on a waiting list for the efficacy study. The number of attendances ( $n=50$ ), considering the program completers ( $n=10$ ), was satisfactorily lower than the number of absences ( $n=10$ ), achieving an 83.33% attendance rate.

Regarding adherence, processes, and technical issues, the total score assessed by the mediators was calculated as the average of the evaluation scores for each session, resulting in  $X=3.94$  ( $SD=0.44$ ). This indicates that, overall, in terms of adherence, procedures, and techniques, the mediators' evaluation

indicated satisfactory performance in the sessions, with an acceptable variation in evaluation scores among mediators. The average evaluation scores for each session were as follows:  $X=3.64$  ( $SD=0.3$ ),  $X=3.3$  ( $SD=0.4$ ),  $X=4.64$  ( $SD=0.3$ ),  $X=4.07$  ( $SD=0.3$ ),  $X=3.7$  ( $SD=0.8$ ), and  $X=4$  ( $SD=0.4$ ). Thus, all sessions received evaluation scores above 70% with acceptable variations among mediators.

Although the objective evaluation of the sessions yielded overall positive results, some comments in the descriptive questions indicated some issues with this initial implementation. There were reports that in some sessions, there was not much engagement from the participants and difficulties in explaining some concepts. One of the mediators indicated difficulties in commitment from the other mediator, having to take on the majority of session facilitation, as well as difficulties from participants in completing homework tasks. On the positive side, it was reported that in other sessions, participants seemed generally interested in discussions and were able to engage deeply with topics. Additionally, it was reported that over the course of the sessions, the group developed cohesion among themselves.

Lastly, satisfaction assessed in the final participation form yielded overall positive results, with the score calculated as the average of ratings among group participants,  $X=4.6$  ( $SD=0.17$ ). This indicates that overall participant satisfaction exceeded 90% with minimal variation among participants. The question "What is your overall satisfaction with the program?" obtained an average of  $X=4.88$  ( $SD=0.35$ ), the question "How would you rate the group coordination?" obtained an average of 4.75 ( $SD=0.46$ ), and the question "How was your understanding of the content covered during the sessions?" obtained an average of  $X=4.38$  ( $SD=0.52$ ). These responses indicate that, although mediators faced perceived difficulties in facilitating sessions, for pre-retirees, the perception of satisfaction, coordination, and content of the sessions was positive. The question "Was it easy to attend all sessions of the program?"  $X=4.00$  ( $SD=1.06$ ) had the lowest average among participants and the highest standard deviation, which may be due to participants' work schedules and varying levels of flexibility. Some comments from the descriptive questions such as "Very well-prepared and oriented team, committed to the group's purpose" "I learned a lot and clarified my ideas regarding setting goals to emotionally prepare for retirement" and "It was the first time I opened up to the possibility of retirement; I always had resistance to the subject, here I prepared myself emotionally above all," reveal this overall satisfaction.

#### 4. Discussion and conclusion

Based on the findings, there is generally a feasibility of implementing the "Preparing Resources for Retirement" program for the Brazilian context. Regarding demand, the fact that a waiting list was generated indicates that the intervention is of interest to the population and has a well-established potential target audience. The majority of participants being female from middle to high class backgrounds may indicate a greater demand for this type of program among this demographic, but it could also be a result of limited outreach efforts. Therefore, it is proposed that outreach methods be expanded for future groups. The program received relatively high demand ( $n=30$ ), resulting in a waiting list, and the completion rate was satisfactory (71.43%), but it is suggested that for the efficacy study, interviews be conducted before the start of the groups to explain the program in detail and reduce the number of dropouts. This measure could be effective, as among the completers, there was an 83.33% attendance rate, indicating that those who engaged with the program maintained a high level of attendance.

Regarding the evaluation of the mediators on adherence, processes, and technical issues, although the evaluation averages were good, some changes are suggested to address the issues presented. It is necessary to conduct a more thorough selection of mediators to reduce engagement difficulties. Additionally, more extensive training for these mediators is ideal to decrease their difficulty in facilitating the sessions. In terms of participant satisfaction with the program, the evaluations were generally very positive, both in objective and descriptive questions, indicating that the perception of pre-retirees was that the group brought benefits to their retirement planning. One point that could be changed to facilitate participation in more sessions and completion of homework tasks would be to send reminders via WhatsApp one day before the sessions to remind them of these activities. Based on participant suggestions, it is suggested that texts on the topics discussed be sent via WhatsApp in future groups.

Some limitations of the present study included the small number of participants ( $n=10$ ) and the solely descriptive analysis of the results, which are justifiable for a feasibility study. Thus, the results indicate that the implementation of the program is feasible in the proposed context and tends to align with the benefits proposed in the literature by retirement preparation programs (Pazzim et al., 2018; Seiferling et al., 2017; Durgante et al., 2019; Cassanet et al., 2023). Therefore, it is proposed that a quasi-experimental study be conducted next to assess the effectiveness of the program in a larger sample of pre-retirees.

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## MEASURING CHEMOPHOBIA IN AN ITALIAN SAMPLE TO SUCCESSFULLY IMPLEMENT A SOCIAL MARKETING CAMPAIGN

**Sebastiano Rapisarda, Damiano Girardi, Elvira Arcucci,  
Alessandra Falco, & Laura Dal Corso**

*FISPPA Section of Applied Psychology, University of Padua, Padua (Italy)*

### Abstract

People often hold a predominantly unfavorable view of chemicals, primarily rooted in misunderstandings and apprehension. Chemophobia is an irrational fear of chemicals, characterized by an excessive concern regarding the potential dangers posed by chemicals and the belief that any concentration and level of exposure to them is harmful. The term “chemicals” is commonly associated with synthetic compounds, hence chemophobia is more prominently linked to the apprehension of exposure to man-made chemicals rather than those of natural origin. People exhibiting chemophobia often express a preference for chemicals derived from natural sources as opposed to synthetic ones in various products (e.g., personal and domestic hygiene, food). Individuals’ risk perception may significantly impact their decision-making and behaviors. Consequently, chemophobia has the potential to hinder people from making well-informed choices regarding chemicals and products. For example, individuals with high levels of chemophobia may reject certain chemicals and products, such as pharmaceutical drugs and vaccines, even if they are beneficial, simply because they are artificially produced and therefore are perceived as unsafe. Identifying factors that may mitigate chemophobia would be instrumental in addressing and reducing negative attitudes and behaviors toward chemicals. Within the planning of a social marketing campaign aimed to promote a more positive perception of chemicals, often contrasted with the concept of “natural substances”, and to counter chemophobia, the current study presents a first contribution to the evaluation of the psychometric properties of the Chemophobia scale in an Italian sample. The results confirm the single-factor structure of the scale. In line with the original scale, Item 7 shows a lower factor loading than the others; thus, the final version of the scale consists of six items. In general, good psychometric properties are found in terms of Cronbach’s alpha ( $\alpha = .86$ ), average variance extracted (AVE = .55), and composite reliability (CR = .88). The results are promising and future research could focus on the construct and criterion validity of the scale in the Italian context. This self-report scale may be a useful tool in the implementation of a social marketing campaign based on an informative approach. This approach may successfully reduce chemophobia by diminishing the perception of risk and fear associated with chemicals through an enhanced understanding of toxicological principles and awareness of the benefits derived from the use of chemicals.

**Keywords:** *Social marketing, chemicals, chemophobia, healthy behavior, risk perception.*

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### 1. Introduction

Chemistry is frequently perceived as a complex and challenging science, particularly difficult to be shared effectively. The remarkable human and economic progress witnessed in recent decades has largely been facilitated by an extensive division of labor. However, one potential drawback of this advancement is that consumers may lack an in-depth understanding of the production process of the goods they use in their daily lives. This can lead some individuals to rely on mental shortcuts (e.g., affect heuristic) when assessing associated benefits and risks, such as in the case of chemicals. The perception of risk is not always guided by rational and analytical judgments. While experts tend to evaluate risks based on scientifically proven facts, consumers’ risk assessment is more subjective and influenced by personal experience, knowledge, and information obtained from various sources. It is a combination of psychological and cultural forces that lead different groups of individuals to process information differently (Bearth et al., 2014). In Europe, the prevalence of certain unfounded fears triggered by chemicals has led to a desire among many to inhabit a world devoid of such substances.

Similarly, numerous individuals claim to exert maximal efforts to steer clear of chemical substances (Siegrist & Bearth, 2019).

This aversion towards chemistry is referred to as chemophobia. In a recent review (Rollini et al., 2022) numerous definitions of chemophobia are provided. Some authors define it as the fear of chemistry or as the irrational fear of chemical substances, while others describe it as the fear of chemicals and concerns about chemicals and cancer or as the popular belief that all chemicals are toxic and likely carcinogenic. Other definitions propose it as a long-term and persistent irrational fear of chemistry and chemical substances accompanied by a strenuous effort to avoid them, leading to hypersensitivity or even intolerance in this domain, or the irrational tendency to view predominantly synthetic chemical substances as dangerous and something to be avoided at all costs. Among these, the most widespread and accepted definition is “the irrational fear of chemical substances”, although it must be noted that chemophobia, despite its potentially misleading name, is clearly distinguished from psychopathological phobias as it does not meet the criteria of a phobia (i.e., psychological strain) (Bearth et al., 2021).

When consumers express concerns about chemicals used in products, they may avoid using them or reduce their exposure especially to synthetic chemicals such as artificial additives in food. Therefore, chemophobia may lead people to avoid products containing chemicals that could prove beneficial (e.g., medicines, vaccines) or support groups that advocate for the removal of various chemicals from the market without considering scientific evidence of their safety. On the flip side is the danger of neglecting the risk associated with natural chemicals, perceived as less threatening than their synthetic counterparts (Saleh et al., 2019, 2021). Therefore, understanding elements that may reduce chemophobia could aid in tackling laypeople’s adverse perceptions and responses to chemicals.

## 2. Objectives

Within a social marketing initiative aimed to foster a more favorable view of chemicals, often juxtaposed to “natural substances”, and to counteract chemophobia, this study aims to offer an initial exploration of the psychometric characteristics of the Chemophobia scale proposed by Saleh et al. (2019, 2020) within the Italian context.

## 3. Methods

### 3.1. Participants

Participants were 150 Italian women (60%) and men (40%), with a mean age of 32.38 years ( $SD = 13.55$ ). Half of the participants held a university degree (50.7%); 38% had a high school diploma; 7.3% had post-graduate education; 4% had an elementary/middle school diploma. The majority did not have a Science, Technology, Engineering, and Mathematics (STEM) education (75.3%), while nearly one-third of the participants did (24.7%). More than half of the participants worked (58%); 34.6% were students; 4.7% were unemployed; 2.7% were retired.

### 3.2. Measures

Chemophobia was assessed with an Italian translation of the Chemophobia scale (Saleh et al., 2019, 2020). The original scale was unidimensional and composed of five items (Saleh et al., 2019). Subsequently, the authors added two items while maintaining unidimensionality (Saleh et al., 2020). The original scale items were translated into Italian by the authors. An English native-speaker translator performed a back-translation, to guarantee semantic correspondence between the English and Italian versions of the scale. The final version produced a one-factor scale with six items (e.g., “*I do everything I can to avoid in my daily life contact with chemical substances*”). The response scale ranged from 1 (strongly disagree) to 6 (strongly agree). The Cronbach’s alpha for the scale was .86.

The participants’ socio-demographics (e.g., age, gender, level of education) were included in the questionnaire.

### 3.3. Data analyses

The psychometric properties of the Italian Chemophobia scale were evaluated through a confirmatory approach. We conducted two confirmatory factor analyses (CFAs) (i.e., a one-factor seven-item model, and a one-factor six-item model) by means of the Lisrel 8.80 software (Jöreskog & Sörbom, 2006). To assess the adequacy of fit for the CFA models, the  $\chi^2$  test was utilized. A model exhibits satisfactory fit if  $\chi^2$  is nonsignificant. However, due to the influence of sample size on  $\chi^2$ , additional fit indices were considered (Schermelleh-Engel et al., 2003): the comparative fit index (CFI) and the nonnormed fit index (NNFI), both indicating good fit if values are  $\geq .97$  and acceptable fit if

values range between .95 and .97; the root-mean-square error of approximation (RMSEA), with values  $\leq .05$  indicating good fit and values between .05 and .08 indicating acceptable fit; and the standardized root-mean-square residual (SRMR), with values  $\leq .05$  considered good and values between .05 and .10 considered acceptable. Additionally, composite reliability (CR) and average variance extracted (AVE) indices were calculated, with values  $\geq .70$  and  $\geq .50$ , respectively, considered satisfactory (Bagozzi & Yi, 2012; Fornell & Larcker, 1981). The Chi-square difference ( $\Delta\chi^2$ ) test was used to compare the fit of competing nested models (Hu & Bentler, 1999).

#### 4. Results

Regarding the one-factor model with seven items, the fit indices showed an acceptable fit to the data, except for RMSEA, which indicates poor fit –  $\chi^2 (14) = 35.80, p = .001$ ; CFI = .97; NNFI = .95; RMSEA = .11; SRMR = .06. Table 1 shows standardized factor loadings, CR, and AVE. Standardized factor loadings were all significant and greater than .50 except for item 7. Furthermore, CR reached satisfying values, while AVE did not (Table 1). Therefore, in line with the original scale, item 7 appears to reduce the psychometric quality of the scale.

To have a measurement scale with adequate psychometric properties, we next performed a CFA of the one-factor model with six items. The fit indices showed a good fit to data, except for RMSEA, which indicates an acceptable fit –  $\chi^2 (9) = 18.64, p = .028$ ; CFI = .99; NNFI = .98; RMSEA = .08; SRMR = .04. Standardized factor loadings are all significant and greater than .50. Moreover, CR and AVE reach satisfying values (Table 1).

Table 1. Standardized factor loadings, CR, and AVE for the seven-item and six-item models.

|        | Seven-item model | Six-item model |
|--------|------------------|----------------|
|        | Factor loading   | Factor loading |
| Item 1 | .66              | .66            |
| Item 2 | .82              | .83            |
| Item 3 | .81              | .81            |
| Item 4 | .74              | .73            |
| Item 5 | .74              | .73            |
| Item 6 | .68              | .67            |
| Item 7 | .25              | -              |
| CR     | .86              | .88            |
| AVE    | .48              | .55            |

Note. Non-statistically significant values are in italics.

Even the  $\Delta\chi^2$  test suggests accepting the six-item model (Table 2). Therefore, the instrument exhibits good psychometric characteristics.

Table 2. Fit indices and Chi-square difference.

| Model            | $\chi^2$ | df | CFI | NNFI | RMSEA | SRMS | $\Delta\chi^2$ | $\Delta df$ |
|------------------|----------|----|-----|------|-------|------|----------------|-------------|
| Seven-item model | 35.80*** | 14 | .97 | .95  | .11   | .06  |                |             |
| Six-item model   | 18.64*   | 9  | .99 | .98  | .08   | .04  | 17.16**        | 5           |

Note. \*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$ .

#### 5. Discussion and conclusion

The current study aimed to provide an initial contribution to the evaluation of the psychometric properties of the Chemophobia scale proposed by Saleh et al. (2019, 2020) in the Italian context. The results confirmed the single-factor structure of the scale. Consistent with the original scale, Item 7 exhibited a lower factor loading compared to the others, thus leading to the reduction of the final scale to six items. Overall, good psychometric properties were observed, with a high Cronbach's alpha coefficient ( $\alpha = .86$ ), an AVE of .55, and a CR of .88. Therefore, the instrument exhibits good psychometric characteristics. Future research is needed to evaluate the validity of the scale, exploring possible relationships with other relevant dimensions (e.g., knowledge of chemical principles, attitudes towards chemical products, behavioral intentions, health concerns).

How can we counteract chemophobia? Dealing with chemophobia is a challenging task that requires collaboration across various sectors and involves professionals (e.g., chemists, psychologists). Trust in experts is crucial for the acceptance of the messages they convey. Product certifications can also play a significant role in ensuring access to safe and eco-friendly products. Enhancing communication about responsible handling of chemical products in daily life may serve as a potential strategy to mitigate chemophobia. Furthermore, the chemical industry has undergone substantial restructuring, embracing the principles of green chemistry, which offers a solution to the fear of chemicals within the chemical community (Rollini et al., 2022). Green chemistry provides a pathway to explore innovative methods of producing molecules with desirable properties while minimizing waste and pollution. Implementing green chemistry principles in laboratory settings may also aid students in overcoming apprehensions associated with handling chemical substances (Tarasova & Makarova, 2020). Additionally, when considering the negative correlation between chemophobia and understanding of basic toxicological principles and chemicals (both natural and synthetic), and the perceived lack of knowledge about chemicals among people (Bearth et al., 2019; Saleh et al., 2019; Siegrist & Bearth, 2019), promoting education on these topics is hypothesized to be one of the most effective strategies to combat chemophobia (Rulev, 2021). Indeed, a foundational understanding of chemistry enables individuals to critically assess pseudo-scientific and conspiratorial information. Recent research supports the notion that an informational approach, focusing on basic toxicological principles, is more effective than one based solely on emotional appeal in addressing chemophobia (Saleh et al., 2020).

As is known, common themes across various definitions of social marketing include “(a) influencing behavior change, (b) utilizing a systematic planning process that applies marketing principles and techniques, (c) focusing on priority audience segments, and (d) delivering a positive benefit for individuals and society” (Lee et al., 2023, p. 7). Therefore, measuring the personal disposition to chemophobia may help researchers and practitioners identify individuals and/or groups needing targeted efforts in terms of social marketing and educational communication (Falco et al., 2013). The results of this study highlight the good psychometric characteristics of a scale aimed to measure chemophobia in the Italian context, representing a further development in terms of operationalizing the construct. This tool proves to be particularly useful for the initiation of a social marketing campaign, currently underway in a research project with a scientific museum in northern Italy, aimed to modify some aspects of people’s behavior associated with the use of chemical products by promoting a greater understanding of chemistry.

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## EXPLORING THE LINKAGES BETWEEN PERSONALITY AND EMPLOYEE-UNEMPLOYED HAPPINESS: PRELIMINARY STUDY

Nevin Kılıç<sup>1</sup>, & Arkun Tatar<sup>2</sup>

<sup>1</sup>*Department of Psychology, FSM Vakif University (Türkiye)*

<sup>2</sup>*Department of Psychology, Manisa Celal Bayar University (Türkiye)*

### Abstract

Happiness has been decreasing regularly in Türkiye in recent years. This decline become more evident in new economic conditions. Therefore, whether or not you employed in a job having income may be determining factor in happiness level in these conditions. In this study, the role of personality traits in happiness was examined between those who are employed (earning income) and those who are unemployed persons in Turkey. The study was conducted in 2023 via a web-based form. The short form of Oxford Happiness Scale and the Big Five Personality Test were used in the study. The study included those who employed in an income-generating job (n=258, 73.9%) and those who could not find a job as they wanted to work (n=91, 26.1%). Aid volunteers, students, retirees, housewives, etc. are not included in the unemployed group. The participants were between the ages of 18-77 (mean=31.69, n=1192) and 167 were women (47.9%) and 182 were men (52.1%). In the study, first, participants were grouped as unhappy and happy groups according to the happiness scale total score average (mean = 3.61, s = 0.51). The participants below the average were defined as the unhappy (n = 159, 45.6%) and above the average as the happy group (n=190, 54.4%). According to the results, there is a difference between the five-factor total scores of the happy and unhappy groups in both the unemployed group and the employed group. Total score averages of the happy group are higher than the unhappy group in all five factors (Extraversion, Agreeableness, Conscientiousness, Emotional Stability, Intellect / Imagination). However, the results differ when happy and unhappy groups are predicted by logistic regression analysis using personality factor scores and socio-demographic characteristics. Agreeableness, Conscientiousness, Emotional Stability factor scores distinguished happy and unhappy groups in employees. On the other hand, among the unemployed, happy, and unhappy groups were distinguished by Agreeableness and Emotional Stability factor scores. Extraversion and Intellect / Imagination factors did not contribute to prediction in both groups. Conscientiousness differs in distinguishing happy and unhappy groups between employed and unemployed people. The results are discussed and implications for future research are provided accordingly.

**Keywords:** *Happiness, personality, employed, unemployed.*

### 1. Introduction

Happiness has been relatively neglected because phenomena such as anxiety and depression (in which unhappiness is at the forefront) are examined more intensively. However, although happiness is a relatively new phenomenon in the field of psychology, it is a subject that is being studied more and more every day and today it constitutes one of the main topics of positive psychology (Furnham, & Christoforou, 2007; Pishva, Ghalehban, Moradi, & Hoseini, 2011; San Martin, Perles, & Canto, 2010; Stewart, Watson, Clark, Ebmeier, & Deary, 2010). Happiness appears to be related to many variables such as the immune system, coping with stress, self-esteem, personal control, and longevity (Momeni, Kalali, Anvari, Raoofi, & Zarrineh, 2011; Salary, & Shaiery, 2013). Happiness, which includes the frequency and intensity of positive emotions, contributes to the improvement of physical and mental health, and increases overall success, business performance and income (Barak, & Achiron, 2009; Diener, 2000; Momeni, Kalali, Anvari, Raoofi, & Zarrineh, 2011; Oishi, Diener, & Lucas, 2009).

Research trying to explain the causes and consequences of happiness reveals that personality traits are the most important predictors of the phenomenon (Furnham, & Christoforou, 2007; Galea, Ciarrocchi, Piedmont, & Wicks, 2007; Lü, Wang, Liu, & Zhang, 2014; McCrae, & Costa, 1991; Salary, & Shaiery, 2013). Although different personality models are used to examine the relationship between

happiness and personality traits, it is understood that there is consistency in the research findings and the most widely used and accepted approach is the Five Factor Personality Model (Aziz, Mustaffa, Samah, & Yusof, 2014; Furnham, & Cheng, 1997; Furnham, & Cheng, 1999; Furnham, & Christoforou, 2007; Mayungbo, 2016).

When the Five-Factor Personality Model is used, happiness is seen to be positively related to the factors of Extraversion, Agreeableness, Conscientiousness and Openness to Development, and negatively to the Emotional Stability factor (Aziz, Mustaffa, Samah, & Yusof, 2014; Goldsmith, 2016; Hayes, & Joseph, 2003; Thingujam, 2015; Ziapour, Khatony, Jafari, & Kianipour, 2018). However, among the factors, Emotional Stability and Extraversion factors stand out as strong predictors of happiness (Cheng, & Furnham, 2001; Costa, & McCrae, 1980; DeNeve, & Cooper, 1998; Furnham, & Christoforou, 2007; Hayes, & Joseph, 2003; Tkach, & Lyubomirsky, 2006; Warner, & Vroman, 2011).

## 2. Methods

### 2.1. Participants

The participants of the study were those who worked in an income-generating job (n=258, 73.9%) and those who could not find a job as they wanted to work (n=91, 26.1%). Aid volunteers, students, retirees, housewives, etc. are not included in the unemployed group. The participants were between the ages of 18-77 (mean=31.69, n=1192) and 167 were women (47.9%) and 182 were men (52.1%).

### 2.2. Materials

In this study, short form of Oxford Happiness Scale and the Big Five Personality Test were applied. The short form of Oxford Happiness Scale was developed by Hills and Argyle (2002) and translated into Turkish by Dogan and Cötök (2011). Scale consisted of 7 items was administered as a 5-point Likert-type. Items 1 and 7 of this scale are reverse scored. The Big Five Personality Test consists of 50 5-point Likert-type items, 24 of which are reverse scored, and is evaluated with five factors: Extraversion, Agreeableness, Conscientiousness, Emotional Stability, Intellect / Imagination (Goldberg, 1992; Tatar, 2017).

### 2.3. Procedure and data analysis

The study was conducted in 2023 via a web-based form. Groups were compared with ANOVA. In addition, happy and unhappy groups were predicted by binary logistic regression analysis.

### 2.4. Results

In the study, first, participants were grouped as unhappy and happy groups according to the happiness scale total score average (mean = 3.61, s = 0.51). The participants below the average were defined as the unhappy (n = 159, 45.6%) and above the average as the happy group (n=190, 54.4%).

Table 1. Comparison results of happy-unhappy groups with ANOVA.

| Factors                 | Unemployed Group | n  | M    | s    | F        | Employed Group | n   | M    | s    | F        |
|-------------------------|------------------|----|------|------|----------|----------------|-----|------|------|----------|
| Extraversion            | Unhappy          | 55 | 2.97 | 0.62 | 4.67*    | Unhappy        | 104 | 3.02 | 0.59 | 17.88*** |
|                         | Happy            | 36 | 3.25 | 0.60 |          | Happy          | 154 | 3.39 | 0.73 |          |
|                         | Total            | 91 | 3.08 | 0.63 |          | Total          | 258 | 3.24 | 0.70 |          |
| Agreeableness           | Unhappy          | 55 | 3.47 | 0.64 | 30.21*** | Unhappy        | 104 | 3.50 | 0.61 | 58.32*** |
|                         | Happy            | 36 | 4.18 | 0.55 |          | Happy          | 154 | 4.09 | 0.61 |          |
|                         | Total            | 91 | 3.75 | 0.70 |          | Total          | 258 | 3.85 | 0.68 |          |
| Conscientiousness       | Unhappy          | 55 | 3.17 | 0.75 | 23.55*** | Unhappy        | 104 | 3.37 | 0.63 | 72.18*** |
|                         | Happy            | 36 | 3.93 | 0.68 |          | Happy          | 154 | 4.10 | 0.71 |          |
|                         | Total            | 91 | 3.47 | 0.81 |          | Total          | 258 | 3.81 | 0.77 |          |
| Emotional Stability     | Unhappy          | 55 | 2.82 | 0.66 | 35.57*** | Unhappy        | 104 | 2.85 | 0.61 | 85.94*** |
|                         | Happy            | 36 | 3.65 | 0.64 |          | Happy          | 154 | 3.62 | 0.69 |          |
|                         | Total            | 91 | 3.15 | 0.77 |          | Total          | 258 | 3.31 | 0.76 |          |
| Intellect / Imagination | Unhappy          | 55 | 3.44 | 0.72 | 3.61*    | Unhappy        | 104 | 3.34 | 0.59 | 33.06*** |
|                         | Happy            | 36 | 3.71 | 0.58 |          | Happy          | 154 | 3.80 | 0.65 |          |
|                         | Total            | 91 | 3.54 | 0.68 |          | Total          | 258 | 3.62 | 0.66 |          |

\*p < 0.05; \*\*\*p < 0.001

In the unemployed group, the happy group total score averages are higher than the unhappy group in four of the five factors (Extraversion, Agreeableness, Conscientiousness, Emotional Stability). Only in the unemployed group, there is no difference between happy and unhappy groups in the Intellect / Imagination factor score. There is a difference between the five-factor total scores of the happy and unhappy groups in the employed group. Total score averages of the happy group are higher than the unhappy group in all five factors (Extraversion, Agreeableness, Conscientiousness, Emotional Stability, Intellect / Imagination) (Table 1).

However, the results differ when happy and unhappy groups are predicted by logistic regression analysis using personality factor scores and socio-demographic characteristics. Agreeableness, Conscientiousness, Emotional Stability factor scores distinguished happy and unhappy groups in employees. On the other hand, among the unemployed, happy, and unhappy groups were distinguished by Agreeableness and Emotional Stability factor scores. Extraversion and Intellect / Imagination factors did not contribute to prediction in both groups. Conscientiousness differs in distinguishing happy and unhappy groups between employed and unemployed people. The results are discussed and implications for future research are provided accordingly (Table 2).

Table 2. Binary logistic regression analysis result for predicting happy-unhappy groups.

| Factors                 | Unemployed Group |      |       |    |      |        | Employed Group |      |       |    |      |        |
|-------------------------|------------------|------|-------|----|------|--------|----------------|------|-------|----|------|--------|
|                         | B                | S.E. | Wald  | df | p    | Exp(B) | B              | S.E. | Wald  | df | p    | Exp(B) |
| Extraversion            | 0.19             | 0.70 | 0.08  | 1  | 0.78 | 1.21   | 0.16           | 0.28 | 0.31  | 1  | 0.58 | 1.17   |
| Agreeableness           | 2.54             | 0.79 | 10.49 | 1  | 0.00 | 12.70  | 0.67           | 0.35 | 3.61  | 1  | 0.05 | 1.95   |
| Conscientiousness       | 0.77             | 0.58 | 1.79  | 1  | 0.18 | 2.17   | 0.98           | 0.28 | 12.32 | 1  | 0.00 | 2.68   |
| Emotional Stability     | 2.20             | 0.62 | 12.69 | 1  | 0.00 | 9.00   | 1.55           | 0.27 | 34.06 | 1  | 0.00 | 4.70   |
| Intellect / Imagination | -1.13            | 0.71 | 2.55  | 1  | 0.11 | 0.32   | 0.25           | 0.35 | 0.49  | 1  | 0.48 | 1.28   |
| Constant                | -16.56           | 4.07 | 16.58 | 1  | 0.00 | 0.00   | -12.20         | 1.67 | 53.38 | 1  | 0.00 | 0.00   |

### 3. Discussion

In this study, personality traits were used to predict happy-unhappy groups in employed and unemployed groups. In the study conducted using the five-factor personality model, different results were obtained from those obtained in previous studies. According to the results of previous studies, all factors in the five-factor personality model contribute to the prediction of happiness. However, many studies emphasize that among the factors, Emotional Stability and Extraversion are the factors that contribute the most to the prediction of happiness (Cheng, & Furnham, 2001; Costa, & McCrae, 1980; DeNeve, & Cooper, 1998; Furnham, & Christoforou, 2007; Hayes, & Joseph, 2003; Tkach, & Lyubomirsky, 2006; Warner, & Vroman, 2011).

In this study, although the happy-unhappy groups differ in terms of factor total scores, the results of the binary logistic regression analysis are different. Agreeableness and emotional stability are predictive factors in the unemployed group, and Agreeableness, Conscientiousness and Emotional Stability are predictive factors in the employed group. However, Extraversion and Intellect / Imagination factors do not contribute to either group. In this study, there is a need to repeat this research (and confirm the findings) due to reasons such as the difference between the numbers of employed and unemployed people and the small number of participants.

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# FACILITATING ACCULTURATION IN EDUCATIONAL SETTINGS: AN ANALYSIS OF POLICIES AND PRACTICES FOR SUPPORTING FOREIGN STUDENTS IN IRISH HIGHER EDUCATION

**Borui Zheng<sup>1</sup>, & Keegan Covey<sup>2</sup>**

<sup>1</sup>*Department of Asian Studies, University College Cork (Ireland)*

<sup>2</sup>*Department of Geography, Trinity College Dublin (Ireland)*

## Abstract

In an era of increasing global mobility, Irish higher education institutions (HEIs) have seen a significant rise in the enrolment of foreign students, necessitating a deeper understanding and enhancement of acculturation supports. This study applies a social psychological analytical approach to a qualitative content analysis of policy documents, teaching guides, and program descriptions across a representative sample of Irish universities. Using reported social trust and individual psychological well-being as parameters, it evaluates the inclusivity and effectiveness of these existing practices and identifies areas for improvement. The policy review found a broad spectrum of acculturation supports, ranging from formal policies and orientation programs to informal support networks and cultural exchange activities, although with significant variability in the scope and depth of support across institutions. Notably, the study finds a prevailing emphasis on administrative and logistical aspects of acculturation support, such as visa assistance and accommodation; these systems are found to have limited impact on psychological well-being and social trust when compared to classroom inclusivity practices. The analysis of teaching guides and curricular materials indicates a growing recognition of the need for culturally responsive teaching practices. However, there is a clear need for more structured training and resources to equip faculty with the skills to address the diverse needs of an international classroom effectively. The study also finds, based on prior studies and available survey data, that social trust, in particular “bridging trust” between identity groups and “vertical trust” between people and authority figures, are key to successful acculturation. Although ‘bonding’ trust between students of shared national origin is stronger than bridging trust, it also has a less positive correlation with psychological well-being than bridging trust, suggesting that students who have built relationships and social capital with others outside of their identity group are both most psychologically healthy and benefitting from acculturation. There is expected to be variation according to student nationality, as social trust is affected by the cultural and institutional context of students’ national origin. The preliminary findings of the study are thus that inclusive teaching practices are most effective in building social capital between students and both schools and Irish peers, which in turn heightens the psychological well-being of these students. However, established logistical-administrative supports also have a positive effect on vertical trust, which is likely to have a positive effect on foreign students’ academic performance. Greater emphasis is therefore recommended on standardising inclusive teaching practices in Irish HEIs.

