Illness perception, pain coping, and self-compassion: a cross-sectional study of Polish women with endometriosis

Małgorzata Puchalska-Wasyl[1]*, Katarzyna Wikiera[2]

[1]The John Paul II Catholic University of Lublin, Poland
[2]Euro-Medica Child and Adolescent Psychological Clinic, Sieniawa, Poland

Submitted: 10 November 2025; **Accepted:** 29 January 2026
Online publication: 20 October 2026

Arch Med Sci 2026; 22 (5): 2640–2648
DOI: https://doi.org/10.5114/aoms/217516
Copyright © 2026 Termedia & Banach

***Corresponding author:**
Małgorzata Puchalska-Wasyl
The John Paul II
Catholic University
of Lublin, Poland
E-mail: wasyl@kul.pl

Abstract

Introduction: Endometriosis is a chronic inflammatory gynecological disease, one of whose main symptoms is chronic pain. Generally, negative perceptions of the disease as an obstacle/loss, harm, or threat are linked to poorer adjustment, whereas positive perceptions of illness as a challenge, value, or profit show the opposite pattern. The study aimed to investigate whether pain-coping strategies and self-compassion in women with endometriosis were associated with the perception of their disease in terms of obstacle/loss, threat, harm, value, challenge, and profit.
Material and methods: The study group consisted of 265 Polish women with a diagnosis of endometriosis. The online survey included three measures: the Self-Compassion Scale (SCS-PL), the Coping Strategies Questionnaire (CSQ), and the Disease-Related Appraisals Scale (DRAS).
Results: Perceiving illness in negative terms – as an obstacle/loss, threat, or harm – was associated with catastrophizing about pain. Threat and harm categories were also inversely related to self-compassion. Perceptions of endometriosis in terms of value or profit were positively associated with the strategy of reinterpreting pain sensations and by self-compassion. The profit category was also negatively associated with coping self-statements, whereas viewing illness as value or challenge was associated with the praying and hoping strategy.
Conclusions: Higher self-compassion and greater use of reinterpreting pain sensations were associated with more positive perceptions of endometriosis, whereas catastrophizing was associated with more negative perceptions. These findings may help inform psychological interventions supporting women with endometriosis, although longitudinal or intervention studies are needed to determine whether modifying these factors changes illness perceptions and improves functioning or quality of life.

Key words: endometriosis, perception of illness, self-compassion, pain-coping strategies, chronic pain.

Introduction

Endometriosis is a chronic inflammatory disease in which endometrial cells are found outside the uterine cavity [1]. It affects around 10% of women worldwide [2]. The most common symptoms include chronic pelvic pain, painful and heavy menstruation, dyspareunia, and difficulties conceiving [3]. Endometriosis, accompanied by long-lasting pain, fatigue,

Creative Commons licenses: This is an Open Access article distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International (CC BY -NC -SA 4.0). License (http://creativecommons.org/licenses/by-nc-sa/4.0/).

and daily limitations, significantly disrupts women's psychosocial functioning and reduces their quality of life, as well as physical and psychological well-being [2, 4]. Low mood, depression, anxiety, feelings of guilt, shame, and low self-esteem are typical of women with endometriosis [5–7]. Additionally, lack of understanding from close family members may result in feelings of loneliness and social withdrawal [8, 9].

According to Lazarus and Folkman [10], stress experienced during illness is influenced both by its physical consequences and by the meaning that patients assign to it (i.e., their subjective interpretation). Lipowski [11] distinguished several categories that people commonly attribute to their condition. Categories with positive meaning include: challenge – seeing illness as a chance for mobilization or growth; profit – perceiving secondary gains such as receiving care or reduced duties; and value – attributing deeper significance to the illness and seeing it as an opportunity for life reflection. Categories with negative meaning include: obstacle/loss – viewing illness as blocking goals and causing loss of health or independence; threat – experiencing it as dangerous and unpredictable; and harm – interpreting it through guilt or a sense of being wronged.

Extensive research shows that perception of one's illness plays a key role in patient adaptation, psychosocial functioning, and emotional responses. For example, women with endometriosis often hold negative beliefs about the consequences, chronicity, and controllability of their condition, which are associated with higher stress and lower quality of life [12, 13]. At the same time, their personal narratives emphasize emotional burden, disrupted life plans, and challenges to self-identity [14]. In this article, we do not aim to focus on the consequences of illness perception for patients' adaptive functioning. Rather, we seek to determine how illness perception is shaped in women with endometriosis – specifically, whether it can be predicted based on pain-coping strategies and self-compassion. This raises an important question: why these particular predictors?

