SELF-CARE PROCESS IN CARDIOVASCULAR DISEASE: OBSERVATIONAL STUDY ON OUTPATIENTS' PATHWAY

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Abstract

Background. Cardiovascular disease (CVD) is a chronic non-communicable illness that causes more than half of all deaths across Europe. 80% of premature heart disease and stroke is preventable by effective measures availability for people at high risk. However, many such interventions are not being implemented and managed by patients. Managing such illness requires mastering self-care. Objective. Aim of our study was to identify predictive factors of illness management by evaluating emotional characteristics, emotion regulation, and self-care process in young CVD outpatients. Methods. An observational study was conducted. 61 patients, age 18–75 years (M $56.4 \pm$ sd 12.0), diagnosed with CVD participated in the study. The psychological battery was administered during clinical follow-up: Self Care of Chronic Illness Inventory, Depression Anxiety Stress Scale-21, World Health Organization Quality of Life – Bref, Difficulties in Emotion Regulation Scale. Results. The sample showed mild Anxiety and Stress degree, low Self-care, Social relationship, and emotional Clarity. First, participants were distributed into two groups by median age: Young (Y) and Old (O). Statistical analysis showed significant lower Psychological health ($p = 0.03$) and higher Non acceptance of emotional responses ($p = 0.02$) in O group. Then, participants were distributed in two groups by timing from CVD diagnosis: Early Disease (ED) and Long Disease (LD). One Way ANOVA showed lower emotional Awareness ($p=0.03$) in LD group. Controlling for diagnosis timing, negative Pearson's correlations emerged between difficulties in emotion regulation domains and self-care monitoring, self-efficacy and QoL. Conclusions. Poor adherence to CVD pharmacological therapy could be addressed by identifying the emotional characteristics, subjective emotion ability, and self-care process of patients who are or may be at risk of non-persistence. The psychological screening and tailored psychological support on these predictive factors may result in clinical benefits.

Keywords: Cardiovascular disease, self-care behaviours, quality of life, psychological dimensions.

1. Introduction

Cardiovascular disease (CVD) is a chronic non-communicable illness that causes more than half of all deaths across Europe. 80% of heart disease and stroke can be prevented adhering to effective cardiovascular treatment. Effective and well tolerated drug therapies are available to effectively control blood pressure in almost 80% of patients. However, approximately one third of patients with a history of myocardial infarction and approximately one half without do not adhere to effective cardiovascular preventive treatment (Slivnick et al., 2019). It becomes pivotal to investigate the risk factors of drug non-adherence to achieve positive therapeutic goals by reducing the risk of manifest disease. To date, few studies have focused on the patient individual factors influence on health management.

According to a new taxonomy (Vrijens et al., 2012), adherence to medications is a process characterized by 3 major components: the *initiation* (the time from prescription until the first dose of the medication is taken), the *implementation* (the extent to which a patient's actual dosing corresponds to the prescribed dosing regimen), and the *discontinuation* (it marks the end of therapy, when the next dose to be taken is omitted and the treatment is interrupted thereafter). This parameter enables the definition of persistence, which is the length of time between initiation and the last dose immediately preceding discontinuation. Non-persistence is one of the most common causes of poor adherence in hypertension with 50% of patients having stopped their treatment at 1 year (Burnier, 2019).

CVD treatment adherence is a complex dynamic process that requires the mastery of self-care: acquiring specific skills and developing a set of strategies to achieve global health goals, cope with the

disease and self-regulate one's behaviours, self-efficacy. To date, few studies have been focused on predictive psychological factors of CVD patient long term adherence and well-being.

Aim of our study was to identify predictive factors of disease management by evaluating emotional characteristics, emotion regulation, self-care process, and quality of life in young CVD patients.

2. Design

2.1. Ethical approval

This study was approved by the IRB of the University of L'Aquila (IT) (Prot. N° 37590/2021). Informed consent was obtained from each participant, and the study adhered to the Declaration of Helsinki (WMA, 2018).

2.2. Study design

We conducted an observational study.

3. Objectives

The aim of the study was to investigate predictive factors of CVD management identifying emotional characteristics and self-care process in young outpatients.

4. Methods

4.1. Participants

61 patients (39F, 22M), age 18–75 years (M 56.4 ± SD 12.0), diagnosed with CVD disease participated in the study. Inclusion criteria have been: (a) ≥ 18 years old (a); (b) CVD diagnosis; (c) cardiovascular pharmacological treatment; (d) provision of informed consent. Exclusion criteria have been: (a) alcohol or substance abuse; (b) sign of psychiatric or neurological diseases.

4.2. Measures

The psychological battery was administered during clinical follow-up: Self Care of Chronic Illness Inventory (SC-CII) to measure 5 domains of Self-care behaviors in chronic disease (Monitoring, Maintenance, Management, Self-Efficacy, Total Self-care); Depression Anxiety Stress Scale-21 (DASS-21) to measure the emotional states of Depression, Anxiety and Stress; World Health Organization Quality of Life – Bref (WHOQOL-BREF) to assess 4 domains of quality of life (QoL): Physical health, Psychological health, Social relationships, and Environment; Difficulties in Emotion Regulation Scale (DERS) to investigate individual differences in the ability to identify, accept and manage emotional experiences: Non acceptance, Goals, Impulse, Awareness, Clarity.