**Keywords:** *Acculturation, foreign students, Irish higher education, inclusive education, social trust.*

## 1. Introduction

In recent years, the landscape of higher education has been significantly transformed by the forces of globalisation, leading to an unprecedented increase in the mobility of students across international borders. Irish Higher Education Institutions (HEIs) are no exception to this trend, experiencing a significant rise in the enrolment of foreign students (Darmody, Groarke, & Mihut, 2022). This demographic shift presents both opportunities and challenges, necessitating a re-evaluation and enhancement of supports for acculturation—the process by which individuals adjust to and become part of a new cultural environment. The importance of effective acculturation supports is underscored by research highlighting its impact on the psychological well-being and academic success of international students (Berry, 2005; Can, Poyrazlı, & Pillay, 2021; Smith & Khawaja, 2011; Yan, 2020).

This study employed a social psychological analytical approach to conduct a qualitative content analysis of policy documents, teaching guides, and program descriptions across a representative sample of Irish universities. The objective was to scrutinise existing frameworks of acculturation support, assessing their inclusivity and effectiveness through the lenses of reported social trust and individual psychological well-being. Social trust, particularly, serves as a key parameter, encompassing both “bridging trust” between different identity groups and “vertical trust” between individuals and authority figures, and plays a crucial role in the acculturation process (Wang, Zhi, & Yu, 2023; Ye, 2018).

By evaluating these supports, the study aimed to highlight the variability in the scope and depth of acculturation supports across institutions, and to identify areas that require improvement. The preliminary findings suggested a predominant focus on administrative and logistical aspects of acculturation, such as visa assistance and accommodation. However, these supports have been found to offer limited benefits to students' psychological well-being and social trust when compared to more inclusive classroom practices (O'Reilly, Ryan, & Hickey, 2010; Saffari Rad, 2023; Sebastian & Slaten, 2018). As Ireland continues to welcome an increasingly diverse student body, it is imperative that HEIs refine their acculturation supports to foster a more inclusive and supportive academic environment for all students.

## **2. Methodology**

This study adopted a qualitative content analysis approach to examine the acculturation supports available to international students in Irish Higher Education Institutions (HEIs). This methodology was well-suited to the exploratory nature of the research, allowing for an in-depth understanding of the policies, programs, and teaching practices aimed at facilitating the acculturation process for foreign students (Elo & Kyngäs, 2008; Hurley, Ryan, Faulkner, & Wang, 2022; Moran, Green, & Warren, 2021).

### **2.1. Selection of documents for analysis**

The corpus for analysis was carefully selected to represent a broad spectrum of acculturation supports across a diverse range of Irish universities. This selection included official policy documents, orientation program descriptions, and teaching guides, sourced directly from the universities' official websites, and through requests to institutional representatives. The aim was to capture both the formal and informal supports in place, recognising that acculturation extends beyond administrative procedures to encompass the academic and social integration of international students (Knox, Lim, Mahfouz, O'Connell, & Sheehan, 2019; Rienties, Beausaert, Grohnert, Niemantsverdriet, & Kommers, 2012; Smith & Khawaja, 2011).

### **2.2. Analytical approach**

The qualitative content analysis of this study was planned and executed to identify, analyse, and report patterns within the data. This methodological approach allowed for a nuanced understanding of the textual data gathered from policy documents, orientation program descriptions, and teaching guides from a representative sample of Irish HEIs. The analysis was anchored in a social psychological framework, focusing on acculturation processes, social trust dimensions (bridging and vertical trust), and indicators of psychological well-being.

### **2.3. Development of coding categories**

The coding categories were developed iteratively, starting with a pre-defined set based on the literature review and refined through a pilot analysis of a subset of the documents. This approach ensured that the categories were both grounded in theory and responsive to the data. The final coding scheme was applied to the entire data set, with adjustments made as necessary to capture emergent themes accurately. The coding categories are tabulated and described in detail, including definitions and examples, in *Table 1* as follows.

### **2.4. Application of coding categories**

The coding process involved reviewing each document for instances that exemplified the described categories. For example, any mention of initiatives aimed at integrating international and local students, such as buddy systems or joint cultural events, was coded under "Bridging Trust." Similarly, descriptions of faculty development programs on cultural sensitivity were coded under "Inclusive Teaching Practices." This systematic approach enabled the research team to quantitatively assess the prevalence of different types of acculturations supports across Irish HEIs and to qualitatively evaluate their depth and effectiveness. The findings from this analysis provided a detailed picture of the current landscape of acculturation support in Irish higher education and informed the recommendations for enhancing these supports.

Table 1. The coding categories.

| Category                              | Definition  | Examples   |
|---------------------------------------|---|--|
| Bridging Trust                        | Supports that facilitate trust-building between international students and their Irish peers.         | - Language exchange programs<br>- International and local student buddy systems                |
| Vertical Trust                        | Supports that foster trust between international students and institutional authorities.              | - Accessible grievance mechanisms<br>- Transparent communication from administration           |
| Psychological Well-Being              | Indicators and supports related to the mental and emotional health of international students.         | - Counselling services tailored to international students<br>- Stress management workshops     |
| Acculturation Support                 | Policies and programs designed to assist international students in adjusting to the new culture.      | - Orientation programs detailing Irish culture<br>- Guides on navigating academic expectations |
| Inclusive Teaching Practices          | Teaching methods and curricular designs that address the needs of a culturally diverse classroom.     | - Multicultural curriculum content<br>- Training for faculty on cultural competency            |
| Administrative and Logistical Support | Services dealing with the logistical aspects of studying abroad, such as housing and visa assistance. | - On-campus accommodation assistance<br>- Visa application guidance                            |

### 3. Finding

The qualitative content analysis of policy documents, teaching guides, and program descriptions from a representative sample of Irish Higher Education Institutions (HEIs) revealed a broad spectrum of acculturation supports, as well as gaps in formal acculturation training. These supports vary widely in scope and depth, reflecting a diverse approach to integration and well-being of international students. The findings were categorised into several key areas within the coding categories previously outlined.

#### 3.1. Bridging trust

The analysis identified a number of initiatives aimed at building bridging trust between international students and their Irish peers. These initiatives include language exchange programs, cultural sharing events, and buddy systems designed to facilitate mutual understanding and friendship (Darmody et al., 2022). Despite these efforts, the effectiveness and application of such programs in creating sustained interactions was inconsistent across institutions. Some programs were highly structured and well-received, promoting significant interaction between diverse student groups (Cleary, Graham, Jeanneau, & O'Sullivan, 2009; Institute of Education, 2024; Lowry, 2017), while others lacked the necessary resources or institutional support to achieve their objectives (Knox et al., 2019; Sheridan, 2011; Smith & Khawaja, 2011).

#### 3.2. Vertical trust

Supports aimed at fostering vertical trust between international students and institutional authorities were found to predominantly focus on administrative assistance, such as visa processing and accommodation services. While these services are undeniably important, our findings suggest that they contribute minimally to the development of vertical trust. Institutions that offered regular, transparent communication and accessible grievance mechanisms reported higher levels of trust from international students (Amara, 2020; Carbajosa, Morgret, Spencer, & Hameister, 2022). These mechanisms are critical not only for students to navigate the academic bureaucracy of foreign countries of study, but also for feeling supported and welcomed by their institution and, by extension, by the host country.

#### 3.3. Administrative and logistical support

As an extension of and contributor to the above, administrative and logistical supports were found to be well-established across the sampled institutions. These supports are crucial for the initial stages of acculturation, providing international students with essential information and assistance regarding visa regulations, accommodation, and enrolment processes (Kristiana, Karyanta, Simanjuntak, Prihatsanti, Ingarianti, & Shohib, 2022). While these supports are valued by students for easing their transition, they do not, in isolation, contribute significantly to the deeper aspects of acculturation, such as social integration and psychological adaptation and well-being, as elaborated upon below.



### 3.4. Psychological well-being

The study highlighted a growing recognition of the need for mental health and well-being supports tailored to the unique challenges faced by international students. Services such as counselling, stress management workshops, and social support groups were noted. However, the availability and accessibility of these supports varied significantly, with some institutions offering comprehensive mental health services and others providing minimal or ad hoc support (Sakız & Jencius, 2024). The disparity in support services underscores the need for a standardised approach to psychological well-being across HEIs (Forbes-Mewett, 2019).

### 3.5. Inclusive teaching practices

There is an emerging commitment to culturally responsive teaching practices among Irish HEIs, as evidenced by the incorporation of multicultural content in curricula and the provision of training for faculty on cultural competency (Darby, 2022). Nevertheless, the study finds that these initiatives are often sporadic and not systematically integrated into faculty development programs. The lack of structured training and resources for faculty members to effectively address the diverse needs of an international classroom remains a significant gap (Howe & Griffin, 2020).

## 4. Discussion

The analysis within Irish Higher Education Institutions (HEIs) highlights the complexities of creating an inclusive environment for international students, emphasising the necessity of balancing logistical support with social and emotional needs for effective acculturation. Despite the recognition of culturally responsive teaching and mental health support, the inconsistency in their implementation underscores a need for standardised practices and resources to ensure all students benefit from comprehensive acculturation support. This would improve the acculturation experience for international students and enrich the educational environment for all by promoting diversity and inclusivity.

Findings indicate that the effectiveness of programs designed to foster interactions between international and local students varies greatly, pointing to the importance of standardising practices that encourage meaningful connections to enhance psychological well-being and academic success. Additionally, the establishment of trust with institutional authorities through transparent communication and accessible grievance mechanisms is crucial yet insufficient on its own to meet broader acculturation needs. The study suggests that, while such logistical supports are essential, there is a clear need for a more balanced approach that also prioritises the psychological well-being and social integration of international students through bridging trust and inclusive teaching practices. It thus recommends policies that promote a more holistic acculturation approach, standardise initiatives to build inter-community relationships, enhance transparency and student engagement, and implement faculty development programmes on and training for culturally responsive teaching.

## 5. Conclusion

This discussion highlighted the complexity of acculturation support within Irish HEIs, underscoring the need for a comprehensive approach that addresses the varied needs of international students. There is a clear need for a deeper surveying of HEI international student psychological well-being, to be conducted alongside deployment of a more standardised and comprehensive programme for acculturative practice. By moving beyond administrative and logistical support to prioritise social integration, psychological well-being, and inclusive teaching practices, HEIs can enhance the acculturation experience for international students, contributing to their success and the richness of the educational community.

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## **EXPLORING THE CURRENT CRISIS OF MASCULINITY AND RISE OF FEMINISM AMONGST YOUNGER YOUTH**

**Sheel Chakraborty**

*Grade 11 Student, Fulton Academy of Virtual Excellence (USA)*

### **Abstract**

The recent exponential rise in popularity of masculinity and feminism among young adults such as Millennials, Gen Z, and Gen Alpha could soon be a concern for the current generation. It is important to understand the reasons for such polarity in teens' thinking and how a balance can be restored so future generations are raised with viewpoint neutrality. Studies reveal a remarkable trend: women are making significant strides in primary and secondary education, higher education, careers, friendships, and innovations. Throughout the known history, masculinity has often taken the lead in driving major revolutions in almost all aspects of human civilization. Over the last half century, around the world, esp., in Westernized countries, governments have actively promoted and encouraged women's education, workforce participation, and independence to foster a sense of equality. The outcome has been phenomenal, women outnumbering men in many areas of achievement. As encouraging as it may be, it is equally concerning for the sociologists because men are falling behind in their part of the contribution to the modern society. Studies show that in elementary school boys get into trouble significantly more than girls and are more likely to be disciplined. Also, more boys are being diagnosed with social anxiety disorders in their early childhood. Medical science correlates that men who suffer social anxiety in their childhood are more likely to be diagnosed with substance abuse and antisocial personality disorder. I observed in school, and in social scenarios, that many young boys feel that they are "controlled" and cannot express or act naturally. They grow timidly and are afraid of being frequently socially judged if not faced with repercussions. This I believe starts from elementary school. This hypothesis I expanded into a 15-questionnaire survey with 272 respondents. The survey targeted towards young men and women ages between 12-30. These questions delved into the topics of their upbringing environment, education, family life, parts of childhood, and relationship experience along with their attitude towards masculinity and femininity. The focus of this research is to explore how young adults are suffering from the crisis of identity and purpose today and how this can impact their life and society at large. It is important to point out that man and woman isn't zero-sum: an intimate collaboration is required for a brighter future where boys and girls can grow up freely and to their full potential.

**Keywords:** *Masculinity, feminism, social progression, education, youth, relationships.*

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### **1. Introduction**

I'm an 11<sup>th</sup> grade student, and as I learn more about my childhood and understand in a more scientific fashion, I can clearly state that I was a datapoint of being outcasted in social settings, primarily because of a speech delay and context interpretation issues. Often a child's mind sees things in an emotional way and misunderstanding can grow gaps between friends and family members. During my pre-teen years, my father travelled widely to build the family's stability, and I believe that led me to question my masculinity growing up as well as my ability to prove my value to my surroundings. From an adults' standpoint, the finer details of a child's mind are often overlooked. However, I wanted to understand if what I felt is common today and is a reason for why so many young adults gravitate around the icons of masculinity and femininity. Despite being raised in an integrated family where both my parents and my older sister truly cared for me, I felt a need to fall back on social media.

According to 2023 Census Bureau statistics, 23% of US children grow up with a single parent. These children lack consistent interaction with both a father and a mother, leaving them vulnerable and questioning their ability to trust. Consequently, forging friendships becomes an uphill battle. I realized their situation is significantly worse than what I faced. I know this can make them feel lonely and unmotivated towards academics or co-curricular activities, spiraling them downward making them more

insecure about themselves. The current trend of loneliness amongst teens and the rise in popularity for feminism and masculinity prompted me to do this exploratory research. My analysis attempts to connect personality traits and experiences of the vulnerable youth, and how they can become susceptible to social media trends shaping their minds, beliefs, and opinions in our modern society.

### **1.1. Young women strive better than men in current educational & social system**

Research published from Harvard University indicates that in the coming years, there will be a ratio of 2 female graduates to 1 male graduate from higher education institutions (Goldin et al., 2006). Evidence today show that women have been outperforming in higher education and in many other fields. This is an extremely encouraging news for the women of our generation, but it needs to be understood why young men are not adequately performing in today's education system. Ideally, an elite, thriving society should aim for a 1-to-1 ratio between men and women in education and in all other contributions towards progress. Research also shows that boys are 25% more likely to be suspended than girls in public schools. This disparity highlights the trend of boys being disciplined more which can distort their mental growth and curb confidence. On top, today young boys in larger proportion are diagnosed with learning disabilities, disorders, and are more prone to be on prescribed medications for disorders like ADHD or OCD which may hinder their long-term performance (Freeson et al, 2019).

The public school system has never been the best in fulfilling my needs and I can align with most of the above research findings. I started getting demotivated in school as soon as I grew up enough to understand that I was being ignored and I did not have trusting friends in school. It made me lonely, depressed, at times purposeless and even more introverted. At the same time, I observed that girls tend to excel within this system. Many a times their natural tendencies and abilities were sufficient for them to earn accolades. They exhibited exemplary behavior, studied diligently for extended periods, mastered information through intense cramming, maintained focus while sitting still, and consistently achieved good grades. These were areas where girls outperformed boys significantly; their success made me happy, but it also reminded me that I was not adequate for excelling in the US public school system till Covid-19 pandemic hit and I was enrolled in a virtual school. I started excelling in virtual education, not only in academics but also in overall personality development including social skills (Chakraborty, 2023).

As I grew up more, I realized that I am not alone. I figured the modern education system is more congenial for femininity to excel in major strides, however, imposes disadvantage for young men esp., in early education. The education system must recognize that in early childhood, boys and girls take different paths to develop their minds and personalities. The school system should allow both paths to foster development - naturally and unhindered.

In the society at-large, women also seem to be faring better than men. Over the past centuries, the traditional gender roles often depicted men as breadwinners who went to work to support the family economically, while women stayed at home as caretakers for their families. That system is near extinction today. During World War II, the United States championed the iconic figure of "Rosie the Riveter", encouraging young and teenage girls to be independent, enter the workforce, and contribute as successful mothers for their families (Vergun, 2019). From then the change continued. The recent MeToo movement, as highlighted by the Pew Research Center, sheds light on the poor sexual treatment of women in the workplace and other dangerous issues faced by women in modern society. These are important issues to tackle and major milestones for uplifting and equalizing women in society. The statistics show the positive effects. In many cases, women are becoming more economically stable than men by pursuing high-end careers and becoming a role model for promoting independence among young girls and women. From the outside, this looks like a huge achievement for our civilization, but it also comes with a cost. Most families today have both parents as bread-earners, outsourcing the upbringing of their young children to external facilities such as daycare. As pointed out in my earlier research work, this practice can affect introverted boys negatively (Chakraborty, 2024). Contrary to how a progressive society should focus, it seems to me the current social trend takes a fragmented approach and is engrossed in a narrow vision of tackling adults' perceived issues of equality rather than thinking in long term for the future generation. The marriage rate is down, divorce rate is high, many families choose not to have children and in this mix of adult's agenda of personal stride, young children who are shy and loner in nature suffer the most. The issues become way more complex when social media influences are brought into the picture.

### **1.2. The rise of extremist role models on social media and interference on well-being**

In the realm of family dynamics, 10.9 million children under 18 live in single-parent households, 23% of U.S. families are single parents, out of that 23%, 80% of these families led by single mothers. Regrettably, many children lack a close relationship with their biological fathers, presenting a significant challenge for their early-life hand holding need, leaving a long-term impact on their mind (Kramer, 2019). The adult men are equally suffering today. A study conducted in 2021 revealed that 1 in every 7 men lacks close friends—meaning they lack companionship for conversations, activities, weekend calls, or even simple outings to the park (Galloway, 2021). Loneliness creates depression and brings a sense of

failure. The statistics show men’s suicidal thoughts have increased alarmingly from 3.5% in 2008 to 4.5% in 2021 (Vankar, 2023)

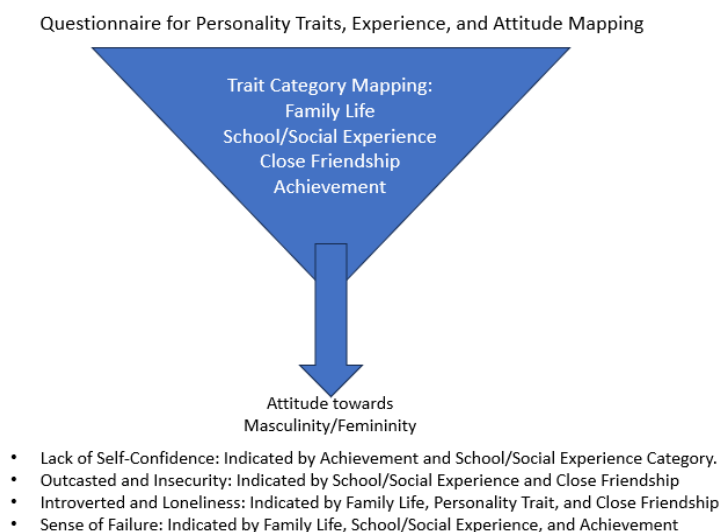
These reasons may play a relation on why crime rates have significantly increased among young men. Men are 9 times more likely to commit a crime than women. According to the FBI in 2019, around 73% of US citizens who got arrested were men, but digging deep into the crime records, specifically in school shootings, over 94% of the perpetrators were young men. Out of that 94%, 32% of the young men were ages 19-24 (FBI, U.S. Department of Justice, 2023). I can observe that for these school shootings, a lot of these young men perform these acts as a sense of grievance. Their upbringing and experience often make them bitter about society and the education system, making them feel worthless and friendless. Could this be the reason why many decide to commit these heinous crimes? The solution may simply be kindness, care, and association time of adults when the kids need it in childhood, not candy and praise for the kids for doing mediocre work. I do not see how law enforcement can provide a solution to school shooting if the problems lie in early education system and broken families.

Growing up with an iPhone and consistent social media exposure, my generation of young men face a lot of information about the masculinity crisis and feminism. This is a new challenge that the young generation must grapple with. Both young men and women tend to gravitate towards the icons of masculinity and feminism to find hope and ways to come out of despair. Many adopt unhealthy and insecure approaches in the name of self-improvement. Social media plays a significant role in forming cult-like culture for the impressionable Generation Z children, especially those raised by single parents. Lacking a proper father or mother figure, they turn to content creators on social platforms for relatability. For example, Andrew Tate, a former kickboxer turned influencer, gained notoriety for promoting his course, ‘Hustlers’ University.’ However, over 100,000 members reported being scammed (Tahsin & Shea, 2023). Tate’s toxic ideology includes controversial views on women, wealth, and education (Sinmaz, 2023). Similar trends can be seen among women who follow the icons for feminism.

## 2. Objectives and methodology

Based on the above trend observations, I formulated my hypotheses that young adults who are born introverted, lack self-confidence and are outcasted in school or social settings, find little or no purpose of their life or have grown a sense of failure are likely to be victims of the social icons of masculinity or feminism. To test my hypothesis, I created 2 surveys which targeted the ages of 12-22 and each had 18 questions. The surveys received a total of 272 responses, with 136 being men and 136 being women. Most of the data was collected electronically, and some are carried out in person. The 15 “Masculinity/Femininity Mentality” questions were organized in a way so the responses can point to some measures of the following traits or life experiences, e.g., “Lack of Self-Confidence”, “Outcasted and Insecurity”, “Introverted and Loneliness”, and “Sense of Failure” and connect with their attitude towards the masculinity or feminism subscription. The questions were intertwined and overlapping cleverly between trait categories, experiences, and their attitudes so response-biases can be minimized. The funneling technique is shown in the figure below.

Figure 1. Survey questions and category funneling.



The answers to the survey questions generated an ordinal data set which is not quantitative enough for deriving a meaningful correlation coefficient but can give a sense of ‘preference order’ alongside a qualitative relationship between the trait, experience, and preference. That is why I present my results in various comparative graphs rather than using a Pearson or Spearman correlation coefficient.

### 3. Result interpretation

This survey was targeted towards the modern youth who experienced or are experiencing the US education system whilst living the United States lifestyle. Additionally, it addressed how they felt about the rise in masculinity or feminism in modern society. 72% of people who took this survey were either high-schoolers or college students. As shown in Figure 2, 28% of young men were Asian or Pacific Islander, 22% were Other/Mixed, 22% were African American, Caucasian, or Middle Eastern contributed to roughly 15-16% each. 74% belonged to the age groups of 16-22. I point out that the survey was not discriminatory and was floated to all, but those who chose to take the survey could be the ones who felt connected to the issue which I had no control over.

Figure 2. Survey details e.g., total demography, age group, education levels.

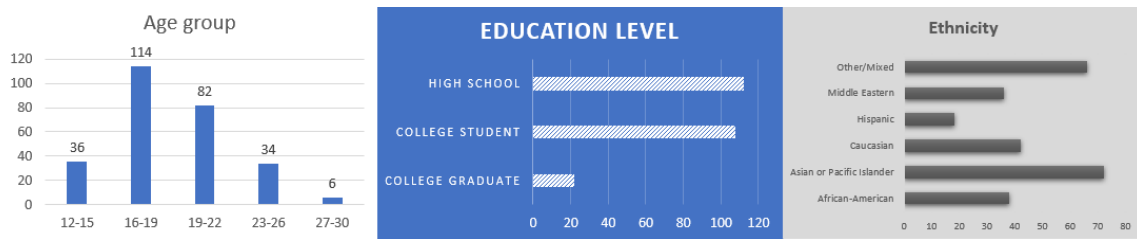
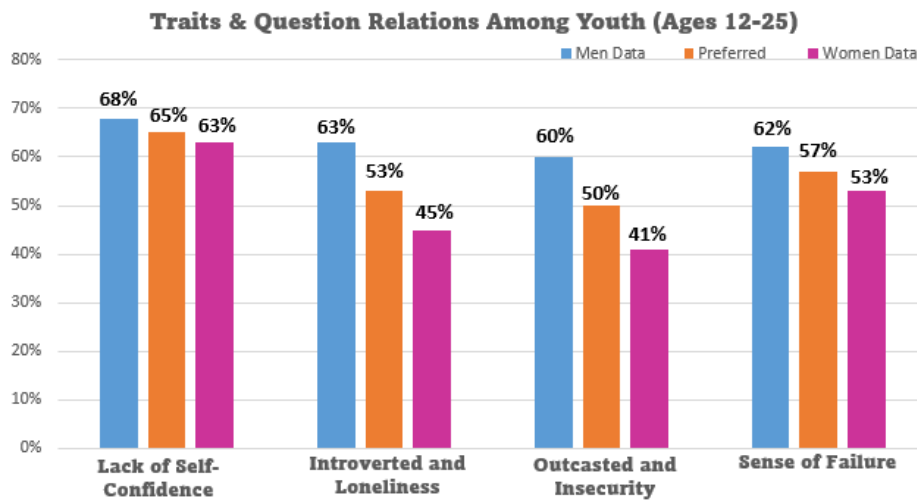


Figure 3 below presents intriguing observations. All those who supported the need of masculinity or feminism when grouped by the four trait categories display the following percentages. The blue bar represents data from young men, whereas the pink bar corresponds to young women. The orange bar signifies the mean percentage of responses from both genders. In all cases, the young men showed a higher percentage than young women when it came to these traits. For example, 68% of men who supported rise in masculinity displayed lack of self-confidence, alongside 63% that are introverted, 60% who felt outcasted, and 62% who have a fear of sense of failure. In contrast to that 63% of women who favored the rise in feminism showed lack of self-confidence, 45% that are introverted, 41% who felt outcasted and 53% had a sense of failure.

Figure 3. Trait and Question Relation Statistics.



If we can trust the survey results as representative of today’s young adult society, we can have significant learning from this. Looking at the percentages, it seems that the “lack of self-confidence” is the prime driver for young adults to gravitate towards masculinity or feminism followed by the “sense of failure”. These two characteristics are independent of gender that means “lack of self-confidence” or

“sense of failure” cause both genders equally to find support in masculinist or feminist views. However, “introverted and lonely” as well as “outcasted and insecure” young men tend to be more ready to gravitate towards masculinity icons more than their gender counterpart. This is an important distinction that may also correlate to why we see increased gun-violence in schools by young men. Much of this may stem from their loneliness and a perception that was built in school of being outcasted or bullied. In addition, many young men may even believe that the school system ruins their future than building it.

The study makes an even bigger claim: The young men and women who grow up thinking their growth is marginalized by the other gender can never make a successful home and will be incapable of raising kids with neutral and sympathetic viewpoints towards the other gender. This divides society in a very wrong way.

Former President of India, Abdul Kalam in his European Union address in 2007 referred to a 3000-year-old Indian scripture that said, “Where there is righteousness in the heart, there is beauty in the character. When there is beauty in the character, there is harmony in the home. When there is harmony in the home, there is order in the nation. When there is order in the nation, there is peace in the world.” (Abdul Kalam, 2007). Human society should strive towards this goal.

#### 4. Conclusions

Though my sample data sets were limited, the preliminary research presented here shows a strong link between lack of self-confidence and sense of failure with positive preference towards the rise of masculinity and feminism. These traits affect both genders equally however, introverted, and lonely young men who experience being outcasted in school or society are more susceptible towards extremism than young women. This could also explain the rise in trend in school shooting, substance abuse as well as personality anxiety disorder.

I extend my thanks to my close friends at my school Fulton Academy of Virtual Excellence (FAVE) my local gym, and to those unknown to me who took the survey electronically and helped me prepare this research.

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## DEPICTION AND DESCRIPTION OF WAR AND PEACE: A PILOT STUDY

**Kristi Kõiv, & Liis Leilop**

*Institute of Education, University of Tartu (Estonia)*

### Abstract

The aim of this study is to reveal adolescents' depiction and description of peace and war through drawings and semi-structured interviews. The study is a pilot study evoking two research questions: *How do adolescents reflect peace and war in their drawings?* and *How do adolescents reflect their opinions about peace and war?* Participants included 25 volunteer adolescents (12 boys and 13 girls) aged between 12 and 15 in one Estonian school. The participant students were asked to draw a picture of war and peace (Egüz, 2020) and the analysis of drawings was coded based on the war and peace categories developed by McLernon and Cairns (2001). Group-based semi-structured interviews were conducted about peace and war according to the adapted methodology (de Souza et al., 2006) and students' responses were analyzed using qualitative content analysis. Students used peace and war icons and symbols as interpersonal peace and absence of conflict in their drawings. In the interviews, the meaning of peace and war was defined as a social phenomenon between people and between countries. The students described war as conflict or violence and peace as in negative peace (absence of conflict) or positive peace (social justice). The analysis of drawings revealed that female students were more likely to depict emotions anger, sadness, happiness than male students. The male students however used more elements of weapons and elements like dead bodies or blood in their pictures to express war. Research on students' conceptualizations of war and peace is essential to the development of education programs in the field of social studies at the curriculum level.

**Keywords:** *Conceptions of war and peace, students' drawings, group interview, pilot study.*

### 1. Introduction

War and peace influence children globally, whether it be through visuals on the media or because they are directly in contact with war activities in their near and far environment (Hakvoort, 1996). The understanding of war and peace in children has been developmentally researched and it has been found that children first develop an understanding of what war or conflict is. The definition of positive and negative peace (Hakvoort & Oppenheimer, 1998), where positive peace refers to active co-operation among groups and negative peace is defined as the absence of conflict, develop later on in childhood (Cherney et al. 2006; Hakvoort, 1996; Hakvoort & Häggglund, 2001; Hakvoort & Oppenheimer, 1998; Jabbar & Betawi, 2019; Kose & Bayir, 2016; McLernon & Cairns, 2001; Oppenheimer & Kuipers, 2003). First understandings of war and peace have become evident in 6-8-year-olds, where the verbalization of war precedes the definition of peace (Hakvoort, 1996). Previous research has used questionnaires (McLernon & Cairns, 2001); group-based interviews (de Souza et al, 2006; Hakvoort & Oppenheimer, 1998) and art-based drawings (Egüz, 2020; Özgür, 2015, Walker et al., 2003) about the conceptualization of war and peace among younger and older schoolchildren. Although there is a long research history in understanding of children's and adolescents' understanding about peace and war in different cultural contexts (Hakvoort & Oppenheimer, 1998), this research topic is actual in the present day cross countries. While some of the previous research had studied children who have been in direct contact with war (Jabbar & Betawi, 2019), the others have used samples where the participants have not been in direct contact with war activities (Hakvoort, 1996). Myers-Bowman et al. (2005) have compared children's responses with different experiences where children with less or no contact with war activities describe peace verbally more as prosocial behavior and the children with direct contact with war more as negative peace, as when there is no war/conflict. Less common is the simultaneous use of both discussion and drawings in the conceptual study of peace and war (Egüz, 2020) among students.

The aim of this study is to reveal students' depiction and description of peace and war through drawings and semi-structured interviews. Two research questions were posed: *How do adolescents reflect peace and war in their drawings?* and *How do adolescents reflect their opinions about peace and war?*



## 2. Methods

### 2.1. Sampling and research methods

The study follows a qualitative research design as a descriptive pilot study. The sample consisted of 25 students (12 boys and 13 girls) who were included in four groups in one of the Estonian schools as a convenience sampling. The research procedure consisted of two parts using two research instruments: (1) semi-structured interviews about peace and war according to the adapted methodology (de Souza et al., 2006), and (2) drawing of pictures about war and peace based on the art-based methodology (Egüz, 2020).