Coping strategies for pain are acquired early in life [15]. Thus, the ways individuals have previously learned to cope with pain may shape their perception of endometriosis – a disease in which pain is a core symptom. Coping with pain involves cognitive (i.e., reinterpreting pain sensations, ignoring pain sensations, coping self-statements, and catastrophizing) and behavioral strategies (i.e., increased behavioral activity, diverting attention, and praying and hoping) aimed at reducing discomfort [16]. Studies based on the Common-Sense Model [17] have primarily conceptualized illness perception as an antecedent of coping and health outcomes, with evidence linking it to general coping strategies and psychological adjustment in chronic illness and pain [18–20]. In research on illness perception, pain-specific coping strategies are less frequently investigated compared to general coping, and when examined, both illness perception and pain-specific coping are typically treated as predictors of the same psychological or functional outcomes, such as depressive symptoms, anxiety, or quality of life [21, 22]. However, the potential role of pain-specific coping strategies as predictors of illness perception remains underexplored, although a recent study has shown that a pain catastrophizing strategy can predict an accepting attitude toward illness [23]. The present research addresses this gap by examining whether different pain-coping strategies predict distinct categories of illness perception in women with endometriosis.

In the context of pain coping and illness perception, self-compassion may also play an important role. It is defined as an attitude of kindness and understanding toward oneself in the face of suffering, acceptance of one's flaws and failures, mindful awareness of one's emotions, and the recognition that suffering is a part of the human condition [24]. The existing literature has not directly examined the relationship between levels of self-compassion and specific categories of illness perception. However, research shows that higher self-compassion in individuals with chronic conditions is associated with better pain adaptation, lower distress, improved quality of life [25, 26], illness acceptance, greater resilience, and constructive coping with problems [27–30].

Although pain coping strategies and self-compassion have been studied in relation to pain intensity, emotional distress, and quality of life in chronic illness populations [16, 31–33], their combined role in illness perception – particularly in women with endometriosis – remains understudied. Our study adds to the existing body of research by emphasizing the meaning of illness rather than solely symptom severity, while highlighting pain-coping strategies and self-compassion as potentially modifiable factors associated with illness perception and potentially relevant to patient quality of life and adaptation to the illness.

Material and methods

Participants

The study group consisted of 265 Polish women with a diagnosis of endometriosis. The subjects were in early and middle adulthood; the age range was 20–52 years (M = 31.3; SD = 7.28). Most of them (N = 73, 27.5%) lived in a city with a population of up to 150,000, 70 (26.4%) respondents lived

in a city with a population of more than 500,000, 64 (24.2%) participants lived in a city with a population of 150,000 to 500,000, and the fewest lived in a rural area (*N* = 58, 21.9%). The majority of women had a university degree (*N* = 165, 62.3%), 56 of them (21.1%) had a high school education, 34 participants (12.8%) were in college, while the fewest respondents had vocational education (*N* = 8, 3%) or primary education (*N* = 2, 0.8%). The vast majority of women (*N* = 203, 76.6%) were in a relationship at the time of the survey, 52 (19.6%) described their status as single, while the fewest women declared their marital status as divorced (*N* = 9, 3.4%) or widowed (*N* = 1, 0.4%). In the study group, 79 (29.8%) women had at least one child, while 186 (70.2%) women were childless. The range of years of experiencing symptoms of the disease ranged from one to thirty years (*M* = 9.92; *SD* = 7.05), while the mean pain intensity score assessed on a scale of 1 to 10 was *M* = 6.75 (*SD* = 2.84).

Procedure

The research was conducted online using convenience sampling. From November 2024 to March 2025, the survey link was posted on Facebook groups and portals for women with endometriosis. Participation was voluntary and anonymous. Women aged 18 or older with a physician-diagnosed endometriosis, who gave informed consent, completed the survey. It included three questionnaires and seven sociodemographic items (see Participants). Completion took approximately 20–25 min.

Measures

The online survey included three measures, described below. Table I shows internal consistency coefficients for all the analyzed variables.

