

FACTORS OF DISTRESS IN ENDOMETRIOSIS: THE INTERPLAY BETWEEN TRAIT EMOTIONAL INTELLIGENCE AND PAIN

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Abstract

Introduction: Endometriosis is a gynecological condition characterized by the presence of endometrial-like tissue outside of the uterus. Several studies shown the importance of pain-related symptomatology in endometriosis, which has been linked to high levels of depression, anxiety, and stress. Furthermore, consistent findings revealed that pain symptoms do not always correlate with the severity of endometriosis, showing that other factors such as psychological and emotional factors may influence pain perception. In this regard, Trait Emotional Intelligence (Trait EI) was found to be a relevant antecedent for adjustment to one's medical condition.

The current study sought to verify whether the association between Trait Emotional Intelligence and General distress (depression symptoms, anxiety symptoms, and stress) in people with endometriosis would be mediated by Pain (intensity and interference with enjoyment of life, and general activity).

Methods: In a sample of 276 women with endometriosis aged between 18 and 40 years old ($M=30.28$; $SD=6.07$) instruments were administered to measure Trait EI, Pain and General Distress.

Results: Results of this study showed that Trait EI was negatively related to Pain and General distress, whereas General distress was positively associated to Pain. Furthermore, Pain has shown a mediation role in the relation between Trait EI and General distress.

Discussion: Individuals with a low trait EI may have difficulty requesting support from significant others or physicians, as well as engaging in healthy activities while dealing with pain-related symptomatology, which may foster the onset of internalizing symptomatology. Intervention programs for individuals with endometriosis may implement modules aimed at fostering Trait EI to successfully cope with pain and should carefully screen for internalizing symptomatology to improve their clinical efficacy.

Keywords: *Endometriosis, emotional intelligence, pain, distress.*

1. Introduction

Endometriosis is a long-term gynecological condition, mainly characterized by growth of endometrial-like tissue outside the uterine cavity (Johnson et al., 2016). Previous findings highlighted the central role of pain-related symptomatology in endometriosis (Evans et al., 2020), which may be associated with impaired quality of life and higher levels of stress, anxiety and depression (Warzecha et al., 2020). When compared to patients with milder symptoms or controls, individuals reporting higher degrees of pain generally experience more severe internalizing symptomatology (Friedl et al., 2015). At the same time, subjective perceptions of pain vary among individuals with endometriosis and do not always correlate with clinical severity of the illness (Chapron et al., 2012; Vercellini et al., 2006). This may suggest that other components, such as psychological and emotional dimensions may account for individual variation in pain perception. Among psychological factors, previous studies emphasized the role of trait emotional intelligence when dealing with emotionally taxing situations in medical settings (Sarrionandia & Mikolajczak, 2020).

Trait EI is in fact a set of dispositions and self-perceptions related to one's emotional abilities (Petrides, Pita, & Kokkinaki, 2007) that past findings have pointed to as closely linked to one's adjustment to chronic illnesses. Specifically, the meta-analysis conducted by Sarrionandia & Mikolajczak (2020) comprising 106 different studies and observing a broad spectrum of clinical populations suggested

that trait EI is a key predictor of both subjective and objective health indicators. Given that poor understanding of one's and others' emotions hinder individuals' ability to manage daily stressors (Baudry et al., 2018) lower ability to manage and cope with pain is likely to occur. Furthermore, people with low trait EI are more likely to have psychological and interpersonal problems (Petrides et al. 2016), which may foster distress symptoms (Russo et al. 2011; Andrei & Petrides, 2013).

In light of the above findings, the present study sought to test the hypothesis that an association between trait EI and General distress (anxiety, depression, and stress) in individuals with endometriosis would be mediated by Pain. Specifically, the goal of this research was to test a model in which lower Trait EI predict higher levels of Pain and General Distress, whilst higher pain predicts higher General distress.

2. Method

2.1. Participants

The sample consisted 276 women with endometriosis aged between 18 and 40 years old ($M=3028$; $SD=6.07$).

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. Participants are required 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. Pain perception. The Pain Intensity and Interference scale (PEG; Krebs et al., 2009) is a 3-item self-report questionnaire used to assess perceived pain intensity and to what extent it interferes with one's life. Participants are required to rate, on a 11-point scale, their level of agreement with each item (e.g.: What number best describes your pain on average in the past week?). Higher scores represent higher levels of pain intensity and interference. In the present study, internal consistency was good (Table 1).

2.2.3. General distress. 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). Participants are required to rate, on a 4-point scale, their level of agreement with each item (e.g.: I couldn't seem to experience any positive feeling at all). Higher scores represent higher levels of pain intensity and interference. In the present study, internal consistency was good (Table 1).

2.3. Procedure

Participants were enrolled through social groups of women's associations with endometriosis via targeted advertisements. The inclusion criteria were: age of majority, Italian nationality and having a diagnosis of endometriosis. Women filled an online survey, with consent implied by submission. All questions in the electronic survey had been set as mandatory and therefore no data was missing. Participants were guaranteed the anonymity of their data. The data were then analyzed using IBM SPSS and the lavaan Package for R with the integration of RStudio.

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).