### 2.2. Data collection and procedure

For the study, at the end of the academic year 2022/2023, the data was collected via students' group-based interviews and artistic drawings. Permission to participate was obtained from parents and the school principal before data collection. The volunteer students with permission were informed that taking part in the research would not affect their daily routine or any marks given in class and that the responses would remain confidential and anonymous. The semi-structured interviews were carried out in four small (6-7 students) groups. The room was set up to be quiet and comfortable in the school area. Each group was presented with the same open-ended questions using the same research instrument developed by de Souza et al. (2006). The questions were translated for the pilot study, whereby the linguistic validation included the phases of translation and back translation of the questions: *How would you explain what war is to a friend?; What is going on when there is war?; Who do you think is responsible for war?; How would you explain what peace is to a friend?; What is going on when there is peace?; Who do you think helps most to make peace?.* During the semi-structured interview lasting about half an hour, open-ended questions about war and peace were asked and students were encouraged to discuss the topic freely.

After the interview the students were instructed to draw two pictures. Each participant was given an A4 size paper sheet that contained two prompts (war and peace): *What does war mean to you? Draw the first image that comes to your mind, and What does peace mean to you? Draw the first image that comes to your mind,* based on methodology used by Egüz (2020) with validation of quality of translations of the questions by translation/back translation method. The participants had about 25-30 minutes to draw, and then the procedure ended. The drawings were numbered and coded. If any students wanted to ask questions about the research or the procedure, they had the chance to do so.

### 2.3. Data analysis

After the pictures were gathered from the participants, the symbols, figures and colors in them were listed in accordance with the participants, marked by code. The analysis of drawings was coded and categorized based on the war and peace categories developed by McLernon and Cairns (2001) and categorized qualitatively.

Inductive content analysis was used to analyze the data gathered through transcribed interviews in the evaluation of keywords, meanings, and themes during the data analysis: the data was grouped and re-linked in order to find recurring themes in the definitions of war and peace, as stated by the participants. Also, the responses of boys and girls were categorized separately.

## 3. Findings

### 3.1. Findings of drawings

Based on the research question *How do adolescents reflect peace and war in their drawings?* and previous research on the topic, the participants' responses were grouped into two main categories war/peace and from there on to subcategories as in McLernon and Cairns (2020).

In drawings it appears that the average number of elements in war drawings is for both male and female participants 7, and the average number for items in peace-related drawings is 4. This agrees with previous research which states that children's comprehension of war precedes peace and therefore the drawings are less nuanced (Hakvoort & Oppenheimer, 1998).

When analyzing the drawings of males and females (Table 1), the emerging themes are mainly similar and agree with previous studies (e.g., Egüz, 2020; McLernon & Cairns, 2020). A difference in drawings between male and female participants was revealed in the depiction of emotions – female participants depict emotions like joy, sadness, anger, fear in facial expressions and speech bubbles in most of their drawings, male participants rarely depict emotions in such a manner. Emotions can be found in male drawings about war where the figures have screaming or angry expressions, although many male drawings have figures without facial features at all.

The categories that agree with previous (e.g. Egüz, 2020; McLernon & Cairns, 2020) studies when looking at drawings about war are universal like different human aspects like soldiers, citizens, dead bodies, symbols like the anarchy symbol, crosses, skulls, war activities like shooting, killing, crying, explosions, negative consequences of war like destroyed houses, blood puddles, burning buildings, natural landscapes that depict places where battles take place, emotions varied from joy to anger and sadness, instruments of war that were represented, were tanks, guns, bombs. While in previous research more universal symbols like the peace dove or the olive branch were depicted (Egüz, 2020; McLernon and Cairns, 2001), in this study, those were not evident. National symbols in drawings about war were flags that had to do with the current conflict in Ukraine.

Table 1. Categories and sub-categories emerging from drawings about war and peace.

| Category                    |  | Sub-category       |  | Male: Examples of Key Codes  | Female: Examples of Key Codes   |  |  |
|-----------------------------|--|--------------------|--|--|---|--|--|
| War                         | Negative war   | Universal          | Human aspect   | <i>Soldier without face, fist, citizens, tears, dead bodies, opposing sides, screaming people, people in trouble, sad figures.</i> | <i>Soldier without face, sad figures, dead bodies, surrendering people, sad head of state, sad nation, happy head of state, fighters.</i> |  |  |
|                             |  |                    | Symbols  | <i>Anarchy symbol, onions, cross, hammer and sickle, swastika, skull.</i>  |   |  |  |
|                             |  |                    | War activities   | <i>Shooting, crying, shouting, cursing, showing a fist, air raid, nuclear explosion, conflict between people.</i>                  | <i>Explosion, shooting, screaming, burning.</i>   |  |  |
|                             |  |                    | Negative consequences of war   | <i>Destroyed house, blood puddle, barb wire fence, burning buildings, apartment building.</i>                                      | <i>Burning building, crossed out house, blood puddle, building, burning house, cry for help.</i>  |  |  |
|                             |  |                    | Natural landscapes   | <i>Battlefield, landscape, mountain.</i>   | <i>Sad sun, grass, fire, black ground, storm cloud, smoke.</i>  |  |  |
|                             |  | Emotion            | <i>Cursing, tears, crying, laughing people.</i>  | <i>Fear, sadness, anger, vengeance, conflict, joy, surrendering, depression, regret, innocence, emptiness.</i>                     |   |  |  |
|                             |  | Instruments of war | <i>Gun, automatic weapon, tank, helicopter, plane, shooting, bomb, nuclear weapon.</i> | <i>Plane, bomb, cannon, gun, tank, automatic weapon, knife, nuclear weapon, bullet.</i>  |   |  |  |
|                             |  | National           | Flag   | <i>US flag, UA flag, RU flag, red flag, pink flag.</i>   |   |  |  |
|                             |  | Peace              | Positive peace   | Universal  | Symbol  | <i>Heart, kiss, hug, smile, holding hands.</i> | <i>Heart, smile, infinity sign</i>                               |
|                             |  |                    |  |  | Human aspect  | <i>Citizens, happy people, friends.</i>        | <i>Happy heads of state, happy child, smiling women, family.</i> |
| Natural landscapes          | <i>Park, trees, landscape, mountain, dog, blue sky, flowers.</i>   |                    |  |  | <i>Sun, blue clouds, snowflakes, flower, cats together, river, landscape, puddles, bloom.</i>   |  |  |
| Positive consequence of war | <i>Houses, statue</i>  |                    |  |  |   |  |  |
| Peace activity              | <i>Shaking hands, hugging, smiling, kissing, walking, sitting.</i> |                    |  |  | <i>Negotiation, making a snowman, making cookies, holding hands, hugging, playing ball.</i>   |  |  |
| Negative peace              | Universal  |                    | National   | Emotion  | <i>Joy, peace.</i>  |  |  |
|                             |  |                    | Symbol   |  | <i>No fighting, house, flower, house, deal, peace sign, infinity sign, white flag, globe, balance.</i>                                    |  |  |
|                             |  |                    | People   |  | <i>No expression, figures, happy girl.</i>  |  |  |
|                             |  |                    | Natural landscape  | <i>Trees, green grass.</i>   | <i>Blue sky, flowers.</i>   |  |  |
|                             |  |                    | Peace activity   |  | <i>Talking.</i>   |  |  |
| National                    | Item   |                    | <i>Smiling food, crown, plane, film.</i>   |  |   |  |  |
| National                    | Flag   |                    | <i>Ukraine, Russia.</i>  |  |   |  |  |

### 3.2. Findings in interview responses

The group-based semi-structured interview responses revealed that when speaking about war, the students refer to conflict: *It's like when two kindergarten children are having an argument but it's two countries; violence, ...when there's like planning and looking for shelter; panicking: when people are mass buying stuff in stores; and consequences of war: there's inflation, family members are missing, there's mobilization and men have to go to war.* The participants mainly discussed war through the activities that have happened during war and the negative consequences that can be seen from the outside. It is noteworthy that the participants have experienced war only indirectly through social media and contact with Ukrainian refugees at their school.

Female participants used more emotion-related vocabulary, in peace more positive emotions: *It's like when two kindergarten children are playing together,* and absence of conflict: *There is no need to protect your family* at an individual level, this agrees with Hakvoort (1996) longitudinal study (Table 2).

Table 2. Categories and sub-categories defining war and peace in discussion.

|       | Category       | Subcategory | Examples of Key Words  |
|-------|----------------|-------------|--|
| War   | Negative war   | Universal   | <i>Argument, conflict, invasion, mobilization, gathering weapons and machines, preparation, planning, panic of civilians, mass buying, inflation, fear, violence, verbal conflict, weapons, war machines, bombs, people are nervous, sanctuary is needed, worry, missing family, people dying, no toys, no peace.</i>  |
|       |                | National    | <i>Ukrainian war, Estonian War of Independence, power imbalance between Russia and US, NATO.</i>   |
| Peace | Positive peace | Universal   | <i>Good decisions are made, countries co-operate, caring for each other, heartfelt relationships, two friendly children, everyone gets along.</i>  |
|       | Negative peace | Universal   | <i>No conflict, something impossible, people live their lives, peaceful people, no worries, freedom, price control, higher population, good living standard, positive, no war, no one gets beat up, no global news on TV, no fear of bombing, no need to protect family and loved ones, get to be at home, you have a good head of state, breathe in and out, no need to hurt anyone, people calm, regular life, babies.</i> |

### 3. Conclusion

Based on the findings of this pilot-study it can be said that students were aware of war even when they were not directly involved in a conflict. In their drawings and verbal statements, respondents in this study associated war with group conflict, identified the violent activities and consequences of war with negative feelings – war was defined as an interpersonal and interstate social phenomenon. In depictions and descriptions of peace students used peace symbols as interpersonal peace and absence of conflict between people – peace was defined as a social phenomenon between people. While the results reveal that depictions and descriptions of peace and war were mostly similar between male and female participants, the findings demonstrate that female students were more likely to describe or depict emotions like joy, sadness, anger, fear, despair. At the same time male students depicted more weapons in their drawings.

However, further research is needed especially in the area of artistic studies, but a limitation of this qualitative pilot-study is the small scale of the sample, which does not allow generalizations on the subject. This pilot-study adds some information to other topical studies in various regions of the world.

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## THE ROLE OF LEADERSHIP SELF-EFFICACY IN DEVELOPING ACADEMIC AND PROFESSIONAL LEADERS

Kalliopi Selioti<sup>1</sup>, & Rania Abdalla<sup>2</sup>

<sup>1</sup>*Academic Services: Research & Impact, Kingston University London (UK)*

<sup>2</sup>*Kestria UAE & Aspire HR Consultants (Egypt)*

### Abstract

Self-efficacy refers to a person's confidence in his or her ability to take action, engage in tasks and achieve goals. It enhances career engagement, which is the proactive development of one's career through demonstrating career management behaviors. Leadership self-efficacy is defined as someone's confidence in leading groups and regulating group functioning towards goal accomplishment (McCormick, 2001). This study investigates the relationship between leadership self-efficacy and career engagement.

Primary data was collected in 2021 using a cross-sectional survey. Participants (n = 330) from the United Kingdom and the Middle East, predominantly Egypt, completed a questionnaire which included: the *Multidimensional Leadership Self-Efficacy Scale (LSE)* (Bobbio & Manganelli, 2009); the *Career Engagement Scale* (Hirschi, Freund, & Herrmann, 2014); and a set of demographic questions. To the researchers' knowledge, it was the first time that these psychometric instruments were administered in the Middle East region. Both scales showed very good reliability ( $\alpha = .93$  and  $\alpha = .90$ , respectively).

Results showed that there was a moderate positive correlation between leadership self-efficacy and career engagement ( $r = .38$ ,  $p < .001$ ). More specifically, higher levels of leadership self-efficacy were interrelated with higher levels of career engagement.

This study, which is a part of a research project applying an intersectional lens on leadership, highlighted the value of leadership self-efficacy in promoting career engagement. A positive interrelation between the two theoretical constructs was confirmed, reiterating their importance and usefulness for academic research and practical interventions.

**Keywords:** *Self-efficacy, leadership self-efficacy, career engagement, career management behavior.*

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### 1. Introduction

Successful performance in leadership roles has been associated with a perceived sense of high self-efficacy and an increased amount of effort as well as perseverance in the face of challenges (McCormick, Tanguma, & Lopez-Forment, 2002). Self-efficacy, a theoretical concept developed by Bandura (1977), refers to an individual's beliefs and expectations about his or her abilities, which influence the likelihood that this person will try and succeed in a given task or activity.

Self-efficacy enhances career engagement as people feel empowered through their achievements (Norman, Gardner, & Pierce, 2015). Ultimately, it predicts career success (Smidt, Kammermeyer, Roux, Theisen, & Weber, 2018). Hirschi, Freund, and Herrmann (2014) have defined career engagement as the proactive development of one's career through engaging in and applying a variety of career behaviors such as career planning, career self-exploration, environmental career exploration, networking, voluntary human capital development, and positioning behavior. Early career engagement has been related to more positive career outcomes in the longer term (Hirschi, Niles, & Akos, 2001). Therefore, it may be of strategic importance for one's professional pathway to positions of higher responsibility.

Leadership Self-Efficacy (LSE) has been broadly described as a form of confident judgment of one's competence in assuming a leadership role in a group, and demonstrating effective leadership behaviors (Bobbio & Manganelli, 2009; Paglis, 2010). According to Paglis and Green (2002, p. 217), "LSE is a person's judgment that he or she can successfully exert leadership by setting a direction for the work group, building relationships with followers in order to gain their commitment to change goals, and working with them to overcome obstacles to change". Leaders with reasonably high LSE not only accomplish their role successfully but they also drive collective efficacy and can be perceived as influential role models (Paglis, 2010).

Although there are mixed research findings, a number of studies show that there are gender differences in self-reported LSE, with women reporting lower scores and fewer leadership experiences (Bobbio & Manganelli, 2009; McCormick, 2001; McCormick et al., 2002). In addition, females tend to attribute their successes to external rather than internal causes (Huszczko & Endres, 2017). Further research is required to gain a deeper understanding of the underrepresentation of women in top-level positions (Samuelson, Levine, Barth, Wessel, & Grand, 2019) and also, to support the development and refinement of tailored interventions.

## 2. Objectives

This study explores the relationship between Leadership Self-Efficacy (LSE) and Career Engagement (CE). It also investigates possible gender differences for both LSE and CE. The hypotheses are outlined below.

- *Hypothesis 1:* LSE is significantly and positively related to CE; LSE promotes CE.
- *Hypothesis 2:* There are significant differences between the LSE means of males and females; it is expected that females will have lower LSE scores.
- *Hypothesis 3:* There are significant differences between the CE means of males and females; it is expected that females will have lower CE scores.

## 3. Methods

### 3.1. Participants and procedure

Primary data was collected in 2021 using a cross-sectional survey. The sample comprised 330 university students and adults who were working or seeking employment. The majority of respondents were based in the Middle East, predominantly Egypt, and the United Kingdom. Participants were professionals, academics, researchers and (mainly postgraduate) students. While this was a convenience sample, it was largely representative of a diverse community of students and also, of adults with an expressed interest in career development.

Most people who completed the survey received an e-mail invitation which contained a link to the online questionnaire. They were provided with a full written briefing of the research. They were asked for their consent and were informed about their right to withdraw at any time. Moreover, they were reminded that a good command of the English language was necessary to complete the survey. Questionnaires were available in an electronic format as well as in paper form, to facilitate inclusion. The survey was voluntary and anonymous, and it took approximately ten minutes to complete. Ethical approval was obtained by Kingston University (United Kingdom).

### 3.2. Instruments

Participants completed the Career Behaviors Survey on Qualtrics or in-person. The full questionnaire included: the *Multidimensional Leadership Self-Efficacy Scale (LSE)* (full version); the *Career Engagement Scale* (full version); and a set of demographic questions e.g. location, gender, ethnicity/ethnic group, age, level of education, long-standing health condition or disability etc. Both scales are valid and reliable.

The *Multidimensional Leadership Self-Efficacy Scale (LSE)* (A. Bobbio, personal communication, May 10, 2021; Bobbio & Manganelli, 2009), which assesses a general self-perception of LSE, was firstly administered to 372 university students and 323 non-student adults. The first version was created in Italian and it was then adapted to English. The scale contains 21 items and six facets with an acceptable factorial structure, measured with a 7-point Likert-type scale ranging from *absolutely false* to *absolutely true*. The six facets are: starting and leading change processes in groups; choosing effective followers and delegating responsibilities; building and managing interpersonal relationship within the group; showing self-awareness and self-confidence; motivating people; and gaining consensus of group members. An example item reads: "I am able to change things in a group even if they are not completely under my control". For the computation of the total LSE score, each individual's item scores are summed and divided by the total number of items in the scale. Higher scores represent higher LSE.

The *Career Engagement Scale* (Hirschi et al., 2014) measures diverse self-directed career management behaviors and contains 9 items. Items were administered using a 5-point Likert-type scale, ranging from *not much* to *a great deal*, used to indicate the extent to which someone was engaged in a career-related activity during the past six months. An example item is: "Actively sought to design your professional future". For the computation of the total CE score, each individual's item scores are summed and divided by the total number of items in the scale. Higher scores represent higher CE.

## 4. Results

### 4.1. Main descriptive statistics

Nearly two-thirds of the participants were women (Gender: Female 62%, Male 36%). Half of the sample consisted of Arab people (Ethnicity: Arab 52%, White 25%, Asian 11%, Mixed 7%, Black 3%). There was a good representation of all age groups, with around 59% of people aged 40 and above (Age group: 18-29y 25%, 30-39y 17%, 40-49y 25%, 50-59y 31%, 60-77y 3%). More than 90% had completed at least one academic degree (Level of Education: High School 5%, Diploma 3%, Bachelor’s degree 44%, Master’s degree 39%, PhD or higher 8%). Almost 8% declared a long-standing health condition or disability (Health condition/Disability: No 90%, Yes 8%). The aforementioned proportions may not total 100 due to not including the results for responses such as “Other” and “Prefer not to say”.

### 4.2. Reliability tests (Cronbach’s alpha)

The reliability of each scale was tested. The LSE scale showed very good reliability ( $\alpha = .93$ ) and so did the CE scale ( $\alpha = .90$ ).

### 4.3. Factor analysis (principal components analysis)

Factor analysis with oblique rotation (oblimin) was conducted on the scales to examine factor loadings, i.e. the relationship between each item and each expected factor, and to confirm consistency with previous research in other countries. The Kaiser-Meyer-Olkin measure verified the sampling adequacy for the analysis, both for LSE (KMO = .94) and for career engagement (KMO = .92). The analysis indicated satisfactory dimensionality for LSE (eigenvalues of three distinct factors = 8.59, 1.45, 1.10 and proportion of explained variance = 53%). A uni-dimensional factor structure was confirmed for CE (eigenvalue = 5.10 and proportion of explained variance = 57%).

### 4.4. Hypothesis testing

Results for *Hypothesis 1*: There is a significant and positive interrelation between LSE and CE ( $r = .38, p < .001$ ). Higher levels of LSE are interrelated with higher levels of CE.

Table 1. Correlations: Leadership Self-Efficacy (LSE) and Career Engagement (CE).

| Variable  |                     | LSE Total | CE Total |
|-----------|---------------------|-----------|----------|
| LSE Total | Pearson Correlation | 1         | .383**   |
|           | Sig. (2-tailed)     |           | <.001    |
|           | N                   | 330       | 330      |
| CE Total  | Pearson Correlation | .383**    | 1        |
|           | Sig. (2-tailed)     | <.001     |          |
|           | N                   | 330       | 330      |

\*\* . Correlation is significant at the .01 level (2-tailed).

Results for *Hypothesis 2*: There is not a significant difference between males ( $M = 5.73, SD = .61$ ) and females ( $M = 5.68, SD = .64$ ) concerning their LSE.

Table 2. T-test: Gender and Leadership Self-Efficacy (LSE) – Descriptives.

| Variable  |       | N   | Mean   | Std. Deviation | Std. Error Mean |
|-----------|-------|-----|--------|----------------|-----------------|
| LSE Total | Man   | 118 | 5.7337 | .61688         | .05679          |
|           | Woman | 206 | 5.6798 | .64559         | .04498          |

Table 3. T-test: Gender and Leadership Self-Efficacy (LSE) – Analysis.

|           |                             | Levene's Test for Equality of variances |             | t-test for Equality of Means |         |                 | 95% Confidence Interval of the Difference |                       |        |        |
|-----------|-----------------------------|---|-------------|------------------------------|---------|-----------------|---|-----------------------|--------|--------|
|           |                             | F                                       | Sig.        | t                            | df      | Sig. (2-tailed) | Mean Difference                           | Std. Error Difference | Lower  | Upper  |
| LSE Total | Equal variances assumed     | .316                                    | <b>.574</b> | .734                         | 322     | <b>.464</b>     | .05381                                    | .07335                | .09049 | .19811 |
|           | Equal variances not assumed |   |             | .743                         | 253.019 | .458            | .05381                                    | .07244                | .08886 | .19648 |

Results for *Hypothesis 3*: There is not a significant difference between males ( $M = 3.63$ ,  $SD = .76$ ) and females ( $M = 3.51$ ,  $SD = .91$ ) regarding their CE.

Table 4. T-test: Gender and Career Engagement (CE) – Descriptives.

| Variable |       | N   | Mean   | Std. Deviation | Std. Error Mean |
|----------|-------|-----|--------|----------------|-----------------|
| CE Total | Man   | 118 | 3.6337 | .75908         | .06988          |
|          | Woman | 206 | 3.5119 | .90697         | .06319          |

Table 5. T-test: Gender and Career Engagement (CE) – Analysis.

|          |                             | Levene's Test for Equality of variances |             | t-test for Equality of Means |         |                 | 95% Confidence Interval of the Difference |                       |         |        |
|----------|-----------------------------|---|-------------|------------------------------|---------|-----------------|---|-----------------------|---------|--------|
|          |                             | F                                       | Sig.        | t                            | df      | Sig. (2-tailed) | Mean Difference                           | Std. Error Difference | Lower   | Upper  |
| CE Total | Equal variances assumed     | 3.945                                   | <b>.048</b> | 1.233                        | 322     | .219            | .12184                                    | .09885                | -.07263 | .31631 |
|          | Equal variances not assumed |   |             | 1.293                        | 279.806 | <b>.197</b>     | .12184                                    | .09421                | -.06361 | .30730 |

## 5. Discussion

The main purpose of this study was to gain a better understanding of the role of LSE in CE. A positive interrelation between these theoretical constructs was confirmed, indicating their importance and usefulness for research and practice. LSE can facilitate career engagement and consequently, career development and success. LSE beliefs are domain-specific, therefore they can be amended through carefully designed learning experiences, as evidenced by particular programmes with positive results (Isaac, Kaatz, Lee, & Carnes, 2012). LSE can be enhanced through career counselling, mentoring and training.

According to these preliminary findings, there was no significant difference between men and women regarding their LSE or CE. This may be explained by the participants' characteristics. A good number of them were well educated; had a mature profile (40 years old and above); and were or had been supported by experienced consultants who specialize in leadership roles.

It is important to continue conducting research on the factors affecting women's journey to the upper echelons of an organization and to investigate what helps them to lead fulfilling and balanced lives. Women usually have more life goals compared to men and they may consider more negative outcomes when pursuing a high-level position, e.g. sacrificing family time for work, which make these positions less desirable (Gino, Wilmoth, & Brooks, 2015).

A rigorous systematic review (Kalaitzi, Czabanowska, Fowler-Davis, & Brand, 2017) identified 26 barriers encountered by female leaders and aspiring female leaders in different work environments. The prevailing barriers were gender gap; limited opportunities for career advancement; stereotypes; work-life balance; absence of mentoring; and inflexible work setting. Studies in Non-Western settings



also highlight the social, cultural, religious and organizational challenges faced by female executives and academics (Hodges, 2017; Mousa, 2021).

Limitations that affect the generalizability of results include the use of a cross-sectional design; the reliance on self-report data; and the profile characteristics of many participants in the sample. Further analysis will consider more individual difference variables.

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# EXPLORING THE RELATIONSHIP BETWEEN ADVERSE CHILDHOOD EXPERIENCES AND PERFECTIONISM IN ADULTS: A STUDY IN BOSNIA AND HERZEGOVINA

**Selvira Draganović, & Belma Oruč**

*Department of Psychology, International University of Sarajevo (Bosnia and Herzegovina)*

## Abstract

Adversity in life is somewhat inevitable, and the consequences of adverse experiences in childhood are vast and detrimental. It is natural to expect negative and, in a way, antisocial behaviors and attitudes from the individuals who have survived adversity whilst young, but it is also common for the consequences of such experiences to create adaptive, even prosocial behaviors in individuals; example being perfectionism. Perfectionism is often, cross-culturally, viewed as a desirable trait that fosters excellence. The present study utilized a correlational research design to investigate the relationship between adverse childhood experiences and perfectionism among adults in Bosnia and Herzegovina. The sample comprised 351 adult participants primarily aged 18-25, residing in Bosnia and Herzegovina. Of the participants, 268 were female, 78 were male, and 5 chose not to disclose their biological sex. They were recruited using snowball sampling method. Participants completed a series of self-report measures to assess their adverse childhood experiences and levels of perfectionism. The Adverse Childhood Experiences Questionnaire and the Frost Multidimensional Perfectionism Scale were utilized to collect data. The results revealed a significant positive correlation between adverse childhood experiences total score and total perfectionism score ( $r = .471, p < .05$ ), suggesting a moderate association. Linear regression analysis showed that adverse childhood experiences total score significantly predicted total perfectionism score ( $\beta = .471, p < .05$ ), explaining 22.2% of the variance.

**Keywords:** *Adverse childhood experiences, perfectionism, adults, Bosnia and Herzegovina.*

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## 1. Introduction

Recognizing the critical influence of emotions on personal growth, ensuring the satisfaction of emotional needs in early years stands out as a potential driver for future success. However, the widespread acknowledgment of a stark reality cannot be ignored – a substantial portion of the population faces challenges stemming from early developmental adversities. These impactful experiences, as highlighted by Boullier and Blair (2018), necessitate a closer examination of their effects on emotional well-being during the formative years, as they can significantly shape individual life paths.

### 1.1. Background

The concept of Adverse Childhood Experiences (ACEs) was first introduced in the context of health outcomes by a comprehensive study conducted by the CDC-Kaiser in 1998, as outlined by Boullier and Blair (2018). Subsequently, there has been a growing interest in understanding the diverse impacts of ACEs on physical and mental well-being, behavior, life opportunities, and economic abilities of survivors (Hughes et al., 2016, Monnat & Chandler, 2015). These experiences, spanning maltreatment, abuse, exposure to harmful environments, parental divorce, dysfunctional family relationships, and neglect, can exert lasting impacts on individuals from birth until the age of 18 (Mosley-Johnson et al., 2019).

Transitioning to the realm of perfectionism, a psychological trait defined as the tendency to demand an exceptionally high or flawless level of performance from oneself or others, surpassing what is necessitated by the situation (Flett et al., 2022). Associated consequences are on a broad spectrum, including links to depression, anxiety, eating disorders, and other mental health issues (Drieberg et al., 2019). It is imperative to differentiate between adaptive and maladaptive perfectionism, where the former is viewed as 'benign' and even desirable, while the latter results in significant distress for the individual (Lo & Abbott, 2013). Despite the paradoxical nature of healthy perfectionism, perceived as an oxymoron, it is widely accepted and encouraged across cultures, possibly owing to its association with excellence

and goal-oriented behaviors. However, the potential drawbacks of perfectionism, including self-criticism, self-blame, guilt, and procrastination, may pose challenges in later life for individuals striving for high-quality performances in various aspects. Theoretical explanations and empirical data suggest that perfectionism exhibits both adaptive and maladaptive features (Stoeber et al., 2020).

## **1.2. Purpose**

The purpose of this study is to investigate the heterogeneity of outcomes and consequences stemming from experiencing adversity in childhood. Specifically, the research aims to contribute to the existing body of knowledge by exploring positive yet maladaptive traits and outcomes that may arise from Adverse Childhood Experiences (ACEs).

## **2. Methods**

### **2.1. Participants**

Convenience and snowball sampling methods were employed for participant recruitment, targeting a diverse group, particularly students, who were expected to be receptive to participation. The sample comprised 351 adult participants primarily aged 18-25, residing in Bosnia and Herzegovina. Of the participants, 268 were female, 78 were male, and 5 chose not to disclose their biological sex.

### **2.2. Procedures**

The study utilized university platforms and expanded reach through social media to efficiently gather a sizable number of participants. Data collection was conducted utilizing Google Forms. Information about the study, its objectives, and potential risks was shared with participants before distributing questionnaires. No incentives were provided to the participants.

### **2.3. Instruments**

**2.3.1. Sociodemographic form.** A sociodemographic form assessed participants' age, sex, history of mental illness, education level, and nationality.

**2.3.2. Adverse Childhood Experiences Questionnaire (ACEQ).** The ACEQ, consisting of 10 yes/no items, measured participants' experiences before the age of 18 (Sciolla et al., 2019). Each 'yes' response scored 1 point, with a maximum score of 10.

**2.3.3. Frost Multidimensional Perfectionism Scale (FMPS).** The FMPS, comprising 35 items on a 5-point Likert scale, measured four dimensions of perfectionism (Frost et al., 1990, 1993; Stöber, 1998). The dimensions included Concern over Mistakes and Doubts about Actions, Excessive Concern with Parents' Expectations and Evaluation, Excessively High Personal Standards, and Concern with Precision, Order and Organization. The scale was developed by Dr. Randy Frost and colleagues (1990) and Stober (1998).

### **2.4. Study design and data collection**

The study utilized a convenience and snowball sampling strategy to enlist 351 participants. Data collection occurred online through Google Forms, employing a questionnaire that covered diverse measures, including a sociodemographic scale, the Adverse Childhood Experiences (ACE) questionnaire, and the Frost Multidimensional Perfectionism Scale. Subsequently, the collected data underwent analysis using SPSS version 21, employing suitable statistical techniques to investigate the associations between the variables of interest.

### 3. Results

#### 3.1. Descriptive statistics

Table 1. Descriptive Statistics of Continuous Variables.

| Variable  | N   | Mean  | Std. Deviation | Skewness | Std. Error | Kurtosis | Std. Error |
|---|-----|-------|----------------|----------|------------|----------|------------|
| ACE Total   | 351 | 2.08  | 2.13           | 0.870    | 0.130      | -0.087   | 0.260      |
| Concern over mistakes and doubts about actions              | 351 | 37.54 | 12.71          | 0.081    | 0.130      | -0.768   | 0.260      |
| Excessive concern with parents' expectations and evaluation | 351 | 25.99 | 9.43           | 0.341    | 0.130      | -0.924   | 0.260      |
| Personal standards  | 351 | 24.93 | 6.07           | -0.399   | 0.130      | -0.362   | 0.260      |
| Organization  | 351 | 23.32 | 4.73           | -0.587   | 0.130      | 0.129    | 0.260      |
| Total perfectionism   | 351 | 88.46 | 24.16          | 0.130    | 0.130      | -0.454   | 0.260      |
| Valid N (listwise)  | 351 |       |                |          |            |          |            |

#### 3.2. Exploration of correlation between ACEs and perfectionism

Table 2. Correlations Among Variables.

| Variable                  | ACE Total | Total Perfectionism Score | N   |
|---------------------------|-----------|---------------------------|-----|
| ACE Total                 | 1         | 0.471**                   | 351 |
| Total Perfectionism Score | 1         |                           | 351 |

- Correlation is significant at the 0.01 level (2-tailed).
- Significance levels:  $p < 0.01$ .

The Pearson correlation coefficient ( $r$ ) was used to assess the strength and direction of the relationships. The correlation between ACE Total and Total Perfectionism Score was found to be significant ( $r = .471, p < .05$ ), indicating a moderate positive association.