Self-Compassion Scale (SCS-PL)

Based on Neff's original scale (2003) [34], the Polish adaptation [35] consists of 26 items rated on a 5-point scale (1 = "almost never" to 5 = "almost always"). Items correspond to six subscales (self-kindness, self-judgment, common humanity, isolation, mindfulness, over-identification), but only the total mean score was used in this study. A higher score reflects greater self-compassion (see Introduction).

Coping Strategies Questionnaire (CSQ)

Rosenstiel and Keefe's (1983) scale [16] in the Polish adaptation by Juczyński (2001) [36] was used. It contains 42 items across seven coping strategies (see Introduction). Respondents answer using a 7-point scale (0 = "I never do this"; 3 = "I sometimes do this"; 6 = "I always do this") to indicate how often they use each strategy when in pain. For each strategy, we calculated the mean score. A higher score reflects more frequent use of that coping strategy.

The Disease-Related Appraisals Scale (DRAS)

Janowski, Steuden, Kuryłowicz, and Nieśpiałowska-Steuden's (2009) scale [37] assesses

Table I. Correlations (Pearson's r) and internal consistency coefficients of the analyzed variables

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. SelfComp	–														
2. DivAtten	0.29***	–													
3. ReinPaSen	0.30***	0.49***	–												
4. Catastr	0.44***	–0.10	–0.17**	–											
5. IgnoPaSen	0.22***	0.38***	0.61***	–0.31***	–										
6. PrayHop	0.09	0.48***	0.21***	0.24***	0.09	–									
7. CopSState	0.28***	0.44***	0.44***	–0.31***	0.70***	0.16**	–								
8. InBehActiv	0.20***	0.59***	0.45***	–0.23***	0.55***	0.21***	0.62***	–							
9. Obst/Loss	–0.26***	–0.07	–0.03	0.47***	–0.09	0.03	0.21***	–0.16**	–						
10. Threat	–0.36***	–0.11	–0.12	0.49***	–0.01*	0.14*	–0.22***	–0.14*	0.77***	–					
11. Harm	–0.36***	–0.01	–0.06	0.48***	0.08	0.16**	–0.10	–0.09	0.59***	0.63***	–				
12. Value	0.24***	0.31***	0.27***	–0.02	0.13*	0.31***	0.14*	0.18**	0.10	0.08	0.02	–			
13. Challen	0.20***	0.28***	0.23***	–0.01	0.12*	0.37***	0.21***	0.21***	0.17**	0.25***	0.16*	0.54***	–		
14. Profit	0.14*	0.10	0.18**	0.05	0.01	0.12*	–0.09	–0.00	0.26***	0.17**	0.19**	0.53**	0.30***	–	
15. Import	–0.25***	–0.11	–0.19**	0.44***	–0.23***	0.09	–0.18**	–0.12	0.52***	0.65***	0.46***	–0.08	0.15*	–0.06	–
α	0.93	0.82	0.82	0.86	0.82	0.73	0.85	0.70	0.92	0.88	0.86	0.82	0.60	0.72	0.76

*SelfComp – Self-compassion, DivAtten – Diverting Attention, ReinPaSen – Reinterpreting Pain Sensations, Catastr – Catastrophizing, IgnoPaSen – Ignoring Pain Sensations, PrayHop – Praying and Hoping, CopSState – Coping Self-Statements, InBehActiv – Increased Behavioral Activity, Obst/Loss – Obstacle/Loss, Challen – Challenge, Import – Importance; *p < 0.05; **p < 0.01; ***p < 0.001.*

ways of perceiving one's illness. It draws on Lazarus and Folkman's [10] transactional stress model and Lipowski's [11] concept of illness perception (see Introduction). It contains 47 items rated on a 5-point scale ("Yes"; "Rather yes"; "Don't know"; "Rather no"; "No"). The DRAS includes six subscales (obstacle/loss, threat, harm, value, challenge, profit) and a control scale of Importance, which reflects whether the illness disturbs life balance or is seen as minor. In this study, the mean Importance score was 4.26 (*SD* = 0.74). Subscale scores were computed as mean values, with higher scores indicating stronger perceptions of endometriosis in that category.