3.2. Mediation model

Structural Equation Modelling with latent variables was conducted to test a model with Trait EI as predictor variables, Pain as mediator, General Distress as outcome. For Trait EI and Pain latent constructs a parceling approach was used, while for General Distress latent variable the three scales that rate Anxiety, Depression and Stress were used. The model showed adequate fit indices, $\chi^2(24) = 64.16$; $p < .01$, CFI = .98, SMSR = .04, RMSEA = .08 (90% CI = .06 – .10). Trait EI was associated with Pain ($\beta = -.14$) and General Distress ($\beta = -.61$), moreover, Pain related with General Distress ($\beta = .22$). In addition, a significant indirect path was found from Trait EI to General Distress by Pain ($\beta = -.03$).

4. Discussion

The purpose of this study was to test a mediation model in which the relationship between Trait EI and General distress is mediated by Pain. As expected, results of this study showed that Trait EI is negatively correlated with both pain and symptoms of distress. As suggested by Petrides et al. (2007) individuals who have more negative perceptions of their emotion-related abilities and behaviors have more negative perceptions of their emotion-related abilities and behaviors, and this may turn into a source of internalizing distress. In a similar vein, underdeveloped Trait EI would render individuals vulnerable to greater pain intensity and interference because of an inability to comprehend and utilize affect-laden informations and to cope with stressors (Baudry et al., 2018).

In line with the expectations, Pain was positively associated with General distress, because long-term exposure to aversive events like painful symptomatology associated with endometriosis may be viewed as inescapable or unavoidable, thereby leading to a sense of uncontrollability (Trindade, Mendes, & Ferreira, 2020). As a result, individuals may be predisposed to depressive-like symptomatology in the long run.

Moreover, Pain showed a mediation role in the relationship between Trait EI and General distress. In other words, a lack of awareness of one's own and others' emotions may render difficult to understand and use emotion-related information to cope with difficult situations (Baudry et al., 2018), such as seeking support from others or engaging in healthier behaviors, thereby lowering individuals' motivation to adhere to treatments and, in turn, fostering the onset of distressing states. This study is in line with previous insights suggesting that Trait EI may be a relevant dimension in medical settings (Sarrionandia Mikolajczak, 2020) but extended those finding by assessing a burdening gynecological condition like endometriosis.

Of note this study is cross-sectional, and thus future studies with a longitudinal design are needed to disentangle the relationship between the observed variables. Despite this limitation, there findings have several clinical implications. First of all, individuals with endometriosis may develop symptoms of distress. Clinicians should carefully screen for the presence of internalizing symptomatology to improve their clinical interventions. Second, the current findings suggest that fostering Trait EI may have a desirable effect on reducing psychological distress, intervention programs for individuals with Endometriosis should thus include a module aimed at fostering one's Trait EI to improve their clinical efficacy.

Finally, the current study provides a contribution regarding the psychological underpinnings of pain in Endometriosis, which may help Finally, integrating a more nuanced description of the psychological factors related to pain in Endometriosis may provide a broader understanding of this burdening disease.

Table 1. Descriptive analyses and correlations between the observed variables.

	α	M	SD	Skew	Kurt	1	2	3	4	5
1. Depression	.87	1.38	.86	.29	-1.10					
2. Anxiety	.85	1.15	.77	.58	-.45	.66**				
3. Stress	.90	1.74	.74	-.11	-.92	.75**	.68**			
4. General distress	.95	1.42	.71	.31	-.84	.91**	.87**	.90**		
5. Pain	.96	4.69	2.79	-.36	-1.08	.26**	.28**	.25**	.30**	
6. Trait EI	.89	4.67	.84	-.04	-.36	-.59**	-.36**	-.43**	-.52**	-.12

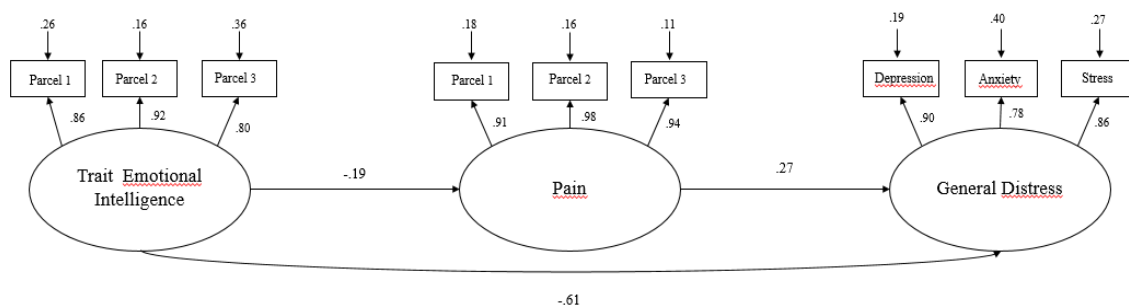
Note: * $p < .05$. ** $p < .01$.

Table 2. Path estimates, SEs and 95% CIs.

	β	SE	Lower bound (BC) 95% CI	Upper bound (BC) 95% CI
Trait EI → Pain	-.19	.17	-.88	-.23
Pain → General distress	.27	.01	.04	.09
Trait EI → General distress	-.61	.04	-.51	-.36
Trait EI → Pain → General distress	-.05	.01	-.07	-.02

Note: SE = standards errors; BC 95% CI = Bias Corrected-Confidence Interval.

Figure 1. Mediation model between the observed variables. Coefficients shown are standardized path coefficients.



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