#### 3.3. ACEs as predictors of perfectionism

Table 3. Model Summary and Goodness of Fit.

| Model | R    | R Square | Adjusted R Square | Std. Error of the Estimate | F      | Sig. |
|-------|------|----------|-------------------|----------------------------|--------|------|
| 1     | .471 | .222     | .220              | 21.341                     | 99.707 | .000 |

- Predictors: (Constant), ACE Total
- Dependent Variable: Total Perfectionism Score

Table 4. Regression Coefficients.

| Model | Unstandardized Coefficients | Standardized Coefficients | t    | Sig.       |
|-------|-----------------------------|---------------------------|------|------------|
| 1     | B                           | Std. Error                | Beta | (Constant) |
|       | ACE Total                   | 5.353                     | .536 | .471       |

- Dependent Variable: Total Perfectionism Score
- $R=0.471, r^2= 0.222, F(1/349) =99.709, p=0.000$ .
- ACE Total is a statistically significant predictor of perfectionism, explaining 22.2% of the variance.

This analysis explores the relationship between ACEs and their role as a predictor of perfectionism. The results indicate that ACEs significantly predict the Total Perfectionism Score, with higher ACE levels associated with elevated perfectionism scores.

## **4. Discussion**

### **4.1. Insights into ACEs and perfectionism: Building on previous research**

Our study contributes valuable insights into the intricate dynamics between Adverse Childhood Experiences (ACEs) and perfectionism. Previous research on similar correlations has produced intriguing results, deepening our understanding of this complex interplay.

Chen and colleagues (2019) conducted a study revealing that individuals who underwent childhood adversity exhibited significantly higher levels of self-presentational perfectionism, along with an inclination to conceal imperfections.

Ying and colleagues (2021) explored the relationship between negative parenting practices and maladaptive perfectionism using the Frost Multidimensional Perfectionism Scale. Their findings suggested that maladaptive perfectionism mediated the connection between negative parenting practices and non-suicidal self-injury in a Chinese adolescent population. Among various negative parenting practices, maternal rejection was notably associated with maladaptive perfectionism.

Similarly, Wilson and colleagues (2015) uncovered a positive relation between recalled indirect peer victimization and current perfectionism. These findings align with research by Dobos and colleagues (2021) on non-clinical samples, which identified positive associations between maladaptive perfectionism and variables such as childhood trauma, emotion dysregulation, and academic anxiety.

Our study builds on this foundation, providing further context to the intricate relationships between ACEs and perfectionism, shedding light on potential influences and consequences.

### **4.2. ACEs as predictors of perfectionism: Unraveling the dynamics**

Our analysis delved into the intricate role of Adverse Childhood Experiences (ACEs) as predictors, unraveling their impact on perfectionism. Notably, ACEs emerged as a significant predictor of perfectionism, with the model revealing that ACEs accounted for a substantial 22.2% of the variance in Total Perfectionism Score. The statistical significance of the regression model underscores the noteworthy influence of ACEs on perfectionism, indicating a moderate positive relationship.

These findings suggest a nuanced impact of ACEs, wherein they play a role in the development of perfectionism. Interestingly, existing research, such as Chen and colleagues (2019), has identified childhood abuse, including emotional, physical, and/or sexual abuse, as a positive predictor of self-presentational perfectionism and the pursuit of perfection. Moreover, Grad and colleagues (2023) conducted discriminant analysis, emphasizing childhood abuse and neglect as crucial predictors of perfectionism profile membership. Vlaicu and Petrăreanu (2023) further highlighted the broader impact of adverse childhood experiences on an individual's quality of life, linking them to perfectionism and burnout.

In summary, our research contributes valuable insights into the distinctive influence of ACEs on the development of perfectionism.

## **5. Conclusion**

In conclusion, our study identified a statistically significant moderate positive association between ACE total score and Total Perfectionism Score, indicating that higher levels of ACEs are linked to increased perfectionism.

Furthermore, ACEs emerged as a significant predictor of perfectionism, explaining 22.2% of the variance in perfectionism scores. This finding suggests that ACEs may have a notable impact on perfectionism levels in our sample, contributing valuable insights into the intricate relationships between adverse childhood experiences and perfectionistic tendencies.

### **5.1. Limitations**

Acknowledging the cross-sectional design's limitations, future research should aim to establish causality through experimental or longitudinal approaches. Addressing potential biases associated with self-report measures by incorporating objective or observer-based assessments is essential for enhancing validity. To improve external validity, future studies should diversify samples beyond the specific population in Bosnia and Herzegovina. The exploration of additional variables beyond ACEs and perfectionism, as well as the inclusion of protective factors that may mitigate the impact of ACEs, is crucial for a more comprehensive understanding. Researchers are encouraged to consider a broader contextual framework to capture the complexity of factors influencing the relationship between ACEs and perfectionism.

## 5.2. Recommendations for future research

Moving forward, it is recommended to undertake longitudinal studies that trace the development of adverse childhood experiences (ACEs) and perfectionism over time, offering a nuanced understanding of their trajectories. Diversifying the participant pool across cultural and demographic dimensions should be a priority to assess the generalizability of findings. Supplementing quantitative data with in-depth qualitative analysis, such as interviews or focus groups, would provide richer insights into the subjective experiences linked to ACEs and perfectionism. Future research should explore potential mediators or moderators influencing the ACEs-perfectionism relationship, such as coping mechanisms, social support, or personality traits. Additionally, investigating the impact of specific ACE types on perfectionism could offer a more refined understanding for targeted interventions.

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## EVERYDAY MEMORY QUESTIONNAIRE [13-ITEMS]: EUROPEAN PORTUGUESE TRANSLATION AND PSYCHOMETRIC CHARACTERIZATION

**Bruna Ribeiro<sup>1</sup>, Pedro F. S. Rodrigues<sup>1, 2,\*</sup>, Sara M. Fernandes<sup>1, 2</sup>,  
Susana Rubio-Valdehita<sup>3</sup>, & Ramón López-Higes<sup>4</sup>**

<sup>1</sup>*Department of Psychology and Education, Portucalense University, Oporto (Portugal)*

<sup>2</sup>*Portucalense Institute for Psychology (I2P), Portucalense University, Oporto (Portugal)*

<sup>3</sup>*Departamento de Psicología del Trabajo y Psicología Social, UCM (Spain)*

<sup>4</sup>*Departamento de Psicología Experimental, Complutense University of Madrid (UCM) (Spain)*

### Abstract

Subjective Memory Complaints (SMCs) are very frequent in the community, but more markedly in older people (Ginó et al., 2010; Zapater-Fajari et al., 2022). Several studies have indicated an association between SMCs and memory objectively measured, although the results maintain inconsistency. However, SMCs constitute an important symptom in clinical contexts which is usually associated with the search for clinical care. Scientific literature has reported several questionnaires to assess SMCs [e.g., Everyday Memory Questionnaire (EMQ) - 13 items; Royle & Lincoln, 2008]. However, in Portugal there are very few instruments that measure SMCs. This study aimed to translate and present preliminary psychometric data of the EMQ (13-items) for application to the Portuguese population. This instrument has been reported in literature as one of the most used instruments to assess memory complaints. Additionally, this study aimed to explore factors that could predict SMCs (i.e., age, depression, anxiety). The sample was composed of 344 participants (241 female), with ages between 18 and 80 years ( $M = 36.4$ ,  $SD = 15.9$ ). Participants completed the following self-report questionnaires: Sociodemographic Questionnaire, EMQ 13-items, Montreal Cognitive Assessment (MoCA), Beck Depression Inventory-II (BDI-II), and State-Trait Anxiety Inventory (STAI-Y2). The results suggested that the EMQ 13-items presents good psychometric properties, specifically internal consistency (Cronbach's alpha of 0.92), and factorial validity (two-factor structure that explained 60.3% of the total variance), although the sample presents some limitations. In a sub-sample, some negative correlations were found between EMQ 13-items and MoCA subscales. The results also indicated that depression and age are predictors of the subjective memory complaints, a pattern of results found in studies with several instruments that assess memory complaints. Given that this instrument revealed good psychometric characteristics for a Portuguese sample, although this is a preliminary study, this constitutes a starting point for new studies (e.g., transcultural studies).

**Keywords:** *Subjective memory complaints, EMQ 13-items, psychometrics, individual factors.*

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### 1. Introduction

Subjective Memory Complaints (SMCs) are very frequent in the community, but more markedly in older people (Ginó et al., 2010; Zapater-Fajari et al., 2022). SMCs represent an important symptom in clinical contexts which is usually associated with the search for clinical care. A longitudinal study carried by Kryscio et al. (2014) identified that SMCs were predictors of Mild Cognitive Impairment within 9 years. Another study by Sohrabi et al. (2019) found a positive relation between the severity of SMCs and development of cognitive impairment after three years of the initial complaints. Several studies have indicated an association between SMCs and memory objectively measured, although the results maintain inconsistency (Jacinto et al., 2014; Park et al., 2019; Rodrigues & Pandeirada, 2014).

To our knowledge, there are only two instruments for assessing SMCs in Portuguese population: *Questionário de Lapsos de Memória* (Pinto, 1990) and *Subjective Memory Complaints* (Ginó et al., 2007) with limited psychometric properties. So, with this project we aimed to: (1) translate and present preliminary psychometric data of the Everyday Memory Questionnaire [13-items; Royle & Lincoln, 2008;

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\* Corresponding author: prodrigues@upt.pt

adapted by Ribeiro et al., 2023] for Portuguese population; (2) explore factors that influence SMCs (i.e., age, depression, anxiety; Dux et al., 2008; Elfgrén et al., 2009; Ginó et al., 2010; Sousa et al., 2015).

## 2. Method

### 2.1. Participants

The following inclusion criteria were applied: (1) age 18 years old and over; (2) no acute or serious medical conditions; (3) minimum education required: 4 years. The final sample consisted of 344 Portuguese participants aged between 18 and 80 years ( $M = 36.4$ ,  $SD = 15.9$ ): 70.1% female and 29.9% male; 31.4% in 18-22 age group, 19.2% in 23-33 age group, 25.6% in 34-49 age group, and 23.8% in  $\geq 50$  age group. Regarding educational level: 5.2% - 1<sup>st</sup> cycle of basic education, 7.8% - 2<sup>nd</sup> cycle of basic education, 5.5% - 3<sup>rd</sup> cycle of basic education, 18.6% - secondary education, and 16.9% - higher education.

### 2.2. Materials

The following materials were applied: **Sociodemographic Questionnaire** with several questions such as age, sex, medical conditions, etc. **Everyday Memory Questionnaire [EMQ] 13-items** (original version: Royle & Lincoln, 2008; Portuguese version: Ribeiro et al., 2023). It is composed of 13 items, with a Likert-type scale ranging from “once or less in the last month” (1) to “once or more once per day” (5); higher values indicate the presence of SMCs. **Beck Depression Inventory-II (BDI-II)**; Portuguese version: Oliveira-Brochado et al., 2014). It contains 21 items, with a scale ranging from zero to three points: zero being the absence of symptoms and three being the presence of strong symptomatology. **State-Trait Anxiety Inventory – Form Trait (STAI-Y2)**; Portuguese version: Silva, 2003) is an instrument developed to measure an individual’s tendency to experience anxiety in trait form (20-items). A subgroup of participants ( $n = 14$ ) also completed the **MOCA - Montreal Cognitive Assessment** (Freitas et al., 2011).

### 2.3. Procedure

The translation of the EMQ 13-items into European Portuguese included the following four phases: 1) translation of the original questionnaire into European Portuguese by two Portuguese researchers highly proficient in English; 2) re-translation the translated form into English by a bilingual English Professor naïve to the original version; 3) examination of the translated and re-translated versions by two researchers; and 4) final wording adjustments (Kline, 2005). After that, an independent sample of 344 participants completed all instruments mentioned above. All participants were informed about the objectives of the study and were invited to participate after signing an informed consent form.

### 2.4. Statistical analysis

All analyses were computed using IBM SPSS v.27: descriptive analyses, principal component analysis with the resource of orthogonal rotation (Varimax), internal consistency (Cronbach’s  $\alpha$ ),  $t$  test (to assess sex differences), ANOVA (to assess differences among educational levels) and multiple regression (to detect predictors of SMCs).

## 3. Results

An initial analysis of item properties was conducted. Table 1 presents the descriptive statistics of the EMQ 13-items.

The factorial structure of the EMQ 13-items was determined by a principal component analysis with the resource of orthogonal rotation (Varimax) [ $KMO = .93$ ; Bartlett’s sphericity test:  $\chi^2(78) = 2417.436$ ,  $p < .001$ ; communalities values  $> .40$ ]. We obtained a two-factor structure that combined explained 60.3% of the total variance. The first component identified presented an eigenvalue of 6.78 which explains 67.8% of the total variance. This component includes 8 items (Q1, Q2, Q3, Q5, Q6, Q8, Q11, and Q12), with values ranging from 0.58 (Q11) to 0.79 (Q2). To this component (factor 1), we propose the designation ‘Retrieval’, identical to Evans et al. (2020). The second component (factor 2) was identified, with an eigenvalue of 1.06 which explains 10.6% of the variance. This second component contains 5 items (Q4, Q7, Q9, Q10, Q13) with values ranging from 0.59 (Q13) to 0.82 (Q4). To this component (factor 2), we propose the same name as Evans et al. (2020): ‘Attentional Tracking’. The instrument also revealed a very good internal consistency, as measured by Cronbach’s  $\alpha$  of 0.92 (factor 1: Cronbach’s  $\alpha = .89$ ; factor 2: Cronbach’s  $\alpha = .84$ ). See Table 2 for descriptive data into two factors.

The multiple regression (depression, age, and anxiety are predictors of the SMCs?) revealed statistical significance,  $F(3, 18) = 33.36$   $p < .001$  (depression:  $\beta = .469$ ,  $p < .001$ ; age:  $\beta = .14$ ,  $p = .026$ ; anxiety:  $\beta = .13$ ,  $p = .133$ ). An ANOVA revealed significative differences for the EMQ 13-items among the different



educational levels,  $F(4, 183) = 3.97, p = .004$ . Multiple comparisons revealed differences ( $p < .05$ ) between the 1<sup>st</sup> cycle and all other educational levels, i.e., lower educational level had more SMCs. No sex differences were found for the EMQ 13-items,  $t(204) = 1.30, p = .195$ .

A Pearson correlation revealed a strong negative correlation between the total score of the MoCA and EMQ 13-items ( $r = -.75, p < .001$ ); however, this analysis was conducted only with 14 participants. Concretely, the total score of the EMQ 13-items was negatively correlated with the following domains/subscales of the MoCA: Visuospatial skills ( $r = -.59, p = .024$ ), Naming ( $r = -.61, p = .021$ ), Attention ( $r = -.66, p = .010$ ), Abstraction ( $r = -.68, p = .007$ ), Delayed Recall ( $r = -.57, p = .035$ ), and Orientation ( $r = -.68, p = .008$ ). The “language domain” of the MoCA was not associated with the EMQ 13-items ( $r = -.40, p = .154$ ).

Table 1. Descriptive properties of the items - EMQ 13-items (Portuguese version).

|    | Item Description   | Min | Max | M    | SD   | Corrected Item-total correlation | Cronbach's alfa is the item is deleted |
|----|--|-----|-----|------|------|----------------------------------|--|
| 1  | Having to check whether you have done something that you should have done.   | 0   | 4   | 1.83 | 1.38 | 0.56                             | 0.92                                   |
| 2  | Forgetting when it was that something happened; for example, whether it was yesterday or last week.                                | 0   | 4   | 1.40 | 1.25 | 0.68                             | 0.91                                   |
| 3  | Forgetting that you were told something yesterday or a few days ago, and maybe having to be reminded about it                      | 0   | 4   | 1.21 | 1.18 | 0.70                             | 0.91                                   |
| 4  | Starting to read something (a book or an article in a newspaper, or a magazine) without realizing you have already read it before. | 0   | 4   | 0.66 | 1.10 | 0.44                             | 0.92                                   |
| 5  | Finding that a word is ‘on the tip of your tongue’. You know what it is but cannot quite find it.                                  | 0   | 4   | 1.49 | 1.25 | 0.66                             | 0.92                                   |
| 6  | Completely forgetting to do things you said you would do, and things you planned to do.  | 0   | 4   | 1.14 | 1.21 | 0.74                             | 0.91                                   |
| 7  | Forgetting important details of what you did or what happened to you the day before.   | 0   | 4   | 0.97 | 1.13 | 0.74                             | 0.91                                   |
| 8  | When talking to someone, forgetting what you have just said. Maybe saying ‘what was I talking about?’                              | 0   | 4   | 1.25 | 1.26 | 0.71                             | 0.91                                   |
| 9  | When reading a newspaper or magazine, being unable to follow the thread of a story; losing track of what it is about.              | 0   | 4   | 0.91 | 1.17 | 0.66                             | 0.92                                   |
| 10 | Forgetting to tell somebody something important, perhaps forgetting to pass on a message or remind someone of something.           | 0   | 4   | 1.03 | 1.11 | 0.71                             | 0.91                                   |
| 11 | Getting the details of what someone was told you mixed up and confused.  | 0   | 4   | 1.04 | 1.19 | 0.61                             | 0.92                                   |
| 12 | Forgetting where things are normally kept or looking for them in the wrong place.  | 0   | 4   | 1.46 | 1.34 | 0.68                             | 0.92                                   |
| 13 | Repeating to someone what you have just told them or asking someone the same question twice.                                       | 0   | 4   | 1.03 | 1.17 | 0.68                             | 0.92                                   |

Table 2. Descriptive data divided into two factors.

|                       | Retrieval<br>(M; SD) | Attentional Tracking<br>(M; SD) |
|-----------------------|----------------------|---------------------------------|
| <i>Sex</i>            |                      |                                 |
| Male                  | 11; 7.29             | 4; 4.44                         |
| Female                | 10; 7.72             | 3; 4.42                         |
| <i>Education</i>      |                      |                                 |
| 1 <sup>st</sup> cycle | 15; 5.01             | 10; 3.63                        |
| 2 <sup>nd</sup> cycle | 14; 7.44             | 7; 5.11                         |
| 3 <sup>rd</sup> cycle | 6; 7.88              | 3; 5.21                         |
| Secondary education   | 9; 7.88              | 3; 4.33                         |
| Higher education      | 11; 7.75             | 4; 4.01                         |
| <i>Age</i>            |                      |                                 |
| [18-49]               | 10; 7.55             | 3; 4.29                         |
| [50-80]               | 12; 7.69             | 4; 4.87                         |

#### 4. Conclusions

In this study, we present the European Portuguese version of the Everyday Memory Questionnaire [EMQ 13-items], one of the most used instruments to assess SMCs, presenting also its preliminary psychometric properties. The factor structure (two-factor model) found is analogous to the structure of the study by Evans et al. (2020): retrieval and attentional tracking factors. The internal consistency of the total scale is very good (Cronbach's  $\alpha > .90$ ; Kline, 2005). Depression and age were predictors of the SMCs, as mentioned in the literature. Lower educational level (1<sup>st</sup> cycle) presented more SMCs when compared to other educational levels (Dux et al., 2008; Elfgren et al., 2009; Ginó et al., 2010; Sousa et al., 2015). In next steps, we intend to: collect additional data to balance the groups according to age and school levels; apply MoCA to a larger number of participants; conduct a Confirmatory Factorial Analysis; conduct invariance analyses; expand the project to the Spanish population allowing a cross-cultural study. Since the good psychometric properties revealed in this study and the fact that memory complaints are still a very unknown topic, this project is promising for providing a valid measure for assessing SMCs. It is a starting point for a crucial line of research in Portugal and Spain, two progressively ageing countries.

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## VARIABLES THAT ALLOW A RELIABLE CLASSIFICATION OF OLDER PEOPLE WITH DIFFERENT LEVELS OF COGNITIVE STATE

Ramón López-Higes<sup>1</sup>, Susana Rubio-Valdehita<sup>2</sup>,  
Pedro F. S. Rodrigues<sup>3</sup>, & Sara M. Fernandes<sup>3</sup>

<sup>1</sup>*Departamento de Psicología Experimental, Complutense University of Madrid (UCM) (Spain)*

<sup>2</sup>*Departamento de Psicología del Trabajo y Psicología Social, UCM (Spain)*

<sup>3</sup>*Portugalense Institute for Psychology (I2P), Portugalense University, Oporto (Portugal)*

### Abstract

To assess the general cognitive state and identify potential cognitive deterioration issues, screening tests such as the Mini-Mental State Examination have been widely utilized. Various studies have aimed to determine the socio-demographic variables (e.g., age, education) and cognitive abilities (memory, language, executive functions) most closely linked to the cognitive state assessed through tests like the MMSE. The primary objectives of this study were as follows: (a) assess the impact of socio-demographic variables, such as age and cognitive reserve, and other cognitive abilities (working memory, comprehension of written sentences) in accurately classifying a sample of older individuals with varying general cognitive statuses; (b) calculate optimal cut-off points for variables with the greatest importance in classification, striking a balance between true positive rate (sensitivity) and false positive rate (1 - specificity). The participants comprised 159 Spanish older adults, aged 60 to 89, categorized into two groups based on their 35-item MMSE scores: those with scores equal to or greater than the 60thile (normal/high scores: N/Hs group) and those with scores equal to or lower than the 25thile (low scores: Ls group). All participants underwent tests evaluating working memory and comprehension of written sentences, including the digit reordering test, the sequential version of the ECCO-senior test, and the written sentence comprehension test of the Bateria de Evaluación de los Trastornos Afásicos (BETA; English translation: Battery for the assessment of aphasic disorders). Cognitive reserve estimation was obtained through Rami et al.'s Cognitive Reserve Questionnaire. Binary logistic regression analysis was initially conducted following a hierarchical method to identify significant variables explaining correct classification. Subsequently, ROC curve analyses were performed to determine optimal cut-off points for relevant variables, as well as measures of overall model quality. The final logistic equation incorporates cognitive reserve, digit reordering, and performance on BETA's sentences focused on the object and on sentences with one proposition not fitting canonical word order in Spanish in the ECCO test. Area under the curve (AUC), ROC and precision/exhaustivity curves, an overall model quality index, and optimal cut-off values were computed for all these significant variables. Results are discussed in the context of the reviewed literature.

**Keywords:** *Cognitive reserve, working memory, sentence comprehension, MMSE, ROC analysis.*

### 1. Introduction

There is a continuum from normality to dementia (Petersen et al., 2014) in which different trajectories of greater or lesser cognitive decline may occur that depend on factors such as age (Salthouse, 2012), cognitive reserve (Jones et al., 2011), presence of anxiety or stress (Lupien et al., 2007), depressive symptoms (Liew, 2019), or serious cardiovascular diseases (Walker et al., 2019), among others. The Mini-Mental State Exam (MMSE; Spanish adaptation by Lobo et al., 1979) has been used as a screening test to detect the presence/absence of cognitive impairment (Vilalta-Franch et al., 1996). This has allowed researchers to study the variables that are more strongly associated with this dichotomous classification. Some have already been mentioned (age, cognitive reserve), but others are of interest because they belong to cognitive domains such as working memory (Kirova et al., 2015), or to another area that has been poorly studied, such as sentence comprehension.

The first objective of this work is to explore the differences between cognitively intact older adults and older people with cognitive impairment, according to their scores on MMSE, concerning variables such as age, cognitive reserve, working memory capacity, and different indices related to sentence

comprehension. As a second objective, this study aims to determine which variables have the greatest weight to reliably classify participants, and which of these would be the best predictors in terms of their statistical properties.

## 2. Method

### 2.1. Participants

A sample of 208 Spanish older adults (age range: 60 - 89 years old) was initially assessed in the context of a research project on normal and pathological aging. Two groups were established using the scores obtained by the participants in the MMSE-35 (Lobo et al., 1979): (G1) the **cognitively intact** group [MMSE-35  $\geq$  60thile], and (G2) the **cognitive impairment** group [MMSE-35  $\leq$  25thile]. The percentage of females was 54.7% in G1 and 59.6% in G2. Regarding formal education, in G1 there was 78.5% of participants with higher education, whereas in G2 the percentage decreased to 51%.

### 2.2. Materials

MMSE-35 (Lobo et al., 1979) was used as a screening/grouping test. Cognitive reserve estimation was done by the Cuestionario de Reserva Cognitiva (English trad.: Cognitive reserve questionnaire; Rami et al., 2011). A digit reordering task (MacDonald et al., 2001) allows us to assess individuals' working memory capacity. Written sentence comprehension was assessed through two tests, the Exploración Cognitiva de la Comprensión de Oraciones (ECCO Senior test; English translation: Cognitive assessment of sentence comprehension; López-Higes et al., 2020), and the subtest of sentence-picture matching of the Batería de Evaluación de los Trastornos Afásicos (BETA; English translation: Battery for the assessment of aphasic disorders; Cuetos & González-Nosti, 2009). Sentence comprehension indexes from the BETA subtest corresponded to the following types of structures: active, cleft subject, relative clause, passives, and cleft object. From the ECCO test, we used four indexes corresponding to sentences fitted to canonical word order in Spanish (WOS: Subj.+Verb+Obj.) with one proposition, sentences not fitted to canonical WOS with one proposition, sentences fitted to canonical WOS with two propositions, and sentences not fitted to canonical WOS with two propositions.

### 2.3. Procedure

All the tests were administered following the instructions in their manuals. All participants were informed about the objectives of the study and were invited to participate after signing an informed consent form.

### 2.4. Statistical analysis

All analyses were computed using IBM SPSS v.27. A multivariate ANOVA was used to find significant differences between groups. A binary logistic regression with the variables that were significant in the multivariate ANOVA as predictors was computed to establish the classification of the participants. A final ROC curve analysis was also performed with the variables that had an important role in subjects' classification to obtain cut-off values with clinical significance.

## 3. Results

Descriptive statistics in all the relevant variables are shown in Table 1. Multivariate ANOVA revealed that the two groups differ significantly in all variables (see the right side of the table). Consider all the following acronyms that appeared in the table. C1SP: sentences fitted to canonical word order in Spanish (WOS) with one proposition; NoCS1P: sentences not fitted to canonical WOS with one proposition; C2SP: sentences fitted to canonical WOS with two propositions; NoCS2P: sentences not fitted to WOS with two propositions.

### 3.1. Participants' classification

The logistic regression analysis included the following predictor variables: age, cognitive reserve, digit reordering, BETA actives, BETA passives, BETA relative clause, BETA cleft subject, BETA cleft object, ECCO C1SP, ECCO NoCS1P, ECCO C2SP, and ECCO NoCS2P. The final equation (see Table 2) allowed 82.9% of subjects' classification. When  $\text{Exp}(B)$  is less than 1 it indicates that decreasing values of the predictor correspond to increasing odds of the event's occurrence.

Table 1. Descriptive statistics by group across all relevant variables and multivariate ANOVA.

|                                | COGNITIVE STATE                           |      |   |      |                    |      |
|--------------------------------|---|------|---|------|--------------------|------|
|                                | Intact participants<br>(MMSE $\geq$ Pc60) |      | Impaired participants<br>(MMSE $\leq$ Pc25) |      | <i>F</i> (1,158) = | Sig. |
|                                | Mean                                      | SD   | Mean  | SD   |                    |      |
| Age                            | 68.26                                     | 7.66 | 74.43                                       | 6.62 | 27.01              | **   |
| MMSE                           | 34.02                                     | .87  | 27.43                                       | 3.07 | 400.50             | **   |
| Cognitive reserve              | 13.51                                     | 4.22 | 7.60  | 3.46 | 80.78              | **   |
| Digit reordering (series)      | 12.56                                     | 2.23 | 9.28  | 3.75 | 47.81              | **   |
| BETA active sentences          | 3.77                                      | .45  | 3.23  | .88  | 25.52              | **   |
| BETA cleft subject sentences   | 3.78                                      | .56  | 3.36  | .79  | 14.69              | **   |
| BETA relative clause sentences | 3.71                                      | .49  | 3.25  | .91  | 17.66              | **   |
| BETA passive sentences         | 3.65                                      | .59  | 3.15  | .81  | 20.42              | **   |
| BETA cleft object sentences    | 3.64                                      | .64  | 2.85  | 1.19 | 29.28              | **   |
| ECCO CS1P                      | 8.48                                      | .93  | 7.40  | 1.56 | 29.56              | **   |
| ECCO NoCS1P                    | 8.25                                      | 1.21 | 6.75  | 1.57 | 45.55              | **   |
| ECCO CS2P                      | 8.15                                      | 1.14 | 6.67  | 1.75 | 41.67              | **   |
| ECCO NoCS2P                    | 7.20                                      | 1.82 | 5.74  | 1.66 | 26.02              | **   |

\*\**p* < .001

Table 2. Logistic regression: variables in the final equation.

|                           | <i>B</i> | standard<br>error | Wald   | df | Sig. | Exp( <i>B</i> ) | 95% C.I. for<br>EXP( <i>B</i> ) |          |
|---------------------------|----------|-------------------|--------|----|------|-----------------|---------------------------------|----------|
|                           |          |                   |        |    |      |                 | Inferior                        | Superior |
| Cognitive reserve         | -.291    | .070              | 17.134 | 1  | .000 | .747            | .651                            | .858     |
| Digit reordering (series) | -.227    | .092              | 6.074  | 1  | .014 | .797            | .665                            | .955     |
| BETA cleft object         | -.612    | .290              | 4.456  | 1  | .035 | .542            | .307                            | .957     |
| ECCO NoCS1P               | -.347    | .172              | 4.062  | 1  | .044 | .707            | .505                            | .990     |
| Constant                  | 5.318    | 3.080             | 2.982  | 1  | .084 | 204.076         |                                 |          |

### 3.2. Quality of significant predictors

To explore the quality of these four significant predictors individual ROC curve analysis was computed for each one. Relevant parameters in ROC curve analysis are (a) Area Under the Curve (AUC), which is a metric that quantifies the overall performance of a binary classification model; (b) Sensitivity, which ranges from 0 to 1, where 0 indicates low sensitivity (no true positives correctly identified) and 1 indicates high sensitivity (all true positives correctly identified); (c) Specificity, it also ranges from 0 to 1, where 0 indicates low specificity (no true negatives correctly identified) and 1 indicates high specificity (all true negatives correctly identified); (d) Kolmogorov-Smirnov (K-S) is an index showing how far are separated the rate of true positives from the rate of false positives, indicating if the model is good enough for classification. Based on K-S metric it is possible to determine the optimal cut-off point for each predictor variable. Due to space limitations, only the figures corresponding to the two predictor variables that have the best properties will be shown.

Figure 1 shows the ROC curve and the overall quality of the model if cognitive reserve (CR) is considered as predictor variable for classification. In this case AUC = .851, K-S = .551 (moderately high quality to distinguish between the two groups), and the optimal cut-off for CRQ (max: 25) = 9.5.

The ROC curve and the overall quality of the model for ECCO sentences not fitted to WOS with one proposition (NoCS1P) appear in Figure 2. In this analysis AUC = .787, K-S = .413 (moderate quality), and the optimal cut-off for NoCS1P (max: 9) = 7.5.

Parameters for digit reordering (DO) are the following: AUC = .778, K-S = .482 (moderate quality), and the optimal cut-off for DO (max: 15 points) = 10.5. The results obtained for BETA cleft object sentences (COS) are: AUC = .698, K-S = .347 (low moderate quality), and the optimal cut-off for COS (max: 4) = 3.5.

Figure 1. ROC curve and overall model quality corresponding to CR.