Results

Preliminary analyses

First, descriptive statistics were calculated and the assumption of normality was tested using the Shapiro-Wilk test. The results indicated that only the self-compassion score met the assumption of normality. Therefore, skewness and kurtosis were further examined. The scores for catastrophizing (CSQ subscale) and four subscales of the DRAS – obstacle/loss, threat, harm, and challenge – were slightly negatively skewed (from –0.20 to –0.86). The remaining subscales exhibited slight positive skewness (from 0.13 to 1.12). All skewness values fell within the acceptable range of –2 to +2, as recommended by George and Mallery [38], confirming the suitability of parametric tests for the subsequent analyses. Similarly, although we found statistically significant deviations from the normality of residuals, the low skewness and kurtosis values, as well as the Q–Q plot analysis, suggested that these deviations were subtle and did not substantially affect the model's conclusions.

Second, Pearson's bivariate correlations and internal consistency indices were also computed for all measured variables (Table I).

Regression analyses

The next step involved conducting linear regression analyses using the enter method, which is employed for exploratory purposes [39]. The overall self-compassion score and seven pain coping strategies were simultaneously entered as predictors, while the categories of perceived illness (obstacle/loss, threat, harm, value, challenge, and profit) were sequentially analyzed as dependent variables. The results are presented in Table II.

The assumption of no multicollinearity among the predictors was verified. The highest variance inflation factor (VIF) was 2.672, and the lowest tolerance value was 0.374, both corresponding to the pair of variables: ignoring pain sensations and the dependent variable (obstacle/loss, threat, harm, value, challenge, and profit).

Regression analyses revealed the extent to which self-compassion and pain coping strategies were associated with distinct categories of illness perception. The explained variance in the study group ranged from 7% for profit to 26% for threat. All models showed a good fit.

Perception of illness as obstacle/loss was positively associated with the catastrophizing strategy, explaining 24% of the variance. A similar pattern was found for threat (26%) and harm (25%). These two categories were positively associated with catastrophizing and inversely related to self-compassion. This demonstrates that negative illness perception is preceded by intense unpleasant emotions, a sense of helplessness in coping with pain (catastrophizing), and, in some cases, an inability to engage in self-care in the face of illness (self-compassion).

Positive perceptions of illness were associated with more adaptive strategies. Viewing illness as value was positively associated with self-compassion, reinterpreting pain sensations, and praying and hoping, explaining 15% of the variance. Similarly, self-compassion and reinterpreting pain sensations were positively associated with, while

Table II. Predicting illness perceptions from self-compassion and coping strategies for pain: a linear regression analysis

Variable		*B*	*SE*	β	*t*	*P*-value
Obstacle/Loss $F(8;256) = 11.22$; $p < 0.001$; R^2 adj. = 0.236	(Constant)	2.72	0.407		6.69	< 0.001
	Self-compassion	–0.88	0.103	–0.055	–0.86	0.393
	Diverting Attention	0.05	0.071	0.055	0.70	0.487
	Reinterpreting Pain Sensations	0.07	0.082	0.062	0.84	0.404
	Catastrophizing	0.38	0.053	0.473	7.01	< 0.001
	Ignoring Pain Sensations	0.15	0.081	0.166	1.88	0.061
	Praying and Hoping	–0.08	0.056	–0.090	–1.39	0.167
	Coping Self-Statements	–0.13	0.072	–0.152	–1.82	0.071
	Increased Behavioral Activity	–0.08	0.083	–0.080	–1.02	0.309

Table II. Cont.