4.3. Procedures

Medical staff identified eligible patients. Trained clinical psychologists (blinded to the aim of the study) conducted the psychological assessment in a quiet, dedicated room. The duration of the evaluations was 20 minutes. Data were collected anonymously.

4.4. Statistical analyses

Descriptive statistics for measures were calculated in order to analyse the emotional characteristics, self-care behaviours and QoL of the sample; ANOVA analyses (followed by Tukey's post hoc analyses) were conducted to detect the statistical significance of the overall differences across the psychological variables by age and timing of diagnosis. Then, Pearson r correlations were applied. The Jamovi stat was applied for statistical analyses. The level of significance adopted was $\alpha < 0.05$.

5. Results

The sample showed mild Anxiety (M = 9.64±9.74, cut-off = 7) and Stress (M = 15.3±10.5, cut-off = 14); no signs of Depression ((M = 9.41±9.58, cut-off = 9). Moreover, participants reported low Total Self-care (M = 69.0±11.6, cut-off = 70), low Social relationship (M 44.5, SD±10.7), and emotional Clarity (M 5.46, SD±2.71).

First, we wanted to analyse age effect on emotional variables, Self-care behaviours, QoL, and emotion regulation. Participants were distributed into two groups by median age (58 years old): Young group (Y) and Old group (O). One-way ANOVA (2 x 5) was conducted to compare performance of Y and

O groups on WHOQOL-BREF domains. Statistical analysis showed significant lower Psychological health ($F(4,6) = 59$; ŋ 9,1; $p = 0.03$) in O group. One-way ANOVA (2 x 5) was conducted to compare performance of Y and O groups on DERS domains. Statistical analysis showed significant higher Non acceptance ($F(5,2) = 57,2$; ŋ -3,1; $p = 0.02$) in O group. No other significant differences emerged.

Then, we wanted to analyze CVD diagnosis timing effect on emotional variables, Self-care behaviours, QoL, and emotion regulation. Participants were distributed into two groups by timing from CVD diagnosis (median 84 months): Early Disease (ED, n.31) and Long Disease (LD, n.30). One way ANOVA (2 x 5) comparing DERS by CVD timing diagnosis groups (ED, LD) showed significant lower Awareness ($F(4,6) = 58,3$; ŋ -1,66; $p = 0.03$) in LD group. No other significant differences emerged.

Controlling for diagnosis timing, negative Pearson's correlations emerged between Awareness and Monitoring ($p=0.005$) and Self-efficacy ($p <.001$); between Clarity and Self-efficacy ($p=0.012$). Negative correlation emerged between Non Acceptance and WHO ($p <.001$) (Psychological health ($r = -0,5$), Physical health ($r = -0,4$), Social relationship ($r = -0,4$), Environmet ($r = -0,4$). Negative correlation emerged between Goals and WHO ($p <.001$) (Psychological health ($r = -0,6$), Physical health ($r = -0,5$), Social relationship ($r = -0,5$), Environment ($r = -0,5$); between emotional Clarity and WHO Psychological health ($r = -0,4$; $p <.001$), Physical health ($r = -0,3$; $p=0.004$), Social relationship ($r = -0,3$; $p=0.005$), Environment ($r = -0,3$; $p=0.008$); between emotional Impulse and WHO ($p< .001$) (Psychological health ($r = -0,5$), Social relationship ($r = -0,4$), Environment ($r = -0,5$) and Physical health ($r = -0,3$; $p=0.004$).

6. Discussion

This study examined the psychological dimensions, QoL, self-care process of CVD outpatients who are in cardiovascular treatment to identify predictive factors of illness management.

Our study confirmed data literature on the psychological vulnerability of CVD patients (Silverman et al., 2019): our sample showed signs of anxiety and stress. Moreover, our sample highlighted poor adherence to cardiovascular treatment management, low social relationship and lack of emotional clarity.

Regarding to the aging and CVD, many older adults receiving pharmacological therapy may already have significant multimorbidity that complicate treatment outcomes and exacerbate vulnerability in therapy adherence (Forman et al., 2018). Our results confirmed the vulnerability of older patients: O group showed significantly lower psychological health and higher non-acceptance of emotional responses.

Non-persistence is one of the most common causes of poor adherence in CVD patients. According to this, our results showed lack of emotional awareness in patients diagnosed for long time. Interestingly, our findings showed negative correlations between emotion regulation problems and the patient's ability to monitor and recognize early signs and symptoms of CVD and the self-efficacy in carrying out specific self-care behaviours as well as with QoL.

7. Conclusions

Poor adherence to CVD pharmacological therapy could be addressed by identifying the emotional characteristics, subjective emotion ability, and self-care process of patients who are or may be at risk of non-persistence. In clinical practice, psychological screening can be an effective tool for detecting predictive factors in the management of the CVD patient's health and adherence to medical treatment. The identification and appropriate support of these factors may result in clinical benefits.

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