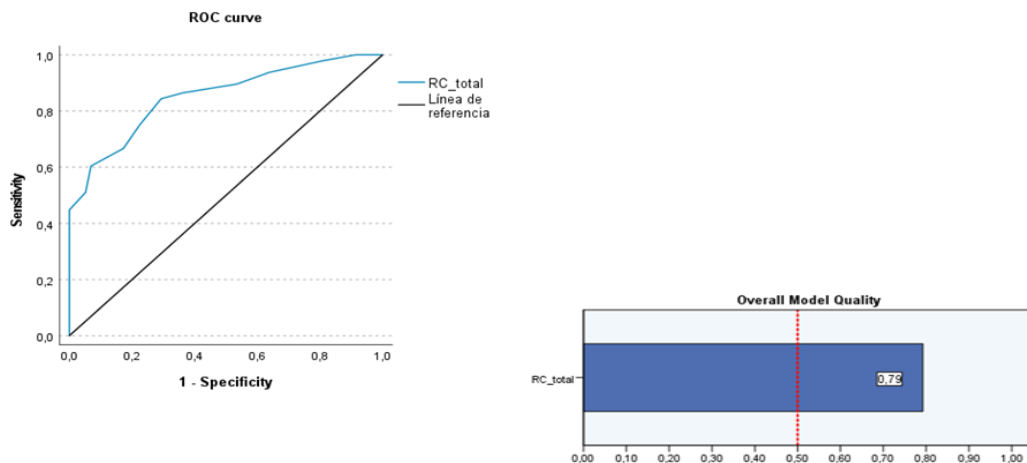
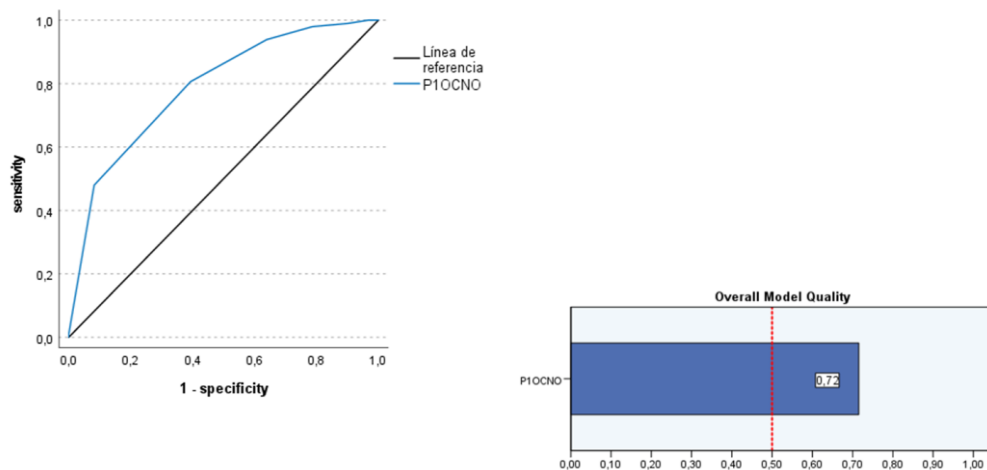


Figure 2. ROC curve and overall model quality corresponding to ECCO NoCS1P.



#### 4. Conclusions

The differences between the MMSE-based groups appeared in well-studied factors such as AGE (Nagaratnam et al., 2020), COGNITIVE RESERVE (CR; Lojo-Seoane et al., 2014), or WORKING MEMORY (Lojo-Seoane et al., 2020; López-Higes et al., 2023), which can be considered as a mechanism through which CR exerts its protector role on other cognitive domains. But they are also observed in a domain that has not traditionally received much attention, LANGUAGE, and more specifically written SENTENCE COMPREHENSION (assessed by BETA and ECCO tests in this study).

An excellent classification (83%) is achieved using four predictor variables: CR, Digit reordering, BETA Cleft Object sentences, and ECCO NoCS1P. These last two are related to the comprehension of syntactically complex sentences (Karimi & Ferreira, 2016). In a recent study (López-Higes, Rubio, Rodrigues, & Fernandes, in press) the discrepancy between participants' performance on sentences fitted and non-fitted to canonical WOS was the most significant predictor to distinguish between healthy and SCD+ older adults matched in age, years of education, episodic memory, global cognitive state, and mood. ROC curves analysis pointed out that the order of relevance of predictors for binary classification purposes was the following: CR > ECCO NoCS1P > Digit reordering > BETA Cleft Object.

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## COGNITIVE FUNCTIONS IN A SERIES OF PATIENTS AFTER ACUTE COVID 19 INFECTION – CASE SERIES

**Miroslava Hristova<sup>1,3</sup>, Radka Massaldjieva<sup>2</sup>, Lyubomir Chervenkov<sup>4</sup>,  
& Penka Atanassova<sup>1,3</sup>**

<sup>1</sup>UMHAT “St. George”, Plovdiv, Neurology Clinic, Bul. Peshtersko shose 66, Plovdiv 4002 (Bulgaria)

<sup>2</sup>Medical University of Plovdiv, Faculty of Public Health,  
Department of Health Care Management, Bul. Vasil Aprilov 15A, Plovdiv 4002 (Bulgaria)

<sup>3</sup>Medical University of Plovdiv, Faculty of Medicine, Department of Neurology,  
Bul. Vasil Aprilov 15A, Plovdiv 4002 (Bulgaria)

<sup>4</sup>Research Complex for Translational Neuroscience, Medical University of Plovdiv,  
Bul. Vasil Aprilov 15A, Plovdiv 4002 (Bulgaria)

### Abstract

The exact number of COVID-19 cases worldwide is unknown – it is estimated that the real number of cases is much greater than the laboratory-confirmed, positive patients. A large part of these patients, up to 85% according to some studies, present at a later stage with persisting heterogeneous non-specific symptoms, defined by the World Health Organization (WHO) as Post-acute COVID syndrome (PACS, long-COVID or Post-COVID syndrome). Among the myriad manifestations of PACS, the most common are shortness of breath, fatigue, and cognitive dysfunction including impaired concentration and forgetfulness, all of which are negatively influencing the quality of life of patients. There is still no unanimous consensus, regarding the exact pathogenetic mechanisms of the long-term post-COVID manifestations and no established guidelines for their treatment. Therefore, it is necessary to continue the in-depth study of PACS and its cognitive symptoms. We studied 68 subjects with post-acute COVID syndrome (PACS) – using a detailed clinical interview, a non-contrast magnetic resonance imaging (MRI) brain scan and a computer-based neuro-psychological test - the CogState Brief Battery, assessing four core cognitive domains: processing speed, attention, visual learning and working memory. Our aim here is to present a case series of 4 subjects, in early and middle adulthood who have recovered from a mild COVID 19 infection in the previous year, and which showed hippocampal enlarged perivascular space (H-EPVS) on MRI. The analysis of the acquired test results showed that all subjects had lower (> 53%) than expected accuracy in one subtest of the CogState Brief Battery, compared to healthy individuals. Two of the participants performed worse on the same CogState subtest at follow-up on both outcome measures, compared to baseline. These results confirm the need for objective examination and follow-up of patients with subjective cognitive complaints with sensitive neuropsychological methods and neuroimaging.

**Keywords:** *Cognitive functions, computer-based neuropsychological test, post-COVID syndrome.*

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### 1. Introduction

It is difficult to determine the exact number of COVID-19 cases worldwide. Some statistical models suggest that the real number of infected individuals is approximately 10 times greater than the laboratory-confirmed cases. And many of those who have recovered from the acute COVID 19 infection experience a condition, defined by WHO as post-COVID syndrome.

There is already a large amount of literature data on the connection between a prior SARS-CoV-2 infection and persistent cognitive problems (Altuna et al., 2021). According to Woo et al. (2020), 78% of those, who have recovered from a mild or moderately severe form of COVID 19, experience cognitive difficulties. Walle-Hansen et al. (2021) conducted a study, using Montreal Cognitive Assessment (MoCA), and established that 43% of them showed impaired cognition 6 months after COVID 19 infection. The risk for cognitive impairments is higher for patients after severe infection, but cognitive complaints and objectively found cognitive decline that follow the mild SARS-CoV-2 infection are now a scientific challenge more so as they often affect young patients and their everyday life. (Altuna

et al., 2021; Ceban et al., 2022). In a recent meta-analysis of 81 studies an international team of researchers tried to analyse the data about the prevalence of cognitive impairments a year after COVID-19 diagnosis and found a significant proportion of 0,22, greater for females. They found as well that cognitive problems are long-term, with no difference between the patients followed up at the 6<sup>th</sup> month and those followed up a year later (Ceban et al., 2022).

So far, no unanimous consensus has been reached either on possible treatment, or on the mechanisms by which the infection provokes the long-term negative manifestations, although many authors discuss the central role of immune dysregulation, chronic neuroinflammation and possible neurodegeneration. Therefore, it is necessary to continue to focus our efforts on the in-depth study of PACS manifestations and pathogenesis, in order to uncover typical structural and neuropsychological changes as representation of PACS. (Ceban et al., 2022; Quan et al., 2023; Zhao et al., 2023; Möller et al., 2023).

## 2. Objectives

The aim of the current study is to present a case series of four subjects, two men and two women, all in early and middle adulthood, who have recovered from a mild COVID 19 infection in the previous year. All four of them reported persisting neuro-psychiatric complaints and showed results below the norm on one of the integrity criteria for neuropsychological testing, as well as enlarged perivascular space on magnetic resonance neuroimaging.

## 3. Design

The study is prospective and includes clinical evaluation, MRI brain scan and neuropsychological testing of a group of patients with residual cognitive complaints after COVID 19 infection. The subjects underwent neuropsychological testing once, at baseline and a second time - approximately 6 months later, at follow-up. The design of the study was set to assess cognitive functions in patients with PACS, as well as their dynamics in time. All enrolled patients signed an informed consent and were informed about the objectives of the study.

## 4. Methods

Our investigative methods included:

- 1) Clinical interview, collecting data about medical and social history, current complaints, prescribed medications, and cerebral risk factors.
- 2) Neuropsychological evaluation using a computer-based test – the CogState battery (CAB) with the following subtests:
  - Continuous Paired Associate Learning for delayed visual memory through paired associate learning.
  - Groton Maze timed chase test (GMCT) for speed of visual processing.
  - Groton Maze learning test (GML) for executive function.
  - One-card learning (OCL) and One-back memory (OBM) for working memory.
  - Identification test for attention.
- 3) Magnetic Resonance Imaging (MRI) of the brain

## 5. Results

**Case 1** is a 32-year male, with master's degree and no known previous illnesses or cerebral risk factors. He recovered from a mild COVID 19 infection in January 2022. He had no need of hospitalization or oxygen supplementation. Eleven months after the acute infection he reported persisting complaints of tiredness and forgetfulness. His MRI brain scan showed evidence of an enlarged left hippocampal perivascular space of 0.2 cm. On neuropsychological testing he showed poorer results on OCL at follow-up (Table 1).

**Case 2** is a 38-year-old male, with master's degree and a comorbidity disease - sleep apnea. During the first test he was not yet diagnosed with sleep apnea and therefore had no treatment for it. However, at follow-up he was on BiPAP therapy and was sleeping better at night with. He had suffered from a mild COVID 19 in November 2022, with no hospitalization or need for oxygen support. 5 months after COVID 19 he had complaints of forgetfulness and fatigue. His brain MRI scan showed evidence of an enlarged right hippocampal perivascular space of 0.2 cm and enlarged PVS at the posterior branch of

the left internal capsule. On neuropsychological testing he showed better results at follow-up, but still below the norm for the working memory test (Table 1).

**Case 3:** A 37-year-old female, with master's degree and no known previous illnesses or cerebral risk factors. She recovered from a mild COVID 19 infection in November 2022, with no need of oxygen support or hospitalization. 5 months later during clinical interview she reported persisting complaints of forgetfulness and absent-mindedness. Her MRI brain scan showed enlarged left hippocampal perivascular space of 0.2 cm. On neuropsychological testing she showed slight decrease on the tests for working memory at follow-up (Table 1).

**Case 4:** A 53-year-old female, with bachelor's degree and no known previous illnesses or cerebral risk factors. She recovered from a mild COVID 19 infection in November 2022. She was not hospitalized and had no need of oxygen supplementation. 5 months later she, as well, was complaining of forgetfulness and absent-mindedness. Similarly, her MRI scan showed enlarged left hippocampal perivascular space of 0.3 cm, as well as a 0.3 cm lacunar hypodense area in the left frontal lobe. Neuropsychological testing showed poorer results OCL at follow-up (Table 1).

**Final results:**

- All four subjects were healthy individuals with no neuro-psychiatric complaints prior to their COVID 19 infection.
- All four subjects suffered from a mild COVID 19 infection, none required oxygen support or hospitalization.
- During the convalescent phase all of them experienced non-specific complaint of fatigue, forgetfulness and impaired concentration.
- Two of the patients performed worse on the test One-card learning at follow-up on both outcome measures - correct and incorrect responses (Figures 1 and 2).
- In all four cases One back accuracy was lower (> 53%) than expected in healthy adults (> 70%) (<https://www.cogstate.com>).
- All four subjects showed similar changes on MRI brain scan. An enlarged hippocampal perivascular space, ranging from 0.2 to 0.3 cm, was registered on non-contrast MRI.

In General, we encountered the greatest difficulty in the performance of One Back Memory Test where we ask the patient - "Is the previous card the same?". The test assesses working memory on the base of an n-back paradigm. The Outcome measure we report here is accuracy of performance, that represents the arcsine transformation of the square root of the proportion of correct responses (<https://www.cogstate.com>).

## 6. Discussion

Our four patients are part of a larger sample of 68 subjects with persisting Long-COVID, that were tested twice, using a very sensitive computer-based neuropsychological battery – once at baseline and once 6 to 9 months later. The results showed similar cognitive impairments, affecting predominantly working memory, which is crucial for the executive functions of the individual. Thus, we confirmed that their subjective complaints had objective findings.

This result is consistent with meta-analytic data of Crivelli et al. (2022), analysing the influence of COVID-19 infection on the cognition up to 7 months after the disease. Their results show statistically significant difference in Montreal Cognitive Assessment (MoCA) score when patients were compared with healthy controls for impairments in memory and executive functions.

Moreover, all four subjects had almost identical changes on their MRI scan, showing hippocampal enlarged perivascular space (H-EPVS). According to Jae Eun Sim et al. (2020), the degree of H-EPVS was not associated with sex, smoking, alcohol consumption, hypercholesterolemia, depression, or coronary heart disease. There was however a positive correlation between H-EPVS and age, so the authors suggested that H-EPVS might be a secondary event, following medial temporal atrophy, which is independently associated with cognitive functions. Given the young age of our subjects and the lack of comorbidities we assume that H-EPVS was not associated with age or cerebrovascular risk factors. Therefore, we can hypothesize that the brain MRI abnormalities might be a structural presentation of PACS.

### 7. Conclusions

Based on the described case series we can conclude that subjective complaints in PACS could be associated with objective findings. Although we can use non-contrast MRI to detect slight structural changes of the brain, the assessment of cognitive functions is proving to be a rather challenging task, that requires sensitive, well-chosen and thorough neuro-psychological tests.

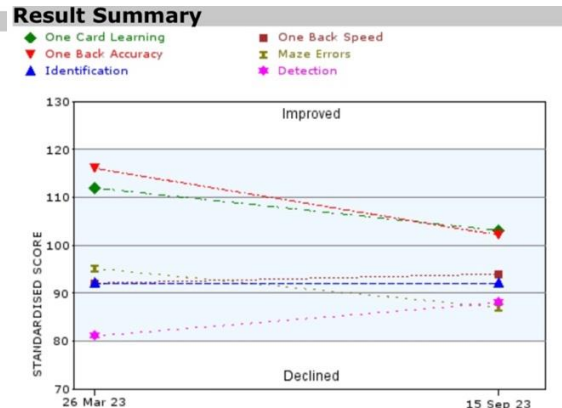
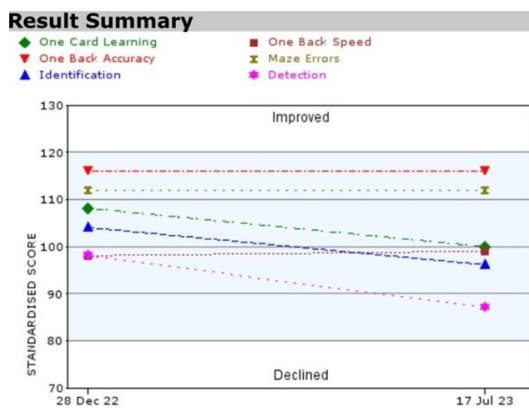
Our study may contribute to further elucidating the mechanisms of long-term cognitive complaints in post-Covid in adults.

Table 1. Outcome measures for task performance (CogState Brief Battery) in cases reported.

| Name of task             | Correct at baseline | Correct at follow-up | Errors at baseline | Errors at follow-up |
|--------------------------|---------------------|----------------------|--------------------|---------------------|
| <b>Detection</b>         |                     |                      |                    |                     |
| Case 1                   | 35                  | 35                   | 0                  | 0                   |
| Case 2                   | 35                  | 36                   | 0                  | 1                   |
| Case 3                   | 35                  | 35                   | 0                  | 0                   |
| Case 4                   | 35                  | 35                   | 0                  | 2                   |
| <b>Identification</b>    |                     |                      |                    |                     |
| Case 1                   | 30                  | 30                   | 0                  | 1                   |
| Case 2                   | 30                  | 31                   | 0                  | 1                   |
| Case 3                   | 30                  | 30                   | 0                  | 1                   |
| Case 4                   | 30                  | 30                   | 0                  | 1                   |
| <b>One-card learning</b> |                     |                      |                    |                     |
| Case 1                   | 63                  | 56                   | 17                 | 25                  |
| Case 2                   | 58                  | 68                   | 23                 | 12                  |
| Case 3                   | 60                  | 64                   | 20                 | 16                  |
| Case 4                   | 66                  | 58                   | 14                 | 22                  |
| <b>Working memory</b>    |                     |                      |                    |                     |
| Case 1                   | 31                  | 31                   | 0                  | 0                   |
| Case 2                   | 31                  | 31                   | 4                  | 0                   |
| Case 3                   | 31                  | 31                   | 0                  | 1                   |
| Case 4                   | 31                  | 31                   | 0                  | 2                   |

Figure 1. Outcome measure Case 1.

Figure 2. Outcome measure Case 4.



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# STUDY ON COGNITIVE PROFILES OF PARKINSON'S DISEASE PATIENTS WITH AND WITHOUT RAPID EYE MOVEMENT BEHAVIOR DISORDER

Zeynep Temel<sup>1,2</sup>, Ali Behram Salar<sup>3</sup>, Tuğçe Kahraman<sup>4</sup>, & Lütfü Hanoğlu<sup>5</sup>

<sup>1</sup>Psychology Department, Fatih Sultan Mehmet Vakif University (Türkiye)

<sup>2</sup>Department of Psychology, CogRes Lab, Fatih Sultan Mehmet Vakif University, Istanbul (Türkiye)

<sup>3</sup>Department of Physiology, International School of Medicine, Istanbul Medipol University (Türkiye)

<sup>4</sup>Program of Electroneurophysiology, Vocational School, Biruni University, Istanbul (Türkiye)

<sup>5</sup>Department of Neurology, School of Medicine, Istanbul Medipol University, Istanbul (Türkiye)

## Abstract

Research indicates that nearly all individuals diagnosed with Parkinson's Disease (PD) experience disruptions in sleep patterns, often emerging in the early stages of the disease. The etiology of sleep disorders is intricate, but the pathological degeneration of sleep-regulating centers in the brainstem and thalamocortical pathways appears to play a significant role. Rapid Eye Movement Behavior Disorder (RBD) is defined as a parasomnia marked by the absence of normal skeletal muscle atonia during REM sleep and has been observed in approximately one-third of PD patients. In this study, with a focus on the influence of REM sleep on cognitive processes, the aim is to compare the neurocognitive profiles of PD patients, distinguishing between those with and without RBD symptoms. Individuals meeting the diagnostic criteria of the "United Kingdom Parkinson's Disease Society Brain Bank" were included in the study. Subsequently, the patients were divided into two groups based on their scores from the Rapid Eye Movement Behavior Disorder Screening Questionnaire (RBDSQ) (cut-off point=5), with clinical assessments also being considered. Patients demonstrating a tendency toward RBD were allocated to the RBD+PD group (n = 30), while PD patients without RBD tendencies (n = 42) were assigned to the RBD-PD group. The groups were matched based on age, education level, disease duration, Hoehn and Yahr stages, Unified Parkinson's Disease Rating Scale scores, and Clinical Dementia Rating stages. Cognitive functions were assessed using various neuropsychological tests, and the neurocognitive assessment lasted an average of 2 hours. Statistical analyses were conducted using SPSS version 26, with the Independent Sample t-test employed for variables with a normal distribution, and the Mann-Whitney U test used for variables that did not exhibit a normal distribution. The results of the statistical analyses revealed that the RBD+PD group exhibited lower backward digit span scores compared to the RBD-PD group. Furthermore, phonemic and switching verbal fluencies were reduced, naming skills were impaired, and there was a decline in verbal immediate memory performance in the RBD+PD group compared to the RBD-PD group. Our results suggest that the presence of RBD is linked to decreased cognitive functions, with a notable emphasis on frontal dysfunction, in individuals diagnosed with PD.

**Keywords:** *Parkinson's disease, REM behavior disorder, frontal functions, neurocognitive assessment.*

## 1. Introduction

Understanding nonmotor symptoms in Parkinson's Disease is crucial due to their significant impact on patients' health and quality of life. While Parkinson's Disease has traditionally been viewed as a motor disorder, nonmotor symptoms are increasingly recognized as essential contributors to the overall disease burden (Kadastik-Eerme et al., 2016; Duncan et al., 2013). Non-motor symptoms are often underrecognized in clinical practice, which can result in missed opportunities for appropriate management and care (Chaudhuri et al., 2006). Research has shown that nonmotor symptoms can precede the onset of motor symptoms in Parkinson's Disease, highlighting their potential as early indicators of the condition (Hong et al., 2017; Pont-Sunyer et al., 2014).

Sleep and cognitive disorders are particularly important and prevalent in Parkinson's Disease due to their significant impact on patients' overall well-being and disease progression. Research has shown that cognitive impairment is common in Parkinson's Disease, with long-term studies indicating that most patients eventually develop dementia (Litvan et al., 2011). Cognitive dysfunction not only affects daily

functioning but also contributes to a decline in quality of life for individuals with Parkinson's Disease (Padovani et al., 2019). Additionally, cognitive impairment can be a predictor of dementia in Parkinson's disease, highlighting the importance of early recognition and management of cognitive symptoms (Hussain & Camicioli, 2017; Sommerauer et al., 2017).

The complex etiology of sleep disorders in PD is believed to involve the degeneration of sleep-regulating centers in the brainstem and thalamocortical pathways, playing a significant role in these disturbances. One prevalent sleep disorder in PD is Rapid Eye Movement Behavior Disorder (RBD), characterized by the absence of normal skeletal muscle atonia during REM sleep and observed in approximately one-third of PD patients.

Despite reports indicating a potential association between Rapid Eye Movement Sleep Behavior Disorder (RBD) in Parkinson's Disease and cognitive impairment, a consensus within the literature regarding this relationship has yet to be reached. Studies have demonstrated that the presence of RBD in Parkinson's Disease patients is associated with a higher risk of cognitive decline, particularly in attention and memory domains (Teng et al., 2023; Maggi et al., 2021). Furthermore, the relationship between RBD and cognitive dysfunction may be mediated by brainstem nuclei involved in RBD that also play a role in cognition (Yuan et al., 2022). Patients with RBD have been found to exhibit distinct patterns of cognitive impairment, affecting areas such as fronto-striatal and posterior cortex functions (Teng et al., 2023).

Moreover, RBD in Parkinson's disease has been identified as a predictor of faster deterioration in both motor and cognitive functions (Ye et al., 2022). The presence of RBD is associated with an increased frequency of cognitive impairment and a greater risk of developing dementia in individuals with Parkinson's disease (Rolinski et al., 2015). Additionally, RBD has been linked to a higher prevalence of mild cognitive impairment in Parkinson's disease patients (Oltra et al., 2022). Given the influence of REM sleep on cognitive processes, there is a growing interest in comparing the neurocognitive profiles of PD patients, with a specific focus on distinguishing between those with and without RBD symptoms. This study aims to shed light on the impact of REM sleep disturbances on cognitive functions in PD patients.

## **2. Methods**

### **2.1. Participants**

Following the criteria set by the United Kingdom Parkinson's Disease Society Brain Bank, a study encompassing 72 Parkinson's patients, aged 43 to 83, was conducted, consisting of 26 females and 46 males. Participants suspected of Parkinson-plus syndromes and those with a history of alcohol/substance abuse, stroke, head trauma, intoxication, and epileptic seizures were not included in the study. Participants were categorized into RBD+PD ( $n = 30$ ), and RBD-PD ( $n = 42$ ) groups based on clinical evaluation and scores obtained from the REM Sleep Behavior Disorders Screening Questionnaire (RBDSQ / with a cut-off point of 5). Clinical symptoms were evaluated using the Unified Parkinson's Disease Rating Scale (UPDRS) and the Hoehn Yahr Parkinson's Rating Scale (H&Y). The groups were matched in terms of age, education level, duration of disease, CDR stages, depression and apathy levels. All participants were predominantly right-handed.

### **2.2. Data collection**

Data were gathered using a demographic information form and a neuropsychometric inventory. The neuropsychometric inventory comprised various assessments, including the personal and current information subtests of the Wechsler Memory Scale (WMS), orientation subtest of WMS, verbal fluency tests, abstraction skills tests, Stroop Test Çapa Version, Clock Drawing Test (CDT), visual memory subtest of WMS, logical memory subtest of WMS, Öktem Verbal Memory Processes Test (VMPT), Boston Naming Test (BNT), Benton Face Recognition Test (BFRT), Yesavage Geriatric Depression Scale (GDS), Neuropsychiatric Inventory (NPI), and Mini-Mental State Examination (MMSE). The neuropsychological evaluation took approximately 2 hours to complete.

### **2.3. Statistical analysis**

The statistical analysis was performed using SPSS (Statistical Package for Social Science) version 26.0 for Windows. The normality of the variables was assessed using the Shapiro-Wilk Test, and their kurtosis and skewness values (+3/-3) were examined to determine the appropriate tests. Parametric tests were used for variables that met the normality criteria, while non-parametric tests were employed for those that did not. Descriptive statistics, including mean and standard deviation values, were reported for both the clinical and demographic characteristics of the participants. Specifically, the Independent Samples t-test was applied to variables with a normal distribution, whereas the Mann-Whitney U test was used for variables with a non-normal distribution. The significance level was set at  $p < .05$  to indicate statistical significance.

### 3. Results

The demographic and clinical characteristics of the groups are shown in Table 1.

Table 1. Demographic and clinical characteristics of sample.

|   | RBD+PD        | RBD-PD        | <i>t/U/χ<sup>2</sup></i> | <i>p</i> -value |
|---|---------------|---------------|--------------------------|-----------------|
|   | <i>n</i> = 30 | <i>n</i> = 42 |                          |                 |
|   | Mean (SD)     | Mean (SD)     |                          |                 |
| Age (years)   | 69.73 (8.34)  | 68.24 (8.41)  | -.747                    | .458            |
| Gender (female/male) <sup>a</sup>                   | 12/18         | 14/28         | .337                     | .561            |
| Education (years)                                   | 6.73 (4.40)   | 8.13 (4.59)   | 1.295                    | .200            |
| Duration of disease (months)                        | 79.21 (50.45) | 81.73 (48.06) | .209                     | .835            |
| UPDRS total score                                   | 45.54 (15.99) | 38.05 (18.60) | -1.786                   | .079            |
| Hoehn and Yahr Stages <sup>b,c</sup>                | 1.75          | 2.25          | 492                      | .239            |
| GDS   | 10.24 (7.31)  | 8.59 (6.38)   | -1.007                   | .318            |
| AES   | 29.74 (12.50) | 30.69 (11.49) | -.319                    | .750            |
| CDR <sup>b,c</sup>                                  | 0.5           | 1             | 492                      | .071            |
| NPI total score (frequency × severity) <sup>b</sup> | 15.68 (2.44)  | 12.52 (1.93)  | 467.500                  | .148            |
| NPI caregiver distress score <sup>b</sup>           | 9.14 (1.22)   | 8.45 (1.23)   | -.887                    | .375            |
| RBDSQ   | 6.03 (1.30)   | 2.71 (1.29)   | -10.715                  | < 0.001***      |

Note. \**p* < .05; \*\**p* < .01; \*\*\**p* < 0.001; AES = Apathy Evaluation Scale, CDR = Clinical Demanti Rating, GDS = Yesavage Geriatric Depression Scale, NPI = Neuropsychiatric Inventory, RBDSQ = REM Sleep Behavior Disorder Screening Questionnaire, SD = Standard Deviation, UPDRS = Unified Parkinson Disease Rating Scale.

<sup>a</sup> Chi-square test was used.

<sup>b</sup> Mann-Whitney U test was used.

<sup>c</sup> Median values are shown.

The a+PH group exhibited significantly lower scores compared to the RBD-PH group in the WMS reverse digit span ( $t(68) = 3.187, p > .01$ ), VMPT immediate scores ( $t(70) = 2.382, p > .05$ ), phonetic fluency scores ( $t(61) = 2.095, p > .05$ ), alternating word fluency scores ( $t(68) = 2.020, p > .05$ ), binary similarities test scores ( $t(69) = 2.455, p > .05$ ), and BNT scores ( $t(66) = 2.850, p > .01$ ). The neuropsychometric findings for both groups are summarized in Table 2.

Table 2. Neuropsychological characteristics of RBD+PD and RBD-PD groups.

|                                  |  | RBD+PD        | RBD-PD        | <i>t/U</i> | <i>p</i> -value |
|----------------------------------|--|---------------|---------------|------------|-----------------|
|                                  |  | <i>n</i> = 30 | <i>n</i> = 42 |            |                 |
|                                  |  | Mean (SD)     | Mean (SD)     |            |                 |
| General Cognitive Function       | MMSE                                   | 22.24 (4.21)  | 23.33 (2.83)  | 1.308      | .195            |
| Personal and Spatial Orientation | WMS personal and current information   | 4.53 (1.28)   | 4.95 (1.30)   | 1.336      | .186            |
|                                  | WMS orientation                        | 3.90 (1.47)   | 4.23 (1.29)   | .982       | .330            |
| Digit Span                       | Forward digit span                     | 2.43 (1.10)   | 3.18 (.84)    | .613       | .542            |
|                                  | Reverse digit span                     | 4.67 (.92)    | 4.80 (.84)    | 3.187      | .002**          |
| Verbal Memory                    | VMPT learning                          | 67.77 (22.68) | 63.55 (19.70) | .953       | .344            |
|                                  | VMPT total                             | 10.77 (3.95)  | 11.88 (3.56)  | 1.252      | .215            |
|                                  | VMPT immediate                         | 2.37 (1.54)   | 3.14 (1.22)   | 2.382      | .020*           |
| Visual Memory                    | Visual memory immediate                | 4.26 (3.31)   | 5.45 (2.23)   | 1.369      | .176            |
|                                  | Visual memory delayed                  | 2.78 (2.33)   | 3.85 (3.23)   | 1.388      | .170            |
| Executive Functions              | Phonetic fluency                       | 15.54 (7.70)  | 20.69 (11.81) | 2.095      | .040*           |
|                                  | Semantic fluency                       | 13.43 (4.60)  | 14.48 (5.87)  | .811       | .420            |
|                                  | Alternating word fluency               | 3.71 (2.40)   | 4.95 (2.67)   | 2.020      | .048*           |
|                                  | Stroop interference score <sup>a</sup> | 34.63         | 31.30         | 422.5      | .493            |
|                                  | Proverb interpretation task            | 2.20 (1.22)   | 2.54 (1.03)   | 1.262      | .211            |
|                                  | Binary similarities test               | 6.87 (2.01)   | 7.95 (1.70)   | 2.455      | .017*           |
|                                  | CDT                                    | 2.36 (1.39)   | 2.71 (1.27)   | 1.107      | .272            |
| Language                         | BNT                                    | 20.86 (4.64)  | 24.10 (4.60)  | 2.850      | .006**          |
| Visuospatial function            | BFRT                                   | 37.57 (6.48)  | 39.78 (5.07)  | 1.586      | .118            |

Note. \**p* < .05; \*\**p* < .01; \*\*\**p* < 0.001; BFRT = Benton Face Recognition Test, BNT = Boston Naming Test, CDT = Clock Drawing Test, MMSE = Mini Mental State Examination, VMPT = Öktem Verbal Memory Process Test

<sup>a</sup> Mann-Whitney U test was used and mean ranks are shown.