Variable		*B*	*SE*	β	*t*	*P*-value
Threat $F(8;256) = 12.53$; $p < 0.001$; R^2 adj. = 0.259	(Constant)	3.61	0.320		11.26	< 0.001
	Self-compassion	–0.21	0.081	–0.167	–2.64	0.009
	Diverting Attention	–0.05	0.056	–0.068	–0.88	0.381
	Reinterpreting Pain Sensations	–0.03	0.07	–0.034	–0.46	0.646
	Catastrophizing	0.24	0.042	0.379	5.78	< 0.001
	Ignoring Pain Sensations	0.12	0.064	0.155	1.79	0.074
	Praying and Hoping	0.08	0.044	0.112	1.74	0.083
	Coping Self-Statements	–0.11	0.057	–0.152	–1.84	0.066
	Increased Behavioral Activity	0.02	0.065	0.024	0.31	0.757
Harm $F(8;256) = 11.77$; $p < 0.001$; R^2 adj. = 0.246	(Constant)	2.87	0.374		7.69	< 0.001
	Self-compassion	–0.34	0.095	–0.225	–3.53	< 0.001
	Diverting Attention	0.05	0.065	0.059	0.75	0.455
	Reinterpreting Pain Sensations	0.01	0.075	0.012	0.16	0.876
	Catastrophizing	0.28	0.049	0.384	5.81	< 0.001
	Ignoring Pain Sensations	0.06	0.075	0.066	0.76	0.451
	Praying and Hoping	0.05	0.052	0.059	0.91	0.363
	Coping Self-Statements	0.03	0.066	0.037	0.44	0.660
	Increased Behavioral Activity	–0.07	0.076	–0.073	–0.94	0.348
Value $F(8;256) = 6.83$; $p < 0.001$; R^2 adj. = 0.150	(Constant)	0.98	0.338		2.91	0.004
	Self-compassion	0.21	0.086	0.168	2.49	0.014
	Diverting Attention	0.07	0.059	0.097	1.16	0.246
	Reinterpreting Pain Sensations	0.15	0.068	0.167	2.13	0.034
	Catastrophizing	0.02	0.044	0.027	0.39	0.698
	Ignoring Pain Sensations	–0.04	0.068	–0.048	–0.52	0.605
	Praying and Hoping	0.15	0.047	0.214	3.12	0.002
	Coping Self-Statements	–0.02	0.060	–0.022	–0.25	0.805
	Increased Behavioral Activity	0.01	0.069	0.015	0.19	0.852
Challenge $F(8;256) = 7.38$; $p < 0.001$; R^2 adj. = 0.162	(Constant)	2.30	0.266		8.64	< 0.001
	Self-compassion	0.12	0.067	0.122	1.81	0.071
	Diverting Attention	–0.01	0.046	–0.010	–0.125	0.901
	Reinterpreting Pain Sensations	0.08	0.054	0.121	1.55	0.122
	Catastrophizing	0.01	0.035	0.009	0.13	0.897
	Ignoring Pain Sensations	–0.08	0.053	–0.129	–1.41	0.161
	Praying and Hoping	0.17	0.037	0.308	4.50	< 0.001
	Coping Self-Statements	0.07	0.047	0.134	1.53	0.126
	Increased Behavioral Activity	0.04	0.054	0.065	0.79	0.431
Profit $F(8;256) = 3.50$; $p < 0.001$; R^2 adj. = 0.070	(Constant)	1.53	0.258		5.94	< 0.001
	Self-compassion	0.15	0.066	0.157	2.22	0.027
	Diverting Attention	0.01	0.045	0.019	0.22	0.830
	Reinterpreting Pain Sensations	0.14	0.052	0.218	2.66	0.008
	Catastrophizing	0.03	0.034	0.063	0.86	0.392
	Ignoring Pain Sensations	0.01	0.052	0.016	0.17	0.868
	Praying and Hoping	0.04	0.036	0.076	1.06	0.291
	Coping Self-Statements	–0.12	0.046	–0.242	–2.63	0.009
	Increased Behavioral Activity	–0.00	0.052	–0.005	–0.06	0.953

B – unstandardized regression coefficient, SE – standard error, β – standardized regression coefficient, t – result of the t-test, F – result of the analysis of variance, R^2adj. – adjusted R-squared.

coping self-statements were negatively associated with, the perception of illness as profit, explaining 7% of the variance. The first two predictors overlap in the perception of illness as value and profit, suggesting that the perception of benefits from illness may be related to positive reinterpretation of pain sensations and understanding one's suffering as a communal experience. Additionally, praying and hoping was associated with the perception of illness as value. Finally, interpreting illness as a challenge was associated with the praying and hoping strategy (R^2 = 16%).

Discussion

The study aimed to investigate whether self-compassion and pain-coping strategies were associated with distinct categories of illness perception in women with endometriosis. Regression results showed that self-care and emotional and cognitive responses to pain were significantly associated with how the illness is perceived, in both negative and positive terms. In addition to self-compassion, the pain-coping strategies associated with illness perception included reinterpreting pain sensations, praying and hoping, coping self-statements, and catastrophizing. This is consistent with previous studies [29, 40, 41] suggesting that women with endometriosis employ both adaptive and maladaptive coping strategies in their daily lives.