#### 4. Discussion

The findings that the RBD+ PD group exhibited lower backward digit span scores, reduced phonemic and switching verbal fluencies, impaired naming skills, and a decline in verbal immediate memory performance compared to the RBD- PD group suggest a significant association between RBD and cognitive functions in PD. These results indicate that the presence of RBD in PD patients is linked to a range of cognitive impairments across various domains.

The lower backward digit span scores in the RBD+ PD group may reflect deficits in working memory and cognitive flexibility. Reduced phonemic and switching verbal fluencies suggest difficulties in word generation and information processing speed. Challenges in naming abilities may imply difficulties in retrieving and expressing language, while the decline in immediate verbal memory performance may indicate struggles in retaining and recalling information stored in working memory.

These findings align with existing research that highlights the impact of RBD on cognitive functions in PD. Studies have shown that RBD is associated with a higher risk of cognitive decline, including deficits in attention, memory, and executive functions (Maggi et al., 2021; Mahmood et al., 2020; Hong et al., 2017; Zhang et al., 2016; Delazer 2012; Huang et al., 2010; Gagnon et al., 2009).

Our results indicate that the existence of RBD is associated with reduced cognitive functions in PD patients. Additionally, our findings of decreased performance on neuropsychometric tests assessing frontal functions, along with prior research, suggest a potential link between RBD and cognitive dysfunction primarily focused on frontal lobe functions. Specifically, disruptions within frontal networks offer perspectives on the intricate nature of cognitive processing impairments observed in PD patients with RBD.

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## PRO-ENVIRONMENTAL BEHAVIOUR THROUGH THE LENS OF THE MINI-IPIP6 CONSUMER PERSONALITY SCALE IN SOUTH AFRICA

Heleen Dreyer<sup>1</sup>, Daleen van der Merwe<sup>1</sup>, & Nadine Sonnenberg<sup>2</sup>

<sup>1</sup>*Africa Unit for Transdisciplinary Health Research, Faculty of Applied Health Sciences, North-West University, Potchefstroom 2520 (South Africa)*

<sup>2</sup>*Department of Consumer and Food Sciences, Hatfield Campus, University of Pretoria, 0002 (South Africa)*

### Abstract

Daily habits and various antecedents play crucial roles in consumers' pro-environmental behaviour (PEB). Personality traits are significant for environmental engagement since they manifest in habitual green activities and infrequent high-cost decisions motivated by reflective thinking. Personality is also determined by complex interactions between physical, mental, emotional, spiritual, social, and environmental contexts in which individuals function. Hence, personality traits could be a key determinant of PEB. This research analyses the relationship of consumer personalities with PEB as daily green habits in the South African emerging economy context, which may differ from high-income countries. We used an online survey with convenience and snowball sampling to recruit South African respondents (N = 478) aged 18 years and older. The International Personality Item Pool six factors (Mini-IPIP6) scale was used to determine associations between specific traits and daily PEB, especially the honesty-humility (H-H) dimension, which is concluded to be the strongest predictor for PEB. The other five personality dimensions are agreeableness (A), extraversion (E), conscientiousness (C), neuroticism (N) and openness to experience (O). Descriptive data analysis, exploratory and confirmatory factor analysis, and correlational methods were performed. Respondents generally show personality traits conducive to PEB ( $m_A = 4.02$ ;  $m_O = 3.83$ ;  $C_C = 3.78$ ;  $m_{H-H} = 3.65$ ). Correlations were shown between "C" and "conservation habits" ( $r = .261$ ;  $p < 0.05$ ) and "O" and "wasteful habits" ( $r = -.221$ ;  $p < 0.05$ ). "H-H" correlated with "personal effort habits" ( $r = .230$ ;  $p < 0.05$ ) and "wasteful habits" ( $r = -.252$ ;  $p < 0.05$ ). Consequently, respondents who tested higher on these three personality dimensions (C; H-H; O) may perform more habitual PEB, thus revealing the utility of personality dimensions in understanding consumers' PEB in an emerging economy.

**Keywords:** *Daily habits, consumer personalities, emerging economies, Mini-IPIP6 consumer personality scale, Pro-Environmental Behaviour.*

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### 1. Introduction

Consumers' daily behaviour is shrouded in careless consumption, especially in Western culture, and although such behaviour is deeply ingrained and often difficult to alter, a curbed approach based on a culture of conservation is sorely needed (Lee, 2017). Consumers' daily behaviour contributes to pro-environmental behaviour (PEB), presenting several challenges and often emphasising the disparity between their pro-environmental intentions and their failure to act accordingly, i.e., intention-behaviour gap. Bridging this gap requires more profound insight into various underlying dimensions, such as consumer personalities and potential links to PEB, particularly among culturally diverse and complex consumer populations such as in emerging economies. Therefore, this study aims to investigate the relationship of consumer personalities with PEB, such as daily green habits, in the South African emerging economy context.

### 2. Background of consumer personality – an internal influence on consumer behaviour

Consumer personality constructs have immense potential to advance understanding of consumers' behaviour and preferences (Abood, 2019). These personality traits reflect much about consumers' inner drives for behavioural patterns that demonstrate their actual or idealised selves

(Palomba, 2021). Personality is also determined by the complex interaction between individuals' physical, mental, emotional, spiritual, social, and environmental contexts (Rakib et al., 2022). Thus, reciprocal determinism is noted where personality influences behaviour and the environment, and vice versa. Therefore, personality traits are often applied to explicate consumers' behavioural patterns (Palomba, 2021), including correlations between certain personality traits and PEB (Soutter et al., 2020). Personality traits are significant for environmental engagement since they manifest in habitual green activities and infrequent high-cost decisions motivated by reflective thinking (Busic-Sontic et al., 2017). Hence, personality traits should be acknowledged as a potential determinant of PEB (Soutter et al., 2020). Given that personality traits distinguish similarities and differences among consumers (Palomba, 2021), assessing personality traits as a precursor of PEB in a diverse, multicultural emerging economy landscape such as South Africa may offer novel insight toward the pursuit of pro-environmental behavioural change and bridging the intention-behaviour gap. Many models are used to study consumers' personalities. We build on the well-known Five-Factor Model [FFM] (Goldberg, 1990) and HEXACO (Ashton & Lee, 2007) to apply the dimensions of the Mini-IPIP6 model (Sibley et al., 2011) to study the relation between consumer personalities and daily habits.

### 2.1. The Mini-IPIP6 model and pro-environmental behaviour

Sibley et al. (2011) developed the Mini-IPIP6 personality scale that measures consumer personalities based on six dimensions. These six dimensions include Openness-to-experience (O), Conscientiousness (C), Extraversion (E), Agreeableness (A), Neuroticism (N) and Honesty-Humility (H-H). The items included in the Mini-IPIP6 scale could reliably predict consumers' personality traits and have been successfully applied in several fields; although it seems comparatively neglected in sustainability research (Panno et al., 2021). Some studies have explored the link between personality and environmental attitudes, beliefs and behaviours (e.g., Busic-Sontic et al., 2017; Rothermich et al., 2021), but these remain sparse, especially in South Africa.

The six personality dimensions can differentiate between consumer personalities indicating environmental consciousness or other motivational factors such as attitudes, personal norms, perceived behavioural control, and perceived self-efficacy that may result in PEB (Busic-Sontic et al., 2017). High A, O, C, and E levels generally predict more favourable environmental engagement and several dimensions of PEB (Busic-Sontic et al., 2017). In contrast, results regarding levels of N are more inconsistent (Fatoki, 2020; Hirsh, 2010). The Mini-IPIP6 scale includes self-reported items that load onto the sixth **H-H** factor that are strongly associated with PEB, the belief that climate change is real and the willingness to adjust one's lifestyle to accommodate PEB. Thus, the Mini-IPIP6 model includes a direct measure of personality related to environmentally friendly behaviour. The **H-H** personality dimension is the strongest predictor for PEB (Marcus & Roy, 2019). Although the inclusion and application of the **H-H** construct have been neglected in previous research, especially in a South African context, it can reflect characteristics of consumers' inclination to perform PEB. Therefore, we deemed the Mini-IPIP6 model suitable for studying the relationship between consumer personality and PEB in this context.

## 3. Methodology

As part of a more extensive descriptive, cross-sectional survey, this paper only reports on the personality construct and its relationship with daily habits. We used convenience and snowball sampling to recruit respondents to participate in an online questionnaire distributed on social media platforms in South Africa. Respondents (N = 478) were mostly White (73%), female (84.7%), well-educated (tertiary = 69.2%) and young (<40 years = 53.1%), which limits the generalizability of the findings, but were nonetheless deemed appropriate for the exploratory purposes of this study.

The measures included the Mini-IPIP6 personality scale (Sibley et al., 2011; Sibley & Pirie, 2013) employing a 24-item Likert scale (1: Strongly disagree; 5: Strongly agree) to determine participants' personality dimensions profile. Additionally, we measured daily habits relating to PEB using an adapted version of the Recurring Daily Habits Scale (hereafter referred to as daily habits) (Understanding Society survey, 2018; Brick et al., 2017; Whitmarsh & O'Neill, 2010; Van der Werff *et al.*, 2013) with an adapted 39-item Likert scale (1: Never; 5: Always) used to describe the frequency of consumers' actual everyday green behaviours/habits. Data analysis included descriptive statistics and Spearman's rank-order correlations using IBM SPSS version 25. We only reported correlation coefficients showing **medium** and **large effect sizes** (medium effect size:  $r = 0.3$ ; large effect size:  $r = .5$ ;  $p < .05$ ).

We established construct validity using exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). For EFA, Principal Axis Factoring was applied for extracting factors, using direct Oblimin rotation with Kaiser normalisation. Convergent validity was determined by calculating the

Average Variance Extracted (AVE) and the composite reliability (CR) (Fornell and Larcker, 1981). The CFA models' acceptability was measured against fit indices from three different classes: Chi-square statistic divided by the degree of freedom ( $\chi^2/df$ ), the root mean square error of approximation (RMSEA) and the comparative fit index (CFI). Cronbach's alpha showed internal reliability within factors.

#### 4. Results

For EFA, all Kaiser-Meyer-Olkin Measure of sampling adequacy (KMO) values (Table 1) exceeded a value of 0.6—only factors with eigenvalues higher than one were retained. To confirm construct validity, the percentage variance explained was larger or acceptably close to 50% in the case of daily habits. Regarding convergent validity, the CR values indicate that all factors exceeded the minimum reliability of 0.70 (Fornell & Larcker, 1981). The AVE for each extracted factor in Table 1 shows that not all constructs have an AVE higher than the recommended level of 0.50, which is considered acceptable convergent validity. Those above 0.70 are considered good (Fornell & Larcker, 1981). The CFA models' goodness of fit showed two of the three fit indices measured within the parameters of a good fit, confirming an acceptable model fit.

Table 1. Summary of the exploratory and confirmatory factor analysis for the Mini-IPIP6 personality and daily habits scales.

| Scale with Factors               | KMO <sup>1</sup> | Explained variance % | $\alpha^2$ | $\chi^2/df^3$ | CFI <sup>4</sup> | RMSEA <sup>5</sup> [CI] <sup>6</sup> | AvE <sup>7</sup> | CR <sup>8</sup> |
|----------------------------------|------------------|----------------------|------------|---------------|------------------|--------------------------------------|------------------|-----------------|
| <b>Personality<sup>9</sup> #</b> | 0.713            | 55.13                |            | <b>2.790*</b> | 0.830            | <b>0.061[0.052-0.591]**</b>          |                  |                 |
| Honesty-Humility (H-H)           |                  |                      | 0.740      |               |                  |                                      | 0.529            | 0.817           |
| Extraversion (E)                 |                  |                      | 0.756      |               |                  |                                      | 0.552            | 0.831           |
| Neuroticism (N)                  |                  |                      | 0.649      |               |                  |                                      | 0.466            | 0.775           |
| Conscientiousness (C)            |                  |                      | 0.706      |               |                  |                                      | 0.528            | 0.815           |
| Openness to experience (O)       |                  |                      | 0.674      |               |                  |                                      | 0.488            | 0.792           |
| Agreeableness (A)                | 0.619            | 0.434                | 0.754      |               |                  |                                      |                  |                 |
| <b>Daily Habits<sup>10</sup></b> | 0.867            | 48.50                |            | <b>2.453*</b> | 0.811            | <b>0.005**</b>                       |                  |                 |
| Dedicated efforts                |                  |                      | 0.866      |               |                  |                                      | 0.368            | 0.845           |
| Transportation habits            |                  |                      | 0.744      |               |                  |                                      | 0.542            | 0.824           |
| Conservation habits              |                  |                      | 0.751      |               |                  |                                      | 0.215            | 0.718           |
| Wasteful habits                  |                  |                      | 0.578      |               |                  |                                      | 0.319            | 0.733           |
| Personal effort                  |                  |                      | 0.844      |               |                  |                                      | 0.568            | 0.855           |
| Daily food necessities           | 0.663            | 0.382                | 0.728      |               |                  |                                      |                  |                 |

**Blue print with an Asterix (\*; \*\*) indicates the fit indices with a good fit (at least two out of three fit indices should be acceptable)**

Blue values indicate AVE ( $\leq 0.50$ ) and CR values ( $\geq 0.70$ ) within the acceptable range (Fornell & Larcker, 1981).

<sup>1</sup> Kaiser-Meyer-Olkin Measure of sampling adequacy (KMO)

<sup>2</sup> Cronbach alpha ( $\alpha$ )

<sup>3\*</sup> Chi square divided by degrees of freedom ( $\chi^2/df$ ); fit index; should be  $< 5$  (Mueller, 1996).

<sup>4</sup> The comparative fit index (CFI): fit index; should be  $\geq 0.9$  (Mueller, 1996)

<sup>5\*\*</sup> The root mean square error of approximation (RMSEA) should be beneath  $\leq 0.1$  to confirm a good fit (Blunch, 2008).

<sup>6</sup> Confidence Interval (CI)

<sup>7</sup> Average variance extracted (AVE) computed by  $\sum \lambda^2 / \sum \lambda^2 + \sum (1 - \lambda^2)$

<sup>8</sup> Composite reliability (CR): computed by  $(\sum \lambda)^2 / (\sum \lambda)^2 + \sum (1 - \lambda^2)$ , where  $\lambda$  = factor loadings.

<sup>9</sup> Likert Scale: 1: Strongly disagree; 2: Disagree; 3: Neutral; 4: Agree; 5: Strongly agree

<sup>10</sup> Likert Scale: 1: Never; 2: Rarely; 3: Sometimes; 4: Often; 5: Always

##### 4.1. Mini-IPIP6 personality scale

The items included in the Mini-IPIP6 personality scale yielded six factors (Table 1). First, EFA was done, and six factors (containing four items each) emerged that coincide with those identified in current literature (Sibley et al., 2011; Sibley & Pirie, 2013). CFA was also done for this standardised scale, which confirmed the constructs as valid. Thus, we retained the names proposed in the literature: "honesty-humility" (H-H), "extraversion" (E), "neuroticism" (N), "conscientiousness" (C), "openness to experience" (O) and "agreeableness" (A). Respondents generally exhibited personality traits instrumental to benefiting PEB ( $m_A = 4.02$ ;  $m_O = 3.83$ ;  $m_C = 3.78$ ;  $m_{H-H} = 3.65$ ) (only dimensions correlated with daily habits were reported).

## 4.2. Relationship of personality with daily habits

Most correlations were of medium effect size (i.e., presenting tendencies), with some large, showing practical significance. **Three constructs** of the personality scale, namely “C”, “H-H”, and “O”, correlated with PEB. “C” correlated with “*conservation habits*” ( $r = .261$ ) which align with “C”’s self-discipline facet, a positive predictor of PEB because this behaviour typically needs to be repeated daily (Markowitz *et al.*, 2012), exercising conservation activities daily.

Personality “O” negatively correlated with “*wasteful habits*” ( $r = -.221$ ), showing those higher in “O” less engaged in wasteful activities. In previous studies, individuals testing higher on the O were associated with more reasoning, flexibility, ecology, environmental concern and PEB (Pavalache-Ilie & Cazan, 2018). Additionally, Rothermich *et al.* (2021) confirmed that those higher on the O dimension more often believed in the reality of climate change and that it would harm them personally, which might explain the negative correlation in our study between “O” and “*wasteful habits*”.

In the current study, “H-H” correlated positively with “*personal effort habits*” ( $r = .23$ ) and negatively with “*wasteful habits*” ( $r = -.252$ ). Thus, “H-H” may increase “*personal effort habits*” and reduce “*wasteful habits*”, which makes “H-H” a probable indicator of possible PEB, echoing previous findings (Pavalache-Ilie & Cazan, 2018). Moreover, the H-H dimension measures mutual unselfishness, an individual’s honest idea of the abilities and likeliness to have an accurate self-concept (Kähli, 2021), how a person endorses (or not) personal interests above those of others and the interest in wealth and external signs of status. These findings explain why “H-H” was associated with increased individual efforts to green behaviour as well as efforts to reduce wastage in the present study.

“N”, “E”, and “A” showed no practical significant correlations with daily habits. Most studies by other scholars also omit that “E” influences PEB, attitudes or environmental concerns (Markowitz *et al.*, 2012; Milfont & Sibley, 2012), except for a South African study showing significant associations of A and E with green purchasing behaviour (Fatoki, 2020). In contrast to our research on daily green habits, former studies reported associations of N with EC (Hirsh, 2010) and PEB (Kvasova, 2015). Yu and Yu (2017) confirm that findings may differ regarding personality dimensions when looking at environmental intentions and attitudes compared to actual behaviour, such as daily green habits.

Based on the literature, our respondents generally showed personality traits conducive to PEB, and this study highlights explicitly three consumer personality dimensions that are associated with PEB in an emerging economy context; “C”, “H-H”, and “O”. These findings can be interpreted that those respondents who test higher on these three personality dimensions may act more environmentally friendly and perform more pro-environmental daily habits.

## 5. Conclusion and unique contribution

The timely application of the Mini-IPIP6 model revealed consumer personalities (C; O; H-H) that offer a better understanding of consumers’ PEB, grouped as daily habits in our study. Ultimately, specific consumer personality dimensions rendered associations with certain groups of daily habits (“*conservation habits*”; “*wasteful habits*”; *personal effort habits*”). These results align with similar findings in developed countries, although the N and E dimensions did not render associations with PEB in our study. However, we confirmed that “H-H” is a probable indicator of possible PEB, as this dimension is associated with increased efforts to adopt green behaviour and to reduce wastage. Thus, the practical applications of these findings highlight that the H-H personality dimension can help accomplish PEB when individuals acknowledge their destructive habits of conspicuous consumption. However, identifying interventive solutions should include multiple influencing factors due to the intricacy of PEB.

Future studies should consider studying consumer personality with other personal constructs such as pro-environmental self-identity, environmental consciousness, and perceived self-efficacy, which can widen the understanding of consumers’ PEB in an emerging economy context and acknowledge patterns of behaviour among consumers. When these personal determinants are linked with daily habits (behavioural determinants) and situational factors (external determinants), a new understanding of PEB may emerge, adding to consumer behaviour knowledge and knowledge of consumers in emerging economies.

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# TRAIT EMOTIONAL INTELLIGENCE IN WOMEN WITH BREAST CANCER: INVESTIGATING PATHWAYS TOWARDS DEPRESSIVE SYMPTOMATOLOGY THROUGH BLAME

Nadia Barberis, Janine Gullo, & Marco Cannavò

Department of Health Science, Magna Graecia University, Catanzaro (Italy)

## Abstract

**Introduction:** Breast cancer (BC) is a life-threatening disease that severely affects many spheres of women's lives. Trait Emotional Intelligence (TEI) has been shown to influence one's adaptation to a challenging clinical condition. In addition, previous studies have demonstrated how attributing responsibility for negative events or emotions to external or internal sources may determine varying levels of adaptation to one's disease. Hence, it seems crucial to explore these aspects concurrently in the context of BC. This study sought to examine whether the association between depressive symptoms and TEI was mediated by (self and other) blame. **Methods:** Questionnaires were administered to 290 individuals suffering from BC to assess the variables of interest and a path analysis was performed to put the hypotheses into test. Analysis of the covariance matrices was conducted using R and solutions were generated based on maximum-likelihood estimation. Path analysis was conducted to test a model with TEI as the predictor variable, Self-blame and Other-blame as mediators, and Depression as an outcome. Estimation of the saturated model was carried out, and therefore no fit indices were reported. **Results:** Results highlighted that TEI was negatively related to Self-blame ( $\beta = -.35$ ;  $p < .001$ ), Other-blame ( $\beta = -.32$ ;  $p < .001$ ), and Depression ( $\beta = -.55$ ;  $p < .001$ ). Moreover, depression was positively related to both Self-blame ( $\beta = .11$ ;  $p < .05$ ) and Other-blame ( $\beta = .14$ ;  $p < .05$ ). In addition, both Self-blame ( $\beta = -.04$ ;  $p < .05$ ) and Other-blame ( $\beta = -.05$ ;  $p < .05$ ) showed a mediating role in the relationship between TEI and depression. **Conclusion:** Results showed that proper clarity of emotion enables individuals to adaptively regulate their emotions in response to specific life events or situations. More specifically, a greater ability to think and process emotions is associated with a lower tendency of an individual to blame themselves for negative events or circumstances and to not attribute responsibility for their condition to external sources or other people. This, in turn, may allow for better interpersonal relationships and a lower risk of interpersonal distress. Clinicians may want to implement interventions aimed at fostering TEI in their BC patients to improve their psychosocial adjustment.

**Keywords:** Breast cancer, trait emotional intelligence, blame, depression.

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## 1. Introduction

Breast cancer (BC) ranks among the most prevalent cancers in women, with around 2.3 million new cases reported (Sung et al., 2021). Recent epidemiological data reveals that BC constitutes approximately 24.5% of all cancer diagnoses, and projections indicate a global increase to 4.4 million cases by 2070 (Soerjomataram & Bray, 2021). Individuals diagnosed with breast cancer (BC) commonly confront physical changes, functional limitations, undesirable side effects, diminished quality of life, and strained interpersonal relationships (Caruso et al., 2017; Hodgkinson et al., 2006). As a result, it is unsurprising that they may concurrently grapple with persistent feelings of sadness and hopelessness, indicative of depressive symptomatology. A recent meta-analysis conducted by Pilevarzadeh et al. (2019) and encompassing 72 diverse studies emphasized the occurrence of depressive symptoms among this clinical group, uncovering a worldwide prevalence rate of 32.2%. Abundant research emphasizes that effectively handling emotions aids individuals in adapting to challenging conditions like cancer (Baziliansky et al., 2021). Within emotion-related concepts, the notion of trait emotional intelligence (trait EI) has proven valuable, providing a comprehensive framework for understanding how individuals generally respond to emotionally charged situations (Sarrionandia & Mikolajczak, 2019). Specifically, trait EI is conceived as a collection of emotion-related tendencies that capture how individuals perceive themselves in terms of processing emotions, both within themselves and others (Petrides et al., 2018).



Through the analysis of 106 diverse cross-sectional studies, Sarrionandia and Mikolajczak (2019) synthesized the existing evidence regarding possible associations between trait EI and behavioral as well as biological elements. The results suggested that trait EI significantly influences the prediction of both subjective perceptions and objective health indicators, highlighting its importance in the context of an individual's overall well-being. One of the basic premises of trait EI is that influences one's ability to interpret affect-laden pieces of information (Petrides et al., 2018) and may therefore shape individuals' tendency to attribute responsibility, fault, or accountability for adverse events or situations to internal or external sources. Cognitive strategies like self-blame and other blame have been consistently observed in oncological populations (Else-Quest et al., 2009). It is possible to infer that greater clarity of emotions given by well-developed trait EI may enable individuals to counteract feelings of distrust and helplessness and thus offset depressive states. In line with these premises, the present study aimed to examine whether the association between depressive symptoms and TEI was mediated by (self and other) blame. More specifically, it was hypothesized that trait ei was negatively linked to self-blame, other-blame, and depression. It was also hypothesized that self-blame and other-blame was positively linked to depressive states.

## 2. Method

### 2.1. Participants

The sample consisted of 290 women with breast cancer aged between 25 and 83 years old (M=52,59; SD=8,34).

### 2.2. Measures

**2.2.1. Trait emotional intelligence.** The Trait Emotional Intelligence Questionnaire- Short Form (Petrides, 2009) is a 30-item self-report form to assess Trait EI. Respondents are asked to rate, on a 7-point scale, their level of agreement with each item (e.g.: "I usually find it difficult to regulate my emotions"). Higher scores indicate higher trait EI. In the present study, internal consistency was good (Table 1).

### 2.2.2. (Self and other) blame.

**2.2.3. Depression.** The Depression Anxiety Stress Scales-21 in its Italian validation (DASS21; Bottesi et al., 2015) is a 21-item self-report questionnaire used to assess components of distress (depression, anxiety, and distress). For the current study, the Depression subscale was used (e.g.: I couldn't seem to experience any positive feeling at all). Respondents are asked to rate, on a 4-point scale, their degree of agreement with each item. Higher scores represent higher levels of pain intensity and interference. In the present study, internal consistency was good (Table 1).

### 2.3. Procedures

For this study, women were recruited from social networks of those affected by BC. The inclusion criteria were a breast cancer diagnosis of at least 1 year, no history of recurrence, and no previous instances of any other type of cancer. They completed an online survey, implying consent upon submission. All participants affirmed voluntary, anonymous participation, spending 35 to 45 minutes on the mandatory questionnaire to prevent data gaps. To broaden the sample, oncologists collaborated by sharing the survey link with their patients. No monetary compensation was provided to participants or collaborating doctors. The study adhered to ethical guidelines outlined by the Italian Association of Psychology (AIP) and the 1964 Declaration of Helsinki. Materials and procedures received prior approval from the institution's Ethical Committee for Scientific Research.

### 2.4. Data analysis

Correlations and descriptive analyses were carried out for all the observed variables. A path analysis was used to examine the relationship between trait EI, blame, and depressive symptoms. Analysis of the covariance matrices was conducted using R and solutions were generated based on maximum-likelihood estimation. Path analysis was conducted to test a model with TEI as the predictor variable, Self-blame and Other-blame as mediators, and Depression as an outcome. Estimation of the saturated model was carried out, and therefore no fit indices were reported.

### 3. Results

#### 3.1. Descriptive results and correlations

The Means, Standard Deviations, Skewness, and Kurtosis of scores of each variable are shown in Table 1. Furthermore, Table 1 illustrates the correlations among the observed variables (Table 2).

Table 1. Descriptive analyses and correlations. Note. \*  $p < .01$ .

|                | $\alpha$ | M    | SD  | Skew | Kurt | 1     | 2    | 3    |
|----------------|----------|------|-----|------|------|-------|------|------|
| 1. Trait EI    | .88      | 4.98 | .77 | -.31 | -.38 |       |      |      |
| 2. Self-blame  | .74      | 1.77 | .77 | 1.27 | 1.78 | -.35* |      |      |
| 3. Other-blame | .77      | 1.67 | .76 | 1.52 | 2.38 | -.32* | .53* |      |
| 4. Depression  | .91      | .98  | .79 | .74  | -.36 | -.60* | .37* | .37* |

#### 3.2. Mediation model

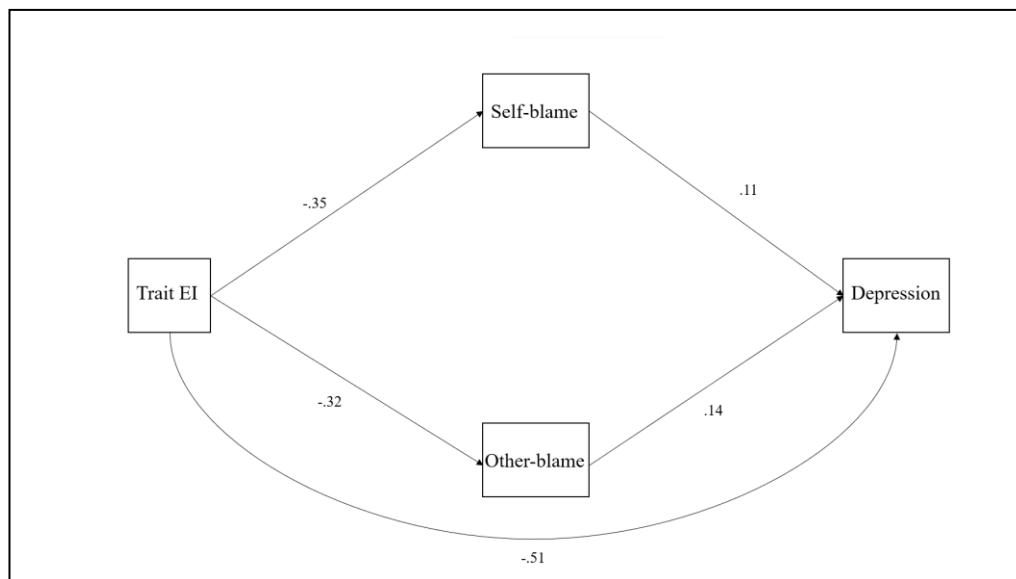
Results (Table 2) highlighted that TEI was negatively related to Self-blame ( $\beta = -.35$ ;  $p < .001$ ), Other-blame ( $\beta = -.32$ ;  $p < .001$ ), and Depression ( $\beta = -.55$ ;  $p < .001$ ). Moreover, depression was positively related to both Self-blame ( $\beta = .11$ ;  $p < .05$ ) and Other-blame ( $\beta = .14$ ;  $p < .05$ ). In addition, both Self-blame ( $\beta = -.04$ ;  $p < .05$ ) and Other-blame ( $\beta = -.05$ ;  $p < .05$ ) showed a mediating role in the relationship between TEI and depression (Figure 1).

Table 2. Path estimates, SEs and 95% CIs.

|  | $\beta$ | SE  | Lower bound<br>(BC)<br>95% CI | Upper bound<br>(BC)<br>95% CI |
|--|---------|-----|-------------------------------|-------------------------------|
| Trait EI → Self-blame                  | -.35    | .06 | -.47                          | -.23                          |
| Trait EI → Other-blame                 | -.32    | .06 | -.05                          | -.21                          |
| Trait EI → Depression                  | -.51    | .05 | -.62                          | -.43                          |
| Self-blame →<br>Depression             | .11     | .06 | .00                           | .22                           |
| Other-blame →<br>Depression            | .14     | .07 | .28                           | .15                           |
| Trait EI → Self-blame →<br>Depression  | -.04    | .02 | -.08                          | -.00                          |
| Trait EI → Other-blame<br>→ Depression | -.05    | .02 | -.10                          | -.01                          |

Note: SE = standards errors; BC 95% CI = Bias Corrected-Confidence Interval

Figure 1. Structural model between the observed variables. Coefficients shown are standardized path coefficients.



#### 4. Discussion

Fully in line with expectations, current results showed that the underdeveloped trait EI was linked to more depressive symptomatology, both directly and indirectly, with self-blame and other blame as mediators. Trait EI, in fact, may help individuals with breast cancer to better deal with their feelings and emotions, like embarrassment or anger, and consequently to better manage any concerns related to their disease, making tendency of assigning responsibility, fault, or culpability to oneself for negative events less likely to occur, resulting in less depressive states. In addition, having lower facets of trait EI may increase the prevalence of negative affectivity, which may in turn lower one's emotional clarity, thus fostering maladaptive cognitive processes attributing the cause of a situation to personal fault or external factors (Else-Quest et al., 2009). Moreover, the results highlight a negative association between depressive symptomatology and trait EI. Indeed, underdeveloped trait EI is likely to contribute to heightened psychological and relational problems (Petrides et al., 2016), consequently leading to increased feelings of depression and loneliness (Mavroveli et al., 2007). Overall, this results are consonant with the results of Smith et al. (2012) that emphasized that low trait EI predicts increased worry during the early stages of the cancer diagnostic process and with Chen et al. (2021) whose article emphasized that, among women with BC, low trait EI was associated with reduced quality of life and increased fear of cancer recurrence or progression. It is important to note that this study adopts a cross-sectional approach, emphasizing the need for future longitudinal studies to unravel the relationship between the observed variables. Moreover, the use of self-reports to assess depressive symptoms may increase a measurement bias. Despite this limitation, the findings carry significant clinical implications. Firstly, individuals with breast cancer may experience distress symptoms, prompting clinicians to thoroughly screen for internalizing issues to enhance their interventions. Secondly, the results imply that enhancing Trait EI could effectively reduce depressive states. Therefore, intervention programs for those with breast cancer should incorporate modules aimed at improving Trait EI to enhance clinical effectiveness. To conclude, this study contributes to a better comprehension of this challenging condition.

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# "I DIDN'T CHOOSE TO HAVE MY BREAST REMOVED": BRAZILIAN LESBIAN/BISEXUAL WOMEN'S JOURNEY THROUGH BREAST CANCER\*

Carolina de Souza<sup>1</sup>, Katherine Bristowe<sup>2</sup>, & Manoel Antônio dos Santos<sup>1</sup>

<sup>1</sup>*Department of Psychology, University of São Paulo (Brazil)*

<sup>2</sup>*Cicely Saunders Institute of Palliative Care, Policy and Rehabilitation, King's College London (England)*

## Abstract

Gender and sexuality are social determinants of health. Recognizing and guaranteeing the rights of women and LGBTQIA+ people is a necessary condition for them to access better living and health conditions. The literature on breast cancer and female homosexuality explores how the disease and treatment have a different impact on the quality of life of lesbian and bisexual women. Considering these assumptions, this study aims to investigate the experiences of lesbian/bisexual women who have had breast cancer and how these experiences are elaborated during cancer treatment. This is a qualitative, interpretative, cross-sectional study that has as its theoretical reference the gender studies. Three lesbian women and one bisexual woman who were diagnosed with breast cancer participated in the research. To build the corpus of analysis, individual interviews were conducted in a face-to-face situation. The interviews were digitally recorded with the participants' consent, and the audio-recorded content was transcribed verbatim and in full. Subsequently, the data were analyzed and discussed based on reflexive thematic analysis. The categories identified from the participants' interviews were discovering the diagnosis, tumor removal surgery, breast reconstruction, adjuvant therapies and hair and body hair loss. Even today, the diagnosis of cancer and the mastectomy take patients to stigmatizing places in society, which are related to the treatment of the disease itself, which, being very aggressive, causes various adverse reactions to occur in these women's bodies, such as pain, loss of movement in the arms, loss of hair and body hair, nausea, fatigue, among others. All four participants mentioned these aspects in their interviews, feeling each of the consequences of cancer treatment with greater or lesser intensity. The participants also mentioned that breast removal was a difficult aspect for them and that the chemotherapy sessions were worse than the radiotherapy sessions. None of the participants related their experiences during cancer treatment with their sexual orientation, which indicates similarities between the experiences of heterosexual and lesbian women regarding the oncological treatment. However, bearing in mind that the ideal of public policies is to offer comprehensive and humanized health care to all people, it is understood that giving a voice to sexual minorities to express themselves in the field of health is to give consistency to an organizing and structuring principle of humanization in care. This, in turn, broadens the opportunities for integrating sexual diversity into the context of cancer care.

**Keywords:** *Breast neoplasms, lesbianities, bisexuality, women's health.*

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## 1. Introduction

The population's adherence to care actions is related to the way in which health services welcome and build meaningful bonds with its users. Considering that gender and sexuality are social determinants of health, recognizing and guaranteeing the rights of women and LGBTQIA+ people is a necessary condition for these people to access better living and health conditions. However, what is observed in the health itineraries of LGBTQIA+ people are barriers that make it difficult for professionals to relate to these users. Therefore, many advances are still needed for policies aimed at the well-being of this population to be perceived and put into practice, in order to reduce inequalities and health disparities experienced by LGBTQIA+ people (Belém et al., 2018; Gomes, Murta, Facchini, & Meneghel, 2018).

Ethical attitudes, positive social representations, availability of health workers to do their best, understanding that non-heteronormative people face specific barriers in health and experience situations

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of prejudice in exclusionary social contexts, can contribute to raising awareness and improving care in health, especially in breast cancer. It is important that health services take responsibility for transforming practices and that health professionals develop permanent self-criticism and reflection on their work, so that discriminatory attitudes do not go unnoticed, and that they can be a topic of confrontation in their everyday life (Belém et al., 2018; Silva, Finkler, & Moretti-Pires, 2019).

Brazilian scientific production that addresses the topic of health and female homosexuality/bisexuality is scarce (Rodrigues, 2013; Rufino, Madeiro, Trinidad, Santos, & Freitas, 2018). Health policies aimed at tackling the difficulties and needs experienced by these women are still incipient and their implementation precarious, since they are unknown to most professionals (Rodrigues, 2013; Souza & Santos, 2022). The literature on breast cancer and female homosexuality explores how the disease and treatment have a different impact on the quality of life of lesbian and bisexual women, but there is still little knowledge produced about this topic and an almost complete absence of adequate health care technologies for lesbians and bisexuals (Souza & Santos, 2021, 2022).

Furthermore, breast cancer is experienced in different ways by patients, as each woman constructs meanings for their emotions and feelings that are influenced by the context in which they are inserted, making care for these patients a challenge for health professionals (Taylor, Harley, Absolom, Brown, & Velikova, 2016). That way, this study aims to investigate the experiences of lesbian/bisexual women who have had breast cancer and how these experiences are elaborated during cancer treatment.

## 2. Methods

### 2.1. Research design

This is a qualitative, interpretative, cross-sectional study applied to the health field (Turato, 2005).

### 2.2. Participants

Three lesbian women and one bisexual woman participated in the research. The participants were selected based on the following criteria: being 18 years old or older; self-identification as lesbian or bisexual; having had breast cancer; and consenting to participate. Women with comprehension and communication difficulties which could hinder their interviews were excluded. Table 1 presents the sociodemographic data of the participants. Names have been changed to protect women's identities.

Table 1. Sociodemographic characteristics of the participants.

| Name (fictitious) | Age (years) | Color | Sexual orientation | Occupational status      | Education*   | Family income |
|-------------------|-------------|-------|--------------------|--------------------------|--------------|---------------|
| Beatriz           | 33          | Black | Lesbian            | Psychologist             | Postgraduate | R\$ 2500      |
| Dalva             | 28          | White | Bisexual           | Educator                 | HE Complete  | R\$ 5700      |
| Amanda            | 56          | White | Lesbian            | Civil servant            | HE Complete  | R\$ 13000     |
| Malu              | 36          | Black | Lesbian            | Advertising professional | Postgraduate | R\$ 11000     |

Source: prepared by the researcher.

\*HE: Higher Education.

### 2.3. Research instruments

**2.3.1. Sociodemographic form.** A form containing sociodemographic and clinical data.

**2.3.2. Brazilian Economic Classification Criteria (CCEB).** This instrument aims to characterize the participants in terms of purchasing power and their position in the social hierarchy (Brazil, 2021).

**2.3.3. Semi-structured interview script.** A tool to access speech and used to find an effective access and investigation of the research theme (Dockhorn & Macedo, 2015).

### 2.4. Research process

**2.4.1. Data collection.** The researcher contacted participants through invitations issued to lesbian/bisexual activist groups and through researchers/professionals who work in healthcare. Then, participants were recruited through a snowball sampling process. Preliminarily, the researcher contacted the eligible women and, if they agreed, the researcher scheduled a meeting according to the participant's availability. Due to the COVID-19 pandemic, all interviews took place through a digital platform (Google

Meet). The interviews were audio and video recorded, with consent from participants. All interviews were conducted in Portuguese, from September 2021 to February 2023.

**2.4.2. Data analysis.** The interviews lasted between 48 and 152 minutes and were subsequently transcribed and analyzed following the reflexive thematic analysis approach (Braun & Clarke, 2019; Clarke, Braun, & Hayfield, 2015). The six recommended methodological steps were followed: 1) Familiarization with the data; 2) Generating initial codes; 3) Searching for themes; 4) Revising the themes; 5) Defining and naming the themes; 6) Producing the report. The coding was done with the help of MAXQDA 2022 program. After the data analysis, the results were systematized into thematic categories and interpreted based on the literature about breast cancer.

### 2.5. Ethical considerations

The study was approved by the Research Ethics Committee of the faculty where the research was conducted, CAAE No. 36146920.0.0000.5407, following the ethical procedures according to Resolution No. 466/12 (2012).

## 3. Results and discussion

The thematic analysis allowed the construction of the following thematic categories: **discovering the diagnosis, tumor removal surgery, breast reconstruction, adjuvant therapies and hair and body hair loss**. Regarding the **diagnosis discovery**, Bia reported that she felt helpless, “ungrounded”, upon learning of the cancer diagnosis and Amanda explained that she was worried when they asked her to redo the mammogram, already suspecting that the exam had indicated some change. Dalva expressed a reaction of disbelief upon learning of the diagnosis and questioned why this was happening to her: “[...] I thought, 'Man, it's not possible that this is happening to me, like, right now', and you're like [...], 'Why? Why me? Why now...?' [...]”. In fact, cancer treatment, and the moment of diagnosis itself, involves a long journey into the unknown, which brings countless fears and increases the uncertainties of affected women (Al-Azri et al., 2014; Inocenti, Santos, Loyola, Magalhães, & Panobianco, 2016). Malu, on the other hand, said that her first concern when she found out about the cancer was losing her breast. This preoccupation is widespread in the literature on breast cancer (Lima et al., 2018; Taylor et al., 2016; Vrinten et al., 2017).

Women are guided throughout their lives to realize that the female body is different from the male body, with the breasts being one of the markers that most highlight this difference. Therefore, when a serious disease such as cancer affects this organ, women see **surgery to remove the tumor** as an aggressive and mutilating process, in addition to being an attack on self-esteem and body aesthetics. All of this makes the patient feel their body in a strange way after surgery (Lima et al., 2018; Peres & Santos, 2012). Bia commented that only recently has she felt the loss of her breast as an issue that influences her relationships, her self-esteem, and her body image: “[...] I cry today for my breast. At the time [of surgery] I wasn't aware of the extent of this [loss]”. Amanda reported that she cried a lot when she saw that her breasts were different sizes after the quadrantectomy and said that she usually wears looser blouses or padded bras when she is at work to disguise this difference in size: “When I went to the room [after mastectomy], I [...] looked down, I saw one tiny breast and the other normal, right? I just cried [...]”. On the other hand, and contrary to the literature on the field, Malu stated that she did not feel any pain and that her healing was good.

About **reconstruction surgery**, Bia tried to undergo reconstruction twice, but both times there was rejection, as well as a lot of pain after the surgeries. Thus, due to the pain and understanding that the reconstruction would be something purely aesthetic and would not bring the sensitivity of the breast back, Bia understood that this surgery no longer made sense to her: “[...] I tried to do reconstruction twice, both times it went wrong [...]. I went through so much pain both times, that I abandoned the idea [...]. The breast is purely aesthetic, because it has no sensitivity, it is completely different from the other”. Amanda says she is very eager to undergo reconstruction, as she would like her breasts to return to a similar size and would like to “see everything back in place”. Malu did her reconstruction immediately after the mastectomy and she is satisfied with the result. The reconstruction surgery can often give women back their self-esteem, the feeling of being complete again and their self-image, in addition to helping to overcome the consequences of the disease (Inocenti et al., 2016; Márquez, Gil-Olarte, Molinero, & Bozal, 2022). However, it is important to remember that the way a woman sees her body before and after the changes caused by cancer can influence the way she sees herself after surgery. Thus, breast reconstruction can also be seen as another mutilation that leaves marks on women and maintains the stigma they previously felt (Inocenti et al., 2016). The participants felt the reconstruction in different ways, one as a painful process and others as a positive surgery for their self-esteem.

Regarding the **adjuvant therapies**, the literature states that chemotherapy and radiotherapy can bring different side effects: the first can cause muscle fatigue, febrile neutropenia, depression, weight gain, dyspnea, pain, nausea and vomiting (Ferreira & Franco, 2017) and the second can cause mucositis, radiodermatitis, trismus, xerostomia and osteoradionecrosis (Leite, Ferreira, Cruz, Lima, & Primo, 2013). Bia and Malu mentioned that the chemotherapy left them both weakened, with the first reporting feeling pain and nausea and the second that her immunity was lower. Dalva said that chemotherapy made her feel “dizzy”. About radiotherapy, the three participants brought skin sensitivity as a side effect, as exemplified by Dalva: “The radio was calm, the only thing that was really bad for me was an absurd burn”. Bia and Malu explained some side effects of hormone therapy. Bia described that she had hot flashes, which is consistent with the literature. Half of the participants (38 women) in the research by Lin, Chao, Bickell and Wisnivesky (2017) reported that they also experienced hot flashes as one of the side effects of hormone therapy. Malu talked about a rare side effect: she had a liver thrombosis caused by tamoxifen. Despite this rarity, there are articles linking the use of tamoxifen with liver complications (Hsu, Belkin, Han, & Pellish, 2015; Yang et al., 2016).

About the **loss of hair and body hair**, it is understood that hair is one of the symbols related to the feminine and it appears that coping with its loss by women who have had breast cancer varies according to the situation and personality of each one of them. That is why this coping has positive and negative points. Many women claim that hair loss did not affect their femininity, and for them the most important thing was to be alive. However, hair is seen as one of the greatest symbols of femininity in Western culture and its loss can be felt as a very traumatic experience that influences the self-image of breast cancer patients (Reis & Gradim, 2018; Souza et al., 2017). Malu talked about the positive aspects of hair loss and explained that she felt that being bald was important for her: “[...] Going bald was important for me as a black woman with curly hair. I was going through a hair transition [...] and I faced going bald in a very positive way [...]”. Moreover, the loss of eyelashes and eyebrows is also experienced with great discomfort (Santos, Ford, Santos, & Vieira, 2014), as stated by Bia and Dalva. For both, losing eyebrows was more worrying than losing hair, as they related their eyebrows to the expressiveness of the face. Bia explained that “Without eyebrows and eyelashes for me, that was [...] very strange [...]”.

#### 4. Conclusions

It is important to notice that none of the participants related their experiences during cancer treatment with their sexual orientation, which indicates similarities between the experiences of heterosexual and lesbian women regarding the oncological treatment. However, bearing in mind the ideal of public policies is to offer comprehensive and humanized health care to all people, it is understood that giving a voice to sexual minorities to express themselves in the field of health is to give consistency to an organizing and structuring principle of humanization in care. This, in turn, broadens the opportunities for integrating sexual diversity into the context of cancer care. The goal is for cancer treatment to be inclusive and not segregate patients. Moreover, there is an anticipation that it will heighten the awareness of health professionals regarding the significance of incorporating gender perspectives into cancer care.

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The image features a teal, textured background with visible brushstrokes and some surface wear. On the left side, there are large, expressive orange and yellow brushstrokes. A white square frame is partially visible, overlapping the orange brushstrokes and the teal background. The word "Workshops" is written in a bold, white, sans-serif font, centered within the white square frame.

# Workshops





## **AWARENESS INTEGRATION THEORY: AN EVIDENCE-BASED MULTI-MODALITY APPROACH WORKSHOP**

**Foojan Zeine<sup>1,2</sup>, & Nicole Jafari<sup>3,4</sup>**

<sup>1</sup>*California State University, Long Beach, California (USA)*

<sup>2</sup>*Founder @Awareness Integration Institute*

<sup>3</sup>*Chicago School of Professional Psychology, California (USA)*

<sup>4</sup>*Founder & Principal @Cross-Cultural Research & Educational Institute*

### **Abstract**

Awareness Integration Theory (AIT) is an evidence-based psychotherapy and psyche-education approach combining ideas from cognitive, emotional, behavioral, and body-mind theories. AIT promotes self-awareness, increases self-esteem, releases past traumas, reduces symptoms of depression and anxiety, and promotes a positive attitude toward implementing new skills for an effective and fulfilling life. The interventions promote the release, followed by integration through interventions that connect core beliefs, emotions, and the body. AIT enhances present-time mindfulness, clears the past, and envisions and creates a healthy future. Studies indicated a 60-76% decrease in depression, a 50- 60% decrease in anxiety, a 43% increase in self-esteem, and a 20% increase in self-efficacy after taking part in AIT approach. In this workshop, the nine principles and six intervention phases of AIT will be discussed in the lecture with combined experiential exercises. This workshop will benefit mental health professionals, coaches, and educators and offer tools for implementing the AIT in psychotherapy, counseling, research, and education. (50 + Participants)

**Keywords:** *Awareness Integration Theory, anxiety, evidence-based treatment, depression, psychological integration.*

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### **1. Introduction**

Awareness Integration Therapy AIT is a multi-modality psychotherapy approach that promotes clarity and positive attitudes by increasing self-awareness, releasing past traumas, unblocking psychological barriers, and envisioning a desired future. AIT encompasses interventions from prior models such as Cognitive Behavioral Therapy (CBT), Emotion Focused Therapy (EFT), Humanistic and Existential psychotherapy, Solution Focused Therapy, Rational Emotive Behavioral Therapy (REBT), Mindfulness, and Trauma-informed approaches. AIT combines these well-established interventions into a single efficient, open-structured model that embraces all aspects of the human experience to maximize efficiency and produce long-term outcomes. Studies indicated a 60-76% decrease in depression, a 50- 60% decrease in anxiety, a 43% increase in self-esteem, and a 20% increase in self-efficacy after taking part in AIT approach (Zeine, 2016).

AIT has an advantage over other psychotherapy approaches since it is a comprehensive model. It incorporates cognitive, emotional, physical, and behavioral factors as they develop a trajectory leading to their construction of future fulfillment in life, in addition to helping the client deal with the past and the present. AIT differs from previous models in that it focuses on dismantling false core ideas a person has allocated to herself or others. The person's identity, previously concentrated on trauma, is shifted. Every area of the client's life is infused with neutral or constructive functional concepts and attitudes. Instead of just disputing beliefs, AIT dismantles the selected and assigned core beliefs to prevent the trigger from being activated by challenging or replacing them with adaptive surface ideas, emotions, and actions. As a result, the client adopts a healthy persona and enjoys long-term changes (Zeine, 2023).

## 2. 9 Principles of the Awareness Integration Therapy

1) Reality is the observer's or perceiver's experience. Every human observes/perceives/creates reality based on their current state of being beliefs, emotions, and behaviors. Human beings are thus co-creators of their universe.

2) Every human being has the capacity and potential to gain the skills required for a fulfilling, joyful, functional, and successful life.

3) Physical and psychological development, personal experiences, and imitation of parents, teachers, peers, media, and society all contribute to skills acquisition.

4) The human mind interprets and produces meaning for all external inputs internally, resulting in a subjective reality that may differ from actual occurrences and other people's realities. One builds formulas, beliefs, and personal identities that relate to oneself, others, and the cosmos through the imagined reality.

5) Humans preserve their experiences cognitively, emotionally, and physically. The unintegrated experiences are waiting to be integrated. Negative core beliefs, both the feelings they cause and the location of the body experiencing the emotions at the time of the original incident, reappear in automatic thought patterns regularly. These negative fundamental beliefs foster a survival-oriented attitude. This attitude is prompted by an occurrence and results in an outcome that prevents the individual from obtaining optimal performance.

6) Neutral and positive attitudes, beliefs, and emotions can be experienced as the unintegrated belief-emotion-body state is attended to, released, and integrated into the system. The human organism has a self-organizing and self-management mechanism that keeps the system balanced and maintains a homeostatic condition. If this process is overburdened, compartmentalization temporarily restores the system to balance. If these compartmentalized states are merged back into the overall system, the system will be in balance in the long run. As a result, when a traumatic memory is accessible and the system is activated, the information is sent to an adaptive resolution and then integrated.

7) Through self-awareness, integration of one's experiences, and the formation of conscious choices about beliefs, emotions, and behaviors, one can choose a positive attitude to develop a new, positive reality and, as a result, achieve the desired results.

8) In a neutral and positive environment, new skills can be learned and practiced, improving life's capacities, experiences, outcomes, and relationships.

9) Conscious intentionality and picturing a desired result, together with excellent planning and timed action plans, increase the likelihood of achieving the intended results in all areas of life (Zarbakhsh & Zeine, 2023).

## 3. Six-phase AIT intervention

**Phase I** - this intervention phase aims to raise client awareness of how their perceptions, mental processes, emotions, and behaviors relate to their external surroundings and how those attitudes affect their day-to-day existence. Among the questions being asked at this level are: What comes to mind when you think about (someone or a particular life idea)? How do you feel about (people or ideas in a specific area of life)? How do you interact with (individuals or concepts in a specific area of life)? How does your attitude toward (individuals or ideas in a specific area of life) impact your life and the lives of others?

**Phase II**'s three goals are as follows: To A) Increase the client's awareness of how they project other people's thoughts and feelings toward them; B) Improve the client's capacity to observe how other people behave toward them and the meanings they attribute to that behavior; and C) Identify how these constructs affect the client's life. The following queries are included in this phase: What do other people think of you? What do you think people think of you? What activities do you see from others, and what meaning do you attribute to these actions? How do your assumptions affect your life and the lives of others?

**Phase III** aims to raise client awareness of their ideas, feelings, and behaviors regarding their identity in each area and how their identity interacts with and reacts to these many areas. The following questions are posed: What are your feelings about yourself in this area? How do you see yourself in this situation? What is your attitude toward yourself? And what about your attitude toward yourself?

**Phase IV** directs the experience of connecting thoughts, formulae, and schemas with emotions and the physical parts that preserve and reflect powerful emotions. This procedure is required when the client discovers a negative core belief about themselves or the world with a strong emotional charge. In this phase, the core belief is linked to the emotion held in the body and the associated memory that initiated the belief, releasing negative core beliefs, hidden intentions, shadows, and emotions locked in

the body. This technique also makes one aware of one's ability to be with, tolerate, and manage emotions successfully.

**Phase V** intends to commit to living a desired life by thinking, feeling, acting on new and selected values and developing a healthy, workable attitude and identity. As a result of this new commitment, short- and long-term goals are set, dates are set, and detailed action plans are developed to accomplish the desired result. At this point, the therapist will identify which abilities the client has mastered and which still need to be developed.

**Phase VI** attempts to develop a long-term framework that will serve as a feedback loop to ensure the continuation of the action plans and the desired and actualized results. Visual collages, audio recordings, and symbolic rituals are all examples of form (Zarbaksh & Zeine, 2023).

AIT seeks to uncover and integrate the fragmented components of the "Self" caused by upbringing or psychological traumas, heal the past, envision the future, and consciously live in the present time. This complex process involves becoming conscious of negative thoughts and damaging mental and emotional coping mechanisms established in one's fundamental beliefs and replacing them with constructive, functional, and positive conceptions (Zeine, 2021).

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## **FACING CHALLENGES: THE POSITIVE IMPACT OF PSYCHOLOGICAL FLEXIBILITY**

**Danie A. Beaulieu<sup>1</sup>, Abigail Daley<sup>1</sup>, Derek J. Gaudet<sup>1</sup>, Cecile J. Proctor<sup>1</sup>,  
Patrick Hickey<sup>2</sup>, & Lisa A. Best<sup>1</sup>**

<sup>1</sup>*Department of Psychology, University of New Brunswick (Canada)*

<sup>2</sup>*Department of Psychology, Dalhousie University (Canada)*

### **Abstract**

Individuals living with chronic illnesses face challenges that the general population may not have to face. Chronic illness is associated with lower health-related quality of life and subjective well-being. Typically, quality of life is used in medical settings as an assessment of overall physical and psychological functioning (Hays & Morales, 2001). In psychology, subjective well-being refers to the perceptions of one's life circumstances and the impact of positive and negative emotions (Diener et al., 2013). Our purpose is to explore ways to improve physical and psychological wellness, focusing on how different chronic illnesses affect overall well-being. Psychological flexibility involves being consciously present in the moment and engaging in behaviours or changing behaviours that are in alignment with personal values. Increased psychological flexibility is associated with better physical and psychological outcomes (Hulbert-Williams et al., 2015). One goal of this workshop is to use a series of demonstrations to illustrate how aspects of PF can improve wellness. Participants will complete a comprehensive measure of life satisfaction that includes the assessment of various life domains. Using average scores as a reference, we will discuss how different areas of life can be improved by increased psychological flexibility. We will lead participants through a series of exercises to highlight how PF affects wellness, focusing on strategies for change. We will discuss how PF can be targeted to improve outcomes in individuals with chronic illness. Although PF is targeted in Acceptance and Commitment Therapy, focusing on improved psychological flexibility can help lower negative psychological outcome in non-clinical populations.

**Keywords:** *Subjective well-being, quality of life, psychological flexibility, stress management.*

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### **1. Background information**

Each year, over 41,000,000 people die of a non-communicable or chronic disease, which accounts for over 17,000,000 premature deaths (WHO, 2023). In 2019, it was estimated that approximately 30% of people worldwide lived with a chronic health condition, such as cancer, heart disease, respiratory disease, autoimmune disease, and diabetes (Budreviciute et al., 2020). Budreviciute and their colleagues proposed a model to classify the risk factors of non-communicable diseases that focused on genetic, environmental, sociodemographic, self-management, and medical factors. Given that worldwide life expectancy is increasing, it is important for researchers to elucidate factors associated with symptom management to inform strategies to improve the physical and psychological wellness of individuals with a chronic condition. Thus, our purpose is to examine how specific self-management factors, including physical activity, mindfulness, psychological flexibility, and social connectivity affect subjective well-being in individuals who live with a chronic health condition.

### **2. The interaction of physical and psychological wellness**

It is crucial to make the distinction between Quality of life (QOL) or Health-Related Quality of Life (HRQOL) and Satisfaction with Life (SWL), which is a component of Subjective Well Being (SWB). It is not possible to use these terms interchangeably. HRQOL is an objective measure of well-being that focuses on physical and psychological symptoms with a focus on physical and cognitive functioning while SWB is a personal description about how happy an individual is with their life. When examined in healthy samples, HRQOL and SWB are moderately and positively correlated (e.g., Yildirim et al., 2013;  $r = .30, p < .05$ ). In healthy populations, there is still a significant correlation between these

measures, but it is lower in magnitude. Severe disability and how an individual adapts to disability-related changes can have long-term negative impacts on life satisfaction (Diener et al., 1999). People who live with chronic illness are more likely to have decreased levels of life satisfaction compared to the general population (Strine et al., 2008). There is a significant relationship between SWL and levels of HRQOL in chronic pain populations; compared to those who are satisfied with their life, individuals who are dissatisfied with their life are 5.7 percent more likely to report pain on at least 14 days in the last month (Strine et al., 2008). Strine and their colleagues also reported correlations between SWL and low social support, worsening health, mental distress, symptoms of depression/anxiety, and reduced sleep.

HRQOL questionnaires typically focus on the frequency and severity of symptoms; for example, *Does pain prevent you from doing what you need to do?* or *How well are you able to concentrate?* Questionnaires focused on quality of life may include questions focused on unique challenges associated with specific medical conditions; for example, Burroughs et al. (2004) developed a questionnaire to assess quality of life in individuals diagnosed with diabetes that included questions such as, *how often have you had a bad night of sleep because of diabetes*. Measures of SWB focus on the overall perception of one's life, with specific measures focused on the subjective experience of "happiness". Although inventories measuring SWB might include items such as, *Overall, I am happy with my life*, or *I feel good most of the time*, they generally focus on the overall assessment of specific areas of one's life, such as Personal Autonomy, Social Connectivity, Positive and Negative Emotions; see Su et al., 2014).

Examining SWB alongside HRQOL provides a more complete representation of the impacts of medical interventions because individuals with the same HRQOL may have differing levels of SWB. Conversely, physical improvements may relate to increases in HRQOL but not affect levels of SWB. Although these constructs are connected, each uniquely contributes to overall well-being and examining them concurrently provides a more holistic assessment of outcomes. These two outcome measures may also differ regarding malleability. When a patient is motivated and willing to contribute to change, SWB is malleable, with specific interventions leading to positive changes (Diener et al., 1999). Improvements in SWB can lead to improved health and longevity as well as more positive social relationships (Diener et al., 1999); however, these are not one-way causal relationships. For example, married people tend to have higher SWB and higher SWB can impact sociability and increase the quality of relationships (Diener et al., 1999). Understanding SWB and HRQOL can elucidate the complex associations between physical and psychological symptoms to inform the development of treatments to improve overall well-being.

### **2.1. Increasing psychological flexibility through acceptance and commitment therapy**

The Acceptance and Commitment Therapy (ACT) process helps individuals live a life that aligns with their values (Luoma et al., 2007). Although ACT is a behavioural therapy, it differs from Cognitive Behavioural Therapy (CBT) because there is no direction to change distorted cognitions, such as catastrophizing or black-and-white thinking. Instead, ACT helps individuals learn to interact flexibly with their positive and negative thoughts without judgment, which allows for behaviours that align with personal values despite negative internal or external experiences (Kashdan & Rottenberg, 2010). ACT is flexible and can be viewed as an approach to therapy, rather than a type of therapy (Luoma et al., 2007).

Psychological flexibility (PF) is being consciously present in the moment and engaging in behaviours or changing behaviours that are in alignment with your personal values. PF is a process amenable to change (Francis et al., 2016; Swash et al., 2017) through ACT. This change occurs by increasing resilience and teaching individuals to prevent negative thoughts and feelings from driving their behaviour. Individuals with high PF can engage with thoughts, emotions, and behaviours that align with personal values and goals and react nonjudgmentally to internal and external experiences. Because this process does not involve dismissing negative thoughts, it helps individuals actively engage with the circumstances, preventing a medical diagnosis from fully defining their sense of self (Boykin et al., 2020). Daily incorporation of PF allows individuals to focus on the present moment and more effectively cope while engaging in meaningful lives (Droutman et al., 2018). There are moderate correlations between PF and depression, anxiety, anxiety sensitivity, behavioural inhibition, and the personality factors of neuroticism (negative correlation) and extraversion (positive correlation; Kashdan & Rottenberg, 2010). Applying psychological flexibility trans diagnostically helps explain complex mental health presentations (Francis et al., 2016; Swash et al., 2017). PF significantly predicts functioning and impairment in clinical samples (Panic Disorder with Agoraphobia, Anxiety/Social Phobia), even when controlling for depressive symptoms, neuroticism, and anxiety sensitivity (Gloster et al., 2011). Generally, PF predicts levels of functioning and not specific symptomatology or diagnostic presentation, which supports research suggesting that targeting PF can improve overall functioning in a variety of patient populations.



### 3. Focus of this workshop

At the beginning of the workshop, participants will complete a comprehensive measure of life satisfaction that includes the assessment of various life domains associated with both HRQOL and SWB. Using average scores as a reference, we will discuss how different areas of life can be improved by increased psychological flexibility. We will lead participants through a series of non-clinical exercises to highlight how the three pillars of PF affects wellness, focusing on strategies for change in non-clinical populations. We will discuss our research that focuses on how PF can be targeted to improve outcomes in individuals with chronic illness, including cancer, disordered eating, brain and spinal cord injuries, and autoimmune disease. Although PF is targeted in Acceptance and Commitment Therapy, we will focus on how PF can be used to improve wellness in non-clinical populations.

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# GUIDED MINDFULNESS PRACTICES FOR HEALTHCARE PROFESSIONALS: USING NATURE TO PRACTICE SELF-CARE AND REACH INNER PEACE

**Laleh Mehrad<sup>1,2</sup>, & Nicole Jafari<sup>1,3</sup>**

<sup>1</sup>*The Chicago School of Professional Psychology (USA)*

<sup>2</sup>*Founder & Principal @Joy Self Awareness Center (USA)*

<sup>3</sup>*Founder & Principal @Global Growth Institute, Inc. (USA)*

## Abstract

According to the World Health Organization Report (2022), 23 to 46 percent of health and care workers reported anxiety during the COVID-19 pandemic, and 20 to 37 percent experienced depressive symptoms, while burnout factors rose to 52 percent. The risk factors and adverse mental health outcomes have also been reported to be higher among younger health workers, putting them in compromising positions of risking their overall well-being. In this workshop, the audience will learn the specifics of these risk factors and the adverse impact on the professional's physical and mental health. Using guided mindfulness techniques, the audience will learn how to use nature-based practices that are evidence-based and clinically proven to create protective factors, develop inner peace, and build habitual self-care practices. The primary goal of this workshop is to train healthcare professionals such as therapists, counselors, coaches, and medical professionals in the art of self-care through guided mindfulness techniques. The secondary goal of this workshop is to teach the audience how to advocate for their well-being by seeking effective interventional and supportive mental health programs while safeguarding their rights across their profession. Healthcare professionals often undermine their own well-being and neglect self-care, leading to health risks and burnout factors. Practicing self-care ensures that the individuals in the care profession build the strength to fight off things like compassion fatigue, vicarious traumatization, secondary traumatic stress, and other common challenges mental health professionals face. This workshop will highlight the importance of sharing care responsibilities among self, organization, and governing states (Guy, 2000).

**Keywords:** *Nature, meditation, mindfulness, clinicians.*

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## 1. Introduction

Stress, burnout, and professional impairment are prevalent among mental health professionals and can hurt their clinical work, while engagement in self-care can help promote therapist well-being. This literature review examines the role of self-care in promoting well-being among mental health practitioners. Specifically, empirical research is presented about specific domains of self-care practice, including awareness, balance, flexibility, physical health, social support, and spirituality. Findings from this review underscore the importance of taking a proactive approach to self-care, particularly integrating self-care directly into clinical training programs and the quality assurance processes of professional organizations within mental health (Posluns & Gall, 2019).

## 2. Overview of workshop

- Emphasize the role of mindfulness in healthcare
- Introduce the theme of using nature for guided mindfulness practices

Mindfulness-based therapies differ from mindfulness retreats, as the latter entails more intensive practice (e.g., ten hours per day) over days, weeks, or even years. In the clinical context of mindfulness-based therapies, mindfulness retreats are typically led by a meditation teacher in a residential retreat center. They are marketed to healthy populations to optimize well-being and psychological health (Lustyk et al., 2009).

Research has determined correlational determinants between exposure to nature and health. Associative evidence has also shown correlations between exposure to nature and higher cognitive function, brain activity, blood pressure, mental health, physical activity, and sleep. Results from experimental studies provide evidence of the protective effects of exposure to natural environments on mental health outcomes and cognitive function. Cross-sectional observational studies provide evidence of positive associations between nature exposure, increased physical activity levels, and decreased risk of cardiovascular disease. Longitudinal observational studies are beginning to assess the long-term effects of natural exposure on depression, anxiety, cognitive function, and chronic disease. Limitations of current knowledge include inconsistent measures of exposure to nature, the impacts of the type and quality of green space, and health effects of duration and frequency of exposure. Future directions include incorporating more rigorous study designs, investigating the underlying mechanisms of the association between green space and health, advancing exposure assessment, and evaluating sensitive periods in the early life course (Lustyk et al., 2009).

### **3. Understanding mindfulness and nature in healthcare**

Several scientific communities and international health organizations promoting an interdependent human-nature health perspective call on healthcare professionals (HCPs) to integrate this vision into their practice and become role models. However, rising cases of stress, burnout, and depression among this group jeopardize this potential and their self-care. Therefore, we conducted an exploratory qualitative study focusing on how HCPs relate to their self-care, their relationship with nature, and its implementation into their professional practice. Semi-structured interviews with 16 HCPs were executed, transcribed, and imported into NVivo. We conducted a thematic analysis using the six-step framework and two-step member-checking. Three main findings arose. First, participants employ various self-care strategies outside of work whenever possible. Second, their natural experiences can be drawn along a continuum ranging in intensity, attitude, and reciprocity, which is not disclosed during consultation. Third, the reflexive interviews may have increased awareness and agency on the former topics, termed ‘nature-connected care awareness.’ A preliminary framework to stimulate nature-connected care awareness could support HCPs in becoming role models (Jimenez et al., 2021).

### **4. Connection between nature and mindfulness**

- Nature as a Source of Calm (Our heritage from our ancestors)
- Introduce research on nature's impact on mental well-being and how connecting with nature aligns with human well-being
- Discuss how nature can enhance mindfulness practices.

### **5. Guided mindfulness practices**

- Breathing Techniques: Deep abdominal breathing exercises Emphasize the connection between breathing and mindfulness and talk about Vagus Nerve
- Script for being at the sea, or jungle, or mountain
- Grounding techniques incorporate imagery of nature to enhance the experience

### **6. Practical tips for integrating nature into daily practice**

- Brief Mindfulness Moments
- Suggest incorporating brief moments of nature throughout the day
- Mindful walking in nature
- Creating a Nature-Inspired Space
- Find ways to bring nature into the workplace or personal space

### **7. Group reflection and discussion**

- Time to share experiences
- Discuss challenges and potential solutions
- Take-home questions

How are you currently meeting your own mirroring needs? Do you get sufficient admiration, attention, and care from one or more significant individuals in your life? Can you readily identify reliable sources of nurturance, support, and praise? Who cheers for your victories and applauds when you are successful? Do you allow enough time to draw strength and energy from these meaningful relationships? Do you need to build these up or rebuild others? When have you sought mirroring from your psychotherapy clients? Supervisees? Graduate students? What were the consequences? Why did some situations turn out OK and others did not? What boundaries have you established to help you resist turning to these individuals for recognition or admiration? (Sterckx et al., 2023).

## 8. Q&A Session

- Open the floor for questions and comments
- Provide additional resources for further exploration
- Encourage continued mindfulness and self-care
- Provide contact information for follow-up questions or support

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# **MINDFULNESS BIOFEEDBACK TREATMENT FOR IMPROVED ATTENTION AND OTHER COGNITIVE FUNCTIONS: TECHNIQUE, TOOLS AND APPLICATION FOR CLINICIANS AND RESEARCHERS**

**Rose Schnabel**

*PhD*

*Ontario Institute of Education, Emotion and Learning Optimization Lab, University of Toronto (Canada)  
Top Mind Institute and York Region Therapy Center (Canada)*

## **Abstract**

The purpose of this workshop is to help mental health professionals increase knowledge of combining brief mindfulness induction and biofeedback for improved focused attention and its application to other cognitive functioning. *Background:* Selective attention task including other cognitive tasks can be negatively impacted by individual emotional arousal levels such as overstimulation or underarousal (boredom). Impairment of emotion regulation can impact academics and sports performance in children and individuals across all ages with or without disabilities. Many individuals with OCD, ADHD, depression and anxiety have difficulty with emotional control, outbursts, and rage. Often individuals have learned tools to regulate emotions for improvement in focus and attention. However, the effectiveness of emotion regulation tools is often reliant on outcome such as increased focus, sustained attention, remembering names, executing task and achieving goals. Real time feedback on psychophysiological effects of emotion regulation tools such as mindfulness can improve individual's skills, awareness, and confidence in applying learned skills. Additionally, individuals can see in real-time through biofeedback the effects of emotion regulation skills on their psychophysiological responses and are more prone to trust and transference skills to real life situations. The lack of early detection/identification of emotions can lead to difficulty in regulating the escalation of emotions and achieving optimal states of cognitive functioning. *Key points:* Psychophysiological measures of the autonomic nervous system (Electrodermal Activity, Heart Rate, Breaths Per Minute, Temperature, Muscle Tension with the use of non-wearable and wearable sensors. Techniques for Biofeedback training and Cognitive tasks with the use of Multiple Object Training Task. Review and demonstration of Mindfulness biofeedback for improved cognitive functioning. Brief review of research will be presented in the area of Mindfulness Biofeedback. *Procedure:* Information will be presented by an expert in a discussion format, with interaction and questions from attendees. A brief demonstration of Biofeedback technique with an attention task will be provided. *Description of the workshop participants:* The workshop is for mental health professionals and/or researchers who wish to develop knowledge in Multi-modal emotion regulation technique such as Mindfulness based Biofeedback treatment for disorders that impact cognitive functions. Maximum number of participants will be 50.

**Keywords:** *Biofeedback, mindfulness, emotion regulation, component process theory.*

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## **1. Introduction, theory and background**

Cognitively demanding tasks such as focused attention tasks (i.e. academic tests, assignment, listening, and reading) can be negatively impacted by the individual's emotional arousal level (i.e. overstimulation or underarousal (boredom) (Yerkes & Dodson, 1908). Impairment of emotion regulation can impact work, academic and sport performance for individuals across all ages with or without disabilities. Many individuals with OCD, ADHD, depression and anxiety have difficulty with emotional control, outbursts, and/or rage. Normal day to day distractions and stressors can make it challenging to begin time sensitive tasks. Emotional episodes or experiences can change from moment to moment (Scherer et al., 2001). The Component Model of Emotions (CPM) (Scherer et al., 2001) describes emotional responses as emergent processes that are generated by physiological and cognitive appraisals and other components that synchronize as an adaptive reaction to internal or external environments.

The application of Scherer's model to emotion regulation theory as in Gross' Process Model of Emotion Regulation (PMER) (Gross, 1998) provides a theoretical framework for the development and application of emotion regulation techniques. This framework accounts for the fluid moment to moment changes in internal and external emotional experiences. Psychophysiological feedback or Biofeedback provides a self-regulatory method for the individual to get moment-to-moment feedback while in the process of regulating an emotional episode. This ER method is a response focused process and is inline with PMER theoretical components: attention (attention deployment/mindfulness), appraisal and reappraisal (cognitive/physiological change) (Gross, 1998) This model provides a theoretical foundation for the multimodal use of Biofeedback that is combined other ER techniques, such as Mindfulness. The advancement of technology provides the biofeedback tools to self-monitor changes in our emotional experiences in real-time. With early detection and identification of emotions individuals can learn to can prevent the escalation of emotion, and identify individualized levels of emotional arousal for achieving optimal states of cognitive functioning such as improved attention. Real time feedback of the psychophysiological effects of emotion regulation strategies can improve transference of emotion regulation skills to real world situations; increase understanding, awareness, and confidence in applying learned skills.

## **2. Purpose of workshop**

The purpose of this workshop is to provide mental health professionals and researchers with an understanding of the Process Model of Emotion Regulation: Biofeedback with Mindfulness Induction for improving attention on a cognitive task (Schnabel, 2021).

## **3. Workshop outline and key points**

### **3.1. Description and demonstration of biofeedback**

Biofeedback is an emotion regulation technique that involves the identification and voluntary regulation of autonomic responses to stress with feedback equipment such as heart rate monitors, temperature sensors, or electrodermal sensors. Biofeedback can enhance and support the natural reallocation and adaptive process of emotion during selective-attention tasks. It allows the individual to identify and recognize an attention state and the moment-to-moment changes in psychophysiological arousal that occur when faced with a cognitively demanding task. Biofeedback provides the individual the opportunity to self-regulate with the presence of visual and/or auditory cues to their arousal state (Pusenjak et al., 2015; Wilson et.al., 2006; Wilson & Peper, 2011). This type of awareness can increase one's ability to recognize and regulate one's thoughts, feelings, and behaviour. In biofeedback methods, relaxation or self-alerting protocols are implemented to train emotional arousal and stress self-regulation. This is an adaptive emotion-regulation strategy to help one regulate one's stress and negative affect (Gross, 1998; Hofmann et al., 2010; Wilson & Peper, 2011).

### **3.2. Example of multimodal biofeedback treatment: mindfulness based biofeedback (MB)**

Biofeedback can be combined with other treatment Modalities. This workshop's focus is the application of brief Mindfulness induction (i.e., < 15 minutes) for shifting into the present in conjunction Biofeedback. In this multimodal approach, the effects of mindfulness can increase the mind-body connection through the use of applied sensors and software that allow the individual to observe psychophysiological changes in real-time. MB is a combined self-regulation method that includes the individual as the agent of change (Khazan, 2015). Furthermore, the MB method allows for a closer examination of a participant's self-regulation experience and the dynamic relationship between cognition and emotion (Schnabel, 2021).

### **3.3. Recent research in MB for improving attention with a cognitive task**

The multimodal technique of MB has been shown to significantly effect cognitive function such as focused attention. A randomized control study from the Emotion and Learning Optimization Lab at the University of Toronto, Canada was conducted to examine the effects of MB with electrodermal feedback for optimization of attention scores in a sample of 75 scholar athletes. Significant results showed improvement in standardized attention scores for the group who received MB training (Schnabel, 2021).

### **3.4. Practical applications**

With the advanced progression in technology, in the development of wearable sensors, biofeedback training that is learned in the clinician's office could now be practiced by clients/patients

in-between clinic sessions and in virtual follow-up sessions with the clinician. Clinicians are encouraged to train participants in person/in office with medical grade biofeedback equipment first and then supervise and guide the client/patient with the transfer of training to personal wearable sensors. The emotion regulation skills learned in biofeedback sessions can then be practiced and transferred to real life scenarios (i.e., in school settings, for test anxiety; in work settings, prior to a presentation or an important meeting; for sport prior to initiating target shooting or other attention demanding sports).

#### 4. Procedure

Information will be presented by an expert in a discussion format, with interaction and questions from attendees. A demonstration of mindfulness-based biofeedback protocol used in a recent research study with scholar athletes with volunteers from the workshop attendees will be conducted. Biofeedback equipment with Electrodermal, Heart Rate and Peripheral Temperature sensors (Thought Technology™) will be used for demonstrating common techniques and MB intervention.

#### 5. Conclusion

Through the lens of a Process Model framework, biofeedback can be used as a clinical tool to help clients/patients to capture, recognize and retrieve self-regulatory experiences and strategies needed for improving attention and other possible cognitive functions. Clinicians and clients can simultaneously see changes in internal and external emotional experiences (i.e. sympathetic and parasympathetic reactions). The application of Biofeedback technique can effectively provide immediate feedback and awareness of the mediating effects of emotion regulation strategies on an emotional episode and on performance in cognitively demanding task. The process of self-awareness can significantly impact appraisal and self-confidence, which can then result in generalization and persistence of the self-regulatory experience (Schnabel, 2021; Lazarus, 1984; Volpe, 1975, Meichenbaum, 1976). The workshop is geared towards information for mental health professionals and/or researchers who wish to develop knowledge in a multi-modal emotion regulation technique such as Mindfulness based Biofeedback treatment. Maximum number of participants will be 50.

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## PREDICTING BEHAVIOR: WHY, WHAT FOR, AND HOW

**Shulamith Kreitler**

*School of Psychological Sciences, Tel-Aviv University (Israel)  
Center for Psychooncology Research, Sheba Medical Center (Israel)*

### Abstract

The paper deals with predicting behavior in psychology. After introducing the importance of prediction in science and personal life, the failure of predicting behavior in two major domains - of personality traits and behavior and attitudes and behavior - is described. The implications, the attempts at improving the predictions and the conclusions are presented. The following part is devoted to describing the model of cognitive orientation which is a motivational-cognitive theory and methodology enabling the understanding, prediction, and changing of behavior in different domains, e.g., daily life, physical diseases and psychopathology. The basic constructs and processes of the model are presented.

**Keywords:** *Cognitive orientation, prediction, attitudes, personality, beliefs.*

### 1. Predicting in the framework of psychology

Predicting behavior is considered as a basic constituent of psychology. Predicting is important for promoting the science of psychology but has also applied benefits in therapy and education, as well as personally for enhancing self-control, and self-knowledge.

However, the attempts of predicting behavior turned out increasingly to be difficult. The two major research domains that demonstrated clearly the failure of predicting behavior dealt with the relations of personality traits and of attitudes with behavior.

#### 1.1. Personality traits and behavior

Most of the studies dealt with examining the correlations between scores on personality questionnaires and the behaviors referred to in these questionnaires, that included behaviors of all kinds, such as emotional, motor, and cognitive. The expected relations were in regard to actual behaviors, assessed or observed in reality, rather than assumed behaviors or reported by the individual themselves. The results showed clearly that the relations between the traits or personality tendencies and the corresponding behaviors were mostly nonsignificant or low and barely significant (Wu & Clark, 2003). The results did not improve appreciably when different methods were applied for assessing behavior, such as aggregate evaluations of behavior, focusing on patterns of behavior, on highly specific behaviors, on habituated behaviors, and enhancing the individuals' awareness of the assessed behavior.

The list of attempts to account for the failure in prediction includes reasons, such as depletion of the reservoir for the trait after frequent evocation; behaviors are primarily bound to situations and are not consistent across situations; traits are not stable tendencies; the stability of traits is overestimated in regard to others; the behavioral expression of the same trait may differ in different people; individuals differ in the degree to which their traits and behavior are related.

#### 1.2. Attitudes and behavior

The studies of attitudes and behavior dealt with examining the relations between the scores of subjects on questionnaires indicating support for specific attitudes and the corresponding behaviors. Again, the mass of studies showed that the relations were at best very low, barely significant, e.g., a person may score high on the attitude of honesty or respecting others or supporting the ideology of a certain party but in reality, these attitudes do not correspond to behaviors. Also attempts to replace attitudes with more specific constructs such as intention, norms or goals did not yield significant relations with behaviors (Armitage & Christian, 2003).

Again, excuses for the failure in prediction claimed that the attitudes were not clearly formulated, that their relevance for the behavior was not grasped, that the time span between learning the attitude and manifesting the behavior was too long, or the attitude and the behavior represented different ranges of manifestation (Snyder & Ickes, 1985).



In regard to both attitudes and traits it was claimed that human behavior is unpredictable because people are unreasonable while behaviors require conscious decisions based on weighing costs and benefits; or that people are reasonable but life is unpredictable; or that both people and situations are predictably unreasonable.

### **1.3. Conclusions of different kinds and on different levels**

The lack of support for the expectation that traits or attitudes would be related to behavior is disconcerting. If traits are not related to behavior, then one may wonder what use do we have for the personality questionnaires and or personality traits in general. However, the lack of support in regard to attitudes and behavior is more serious because attitudes are manifestations of values and norms, which play an important role in culture and education. If these values are not related to behavior, then educational efforts are set in doubt.

However, instead of discarding the constructs of traits, attitudes, norms, and goals as useless because they do not predict behaviors our suggestion is to focus rather on developing new conceptions about what they do reveal or enable, for example, that traits are patterns of meaning assignment variables that guide our perception and experiencing of the world; norms are triggers for considering values; goals are indicators of orientation in the behavioral sphere; while self-reports about behavior are confrontation with images of oneself one would like to project to oneself and others (Kreitler & Kreitler, 1990).

Moreover, before accepting the conclusion that behavior cannot be predicted and moving ahead, we suggest to reconsider the situation. In some cases, a disease is not curable with the existing medications, but it may be cured when more or other medications are devised or applied. Thus, the suggestion is to try another approach and construct a different model of prediction.

## **2. Constructing a new model for predicting behavior**

It is evident to a great many researchers that the key to understanding the impact of psychological factors on behavior should be sought in cognition. Cognitive elements would constitute the tools for constructing a new model. What elements of cognition could play a role in regard to behavior? Beliefs is the major component. Beliefs are units that come in different forms and kinds. For example, there are beliefs about the behavior, about appropriate situation for the behavior, about the suitable triggers of the behavior, about the reaction of others to the behavior, or about its evaluation. But do these beliefs include any indication of dynamics or formation of action? Analysis shows that the same applies to the key constructs of the 'health belief model' which is one of the best in this domain: perceived susceptibility, perceived severity, perceived benefits of the suggested action, and perceived barriers for its implementation (Jenz & Becke, 1984).

## **3. The key constructs of the Cognitive Orientation (CO) model**

The CO describes major processes intervening between input and output. it does not assume that behavior is guided by logical decision- making, or is subject to conscious voluntary control. Instead, it shows how behavior proceeds from meanings and clustered beliefs (Kreitler & Kreitler, 1976). The beliefs may orient toward rationality but also in other directions, and the outcome may seem rational or not regardless of the beliefs that oriented toward it. Further, the theory focuses on actual, observable overt behaviors as distinct from intentions, self-reported behaviors and commitments or decisions to act.

The CO theory consists of a central core model that refers to molar observable behavior but includes also further specific models that deal with physical health, emotional behavior, cognitive behavior and psychopathology. A large body of data demonstrates the predictive power of the CO theory in regard to a great variety of behaviors, including achievement, responses to stress, undergoing medical tests, eating disorders, etc., in individuals differing in age (4 to over 90), gender, ethnic background, education and IQ level (i.e., retarded individuals) and mental health (e.g., schizophrenics, paranoids) (Kreitler & Kreitler, 1982).

The major theoretical assumption of the CO approach is that cognitive contents and processes play an active-dynamic role in regard to behaviors. Behavior is considered a function of a motivational disposition, which determines the directionality of behavior, and a performance program, which determines the manner in which the behavior is carried out.

According to the CO theory, the processes intervening between input and output are grouped into four stages, characterized by metaphorical questions and answers. The first stage is initiated by an external or internal input and is focused on the question "What is it?" which guides the processes enabling the identification of the input by a limited 'initial meaning' as either a signal for a defensive, adaptive or conditioned response, a molar action, an orienting response, or as irrelevant. The second stage is devoted to further elaboration of the meaning of the input, focused on the question "What does it mean in general and what does it mean to or for me?" which results in an enriched generation of interpersonally-shared and personal meanings in terms of beliefs, designed to determine whether these beliefs require a behavioral

action. A positive answer initiates the third stage focused on the question “What will I do?” The answer is based on beliefs of the four following types: a) Beliefs about goals, which refer to actions or states desired or undesired by the individual (e.g., ‘I want to be respected by others’); b) Beliefs about rules and norms, which refer to social, ethical, esthetic and other rules and standards (e.g., ‘One should be assertive’); c) Beliefs about oneself, which express information about the self, such as one’s traits, behaviors, habits, actions or feelings (e.g., ‘I often get angry’) and d) General beliefs, which express information about reality, others and the environment (e.g., ‘The world is a dangerous place’). The beliefs refer to deep underlying meanings of the involved inputs rather than their obvious and explicit surface meanings. The scoring of the beliefs is based on assessing the extent to which they support or not the indicated action. If the majority of beliefs in at least three belief types support the action, the cluster of beliefs generates a unified tendency which represents the motivational disposition orienting toward the performance of the action.

The next stage is focused on the question “How will I do it?” The answer is in the form of a behavioral program, which is a hierarchically structured sequence of instructions specifying the strategy and tactics governing the performance of the act. There are four basic kinds of programs: a) Innately determined programs, e.g., controlling reflexes; b) Programs determined both innately and through learning, e.g., controlling instincts or language behavior; c) Programs acquired through learning, e.g., controlling culturally shaped behaviors and d) Programs constructed ad hoc, in line with relevant contextual requirements.

### 3.1. Cognitive Orientation: The methodology of behavior prediction

The predictions are based on applying the standardized procedure based on the CO theory (Kreitler, 2004). The construct applied for predicting behavior is the motivational disposition, whose strength is assessed by means of a CO questionnaire, which examines the degree to which the subject agrees to relevant beliefs orienting toward the behavior in question. The relevant beliefs are characterized in terms of form and contents. In form, they refer to the four types of beliefs, namely, beliefs about goals, rules and norms, about oneself and general beliefs about others and reality. In contents, the beliefs refer to the meanings underlying the behavior in question (called “themes”).

The themes of a particular CO questionnaire are identified by means of a standard interviewing procedure applied in regard to pretest subjects who manifest the behavior in question and to control subjects. The procedure consists of interviewing the subjects about the meanings of relevant key terms of the behavior followed by sequential (three times) questions about the personal-subjective meanings of the given responses. Repeating the questions about the meanings reveals deeper-layer meanings. Those meanings that recur in at least 50% of the interviewees with the behavior of interest and in less than 10% of the controls are selected for the final questionnaire. As a result, the beliefs in a CO questionnaire do not refer directly or indirectly to the behavior in question but only to the themes that represent the underlying meanings of this behavior. Validity of the CO questionnaire is confirmed if it enables the prediction of the behavior also in the second sample. For example, themes that concern coming late are ‘respect for others’, and ‘deciding on priorities’.

The themes and belief types define together a prediction matrix, with the belief types as headings of the columns and the themes in the rows. A CO questionnaire usually consists of four parts presented together in random order, each part representing one of the four belief types, in the form of beliefs referring to different theme-contents. Participants are requested to check on a 4-point scale the degree to which each belief is true (or correct) to them. The major variables provided by the CO questionnaire are scores for the four belief types and for each of the themes. The latter are often submitted to factor analysis for the sake of clustering.

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# MOVING FROM CONSULTATION TO PARTNERSHIP: STRATEGIES FOR MEANINGFUL PATIENT AND PUBLIC INVOLVEMENT (PPI) IN RESEARCH

Natalia Duda<sup>1</sup>, Isaiah Gitonga<sup>2</sup>, Siobhán Corrigan<sup>1</sup>, & Rebecca Maguire<sup>2</sup>

<sup>1</sup>*School of Psychology, Trinity College Dublin (Ireland)*

<sup>2</sup>*Department of Psychology, Maynooth University (Ireland)*

## Abstract

**Purpose:** We propose an interactive workshop to explore strategies for embedding patient and public involvement (PPI) throughout the research cycle, with the overarching goal of fostering meaningful collaboration and partnership between academics, practitioners, patients and members of the public. **Background:** Participatory approaches have gained significant recognition as a means of enhancing the quality, relevance and impact of research. While funding agencies and policy makers emphasize the importance of PPI, the practical challenges of involving contributors in research can lead to tokenistic or “box-ticking” practices. PPI partners often play consultative roles in the initial and end phases of projects, with little input in the entire research cycle.

**Key Points:** This workshop introduces the concept of embedded PPI, emphasizing patient and public empowerment through partnership. The session will provide a roadmap for co-creation of knowledge and provide strategies for meaningful involvement. Participants will be invited to explore benefits of and barriers to embedding PPI and will collaboratively identify strategies and skills for initiating and maintaining partnerships with stakeholders.

**Procedure:** The workshop will consist of an in-person presentation and discussion centered around implementing PPI across the research cycle. Participants will engage in a hands-on group activity in which they will identify challenges to and strategies in the context of their own research. Through case studies and scenarios, facilitators will share their experience of participatory research.

**Participants:** This workshop is designed for researchers, educators and students interested in enhancing the real-world impact of their research. 5-20 attendees are recommended for optimal interaction and discussion.

**Keywords:** *Co-design, participatory research, Patient and Public Involvement, partnership, science communication.*

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## 1. Introduction

Patient and Public Involvement (PPI) is increasingly recognized as a crucial element of research in health and healthcare. Defined by INVOLVE as research conducted 'with' or 'by' the public instead of 'to', 'for', or 'about' them (NIHS, 2021), PPI is driven by the recognition that engaging non-academic stakeholders can significantly enhance the quality, relevance, and impact of research (Gilfoyle et al., 2022; Greenhalgh et al., 2019). While still in its formative days as a normalized practice, participatory research recognizes that expertise comes in many forms and seeks to involve members of the community from the very beginning and through to the end of the research process (Chevalier & Buckles, 2019)

## 2. Challenges to embedded PPI

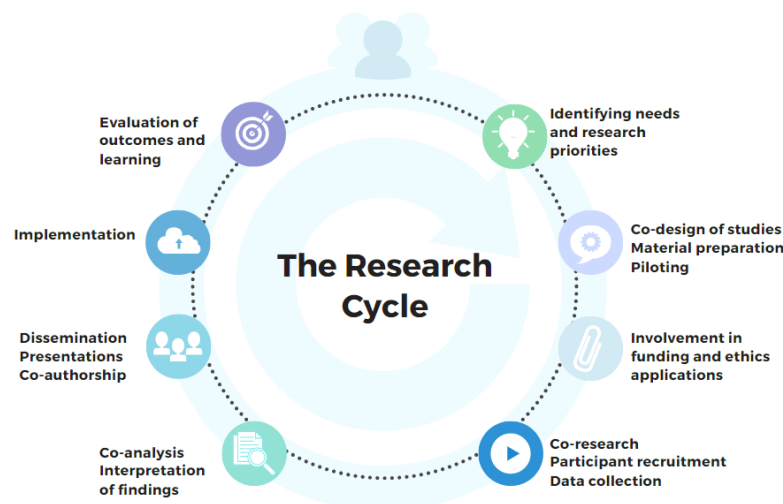
Although PPI is valued by contributors and researchers, its implementation frequently faces difficulties, resulting in superficial or tokenistic practices. Various obstacles, including organizational barriers, cultural differences, and logistical issues impede the successful execution of PPI. Ocloo and colleagues (2021) identified how perceptions of subordinate status among laypeople and uncertainties regarding participation goals act as barriers. Limited resources and institutional cultures that undervalue experiential knowledge further obstruct efforts, while concurrent pressures from funding agencies to incorporate PPI may lead to “box-ticking” practices (Aiyegbusi et al., 2023; Gilfoyle et al., 2022). Further, while inclusivity and equity are central to the ethos of PPI, marginalized populations often remain

underrepresented in initiatives (Dawson et al., 2018). Despite numerous frameworks and rationales proposed (Greenhalgh et al., 2019), there is also a lack of consensus on the best practices for PPI (McCoy et al., 2019). This is compounded by inconsistent reporting of measurable impact (Price et al., 2018).

Tokenism, where involvement in research is more symbolic than substantive, is a significant issue (Ocloo & Matthews, 2016). Despite the growing emphasis by funding bodies and policy makers on the importance of PPI, practical challenges in its implementation often result in superficial or non-involvement of non-academic stakeholders. In many cases, their role is consultative, or limited to endorsing pre-determined research agendas or providing feedback on findings, without meaningful engagement and partnership. This tokenism reflects a 'democratic deficit' in health research, where scientific knowledge is privileged over experiential knowledge (Pearce, 2021). Addressing these issues requires shifting from paternalistic attitudes to equal partnerships and confronting power dynamics and professional resistance (Liabo et al., 2022; Turnhout et al., 2020).

To ensure research is responsive to the needs and perspectives of its intended beneficiaries, it is crucial to involve stakeholders as partners in research. For PPI to be truly effective, it should be embedded into every stage of the research process (Figure 1), from identifying needs and formulating research questions to ensuring cultural sensitivity in methodologies, to collaborative analysis, implementation and dissemination of findings. This approach fosters an environment of continuous dialogue and co-learning, making partnership a cornerstone of meaningful and impactful research.

Figure 1. Embedding PPI in the research cycle.



### 3. Workshop

We will deliver an interactive workshop to explore strategies for embedding PPI throughout the research cycle, with the overarching goal of fostering meaningful collaboration and partnership between academics, practitioners, patients and members of the public. The workshop will draw on the PPI Ignite Network Values and Principles Framework (PPI Ignite Network, 2022) to provide a roadmap for embedded practices.

The objectives are to:

- (a) Review the current practices and challenges of PPI in health research;
- (b) Facilitate discussion and analysis of tokenistic practices in PPI by means of a vignette analysis;
- (c) Develop a plan for partnership by evaluating strategies and skills for embedded PPI.

This workshop is designed to be an engaging blend of theoretical presentations and practical activities focused on embedding PPI in research. Through guided exercises and facilitated discussions, attendees will explore how to integrate PPI effectively into their own research, adapting principles and techniques to their unique contexts and challenges. The workshop is tailored for researchers, educators, and students who are keen on enhancing the real-world impact of their work. The workshop accommodates 5-20 attendees to ensure optimal interaction and discussion.

## 4. Conclusion

Embedding PPI in the research cycle is crucial for creating relevant, inclusive, and impactful research. This approach should not only enhance the quality and applicability of research findings but can also foster equity, diversity and inclusion and deeper stakeholder engagement. Our workshop is expected to significantly shift attendees' perspectives on PPI, equipping them with the knowledge and tools necessary to apply PPI principles in their future work, thereby fostering a more inclusive and engaged approach in research endeavors.

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