Perceiving illness in negative terms – as an obstacle/loss, threat, or harm – was associated with a catastrophizing strategy. This finding can be interpreted within the Fear-Avoidance Model, which focuses on the impact of cognitive interpretations of pain on patients' emotional and behavioral responses [42]. According to this model, catastrophic interpretations of pain – including negative beliefs about its intensity, duration, and lack of control over the suffering experienced – may contribute to increased fear of pain. As a result, pain begins to be perceived as a signal of danger and potential damage to the body, which can contribute to feelings of helplessness and ineffectiveness [43]. Consequently, fear of pain may trigger avoidance strategies and lead to reduced physical activity, while also reinforcing excessive focus on somatic symptoms, creating a vicious circle of increasing pain and dysfunction [44]. This may lead individuals to avoid pain stimuli and focus excessively on them, potentially triggering greater stress. Empirical research has shown that catastrophizing, fear of pain, and pain vigilance are associated with negative affect, anxiety, depression, pain-related disability, and pain intensity in patients with various chronic pain conditions [45]. In the case of endometriosis, which is commonly associated with chronic pain, this mechanism contributes to perceiving the disease as an obstacle/loss, a threat, or harm – that is, as an illness that may be perceived as highly debilitating for everyday functioning. Poor control over thoughts, dichotomous thinking, and impaired emotion regulation may contribute to elevated stress and reduced quality of life [44]. Women may become preoccupied with the losses and limitations imposed by the illness, which may reinforce beliefs about its negative impact on their activities and socio-professional life. This way of interpreting health experiences hinders the process of adaptation to and acceptance of the disease and may lead to denial of its significance in the patient's life.

Negative perceptions of illness, such as threat and harm, were also linked to lower levels of self-compassion, which is defined as kindness and understanding toward oneself and acceptance of difficult experiences [46]. Self-compassion may be beneficial for individuals facing illness by potentially facilitating stress management, enhancing quality of life in chronic conditions [26], and improving emotion regulation in chronic pain, thereby being associated with reductions in depressive and anxiety symptoms as well as catastrophic thinking [25]. Thus, it is conceivable that self-compassion may also be positively associated with both the primary and secondary appraisal of illness, in line with the transactional model of stress and coping [10]. Therefore, self-compassion may represent a potentially relevant target for further therapeutic research aimed at helping patients reframe their experiences and reduce the psychological burden of chronic illness.

Women may perceive endometriosis not only negatively but also positively, in terms of value (referring to intangible and spiritual aspects) or profit (referring to material or social gains). In such cases, self-compassion, combined with cognitive reappraisal of pain experiences, may be associated with more adaptive functioning. Recent research demonstrates that higher levels of self-compassion and mindfulness are associated with better psychological well-being, lower psychological distress, and improved quality of life among women with endometriosis [47, 48].

In the context of findings highlighting the negative role of catastrophizing and the positive role of self-compassion and strategies involving the reinterpretation of pain sensations, Acceptance and Commitment Therapy (ACT) appears to provide a theoretical framework that may be relevant to promoting adaptive functioning in women experiencing chronic pain due to endometriosis. Within this approach, self-compassion may play an important role by facilitating the acceptance of pain-related thoughts and emotions without excessive self-criticism, potentially allowing individuals to disengage from experiential avoidance and

pain catastrophizing. Moreover, ACT emphasizes cognitive reappraisal of pain sensations, helping patients reinterpret them as transient internal experiences rather than threats. This combination of acceptance, self-compassion, and reinterpretation enables engagement in valued life activities despite ongoing symptoms [49, 50]. Such an ACT-consistent approach may be particularly relevant for women with endometriosis, for whom complete elimination of pain is often unattainable.

In a positive perception of illness, the strategy of praying and hoping also appears to be relevant. When the illness is perceived as a value, personal prayer may be associated with inner peace, reflection on life's meaning, and a sense of value in suffering. When the disease is seen as a challenge, prayer may also promote hope and provide support through the belief that God has control over one's illness [51]. Moreover, frequent prayer and placing hope in God may reflect viewing the illness not only as a challenge to one's coping capabilities but also as a test of faith – one believed to be surmountable through prayer and trust in God.

Understanding the determinants of illness perception, such as self-compassion and pain-coping strategies, can help clarify factors associated with a more positive perception of endometriosis. In particular, developing self-compassion and replacing catastrophizing with cognitive reinterpretation of pain sensations may be relevant to therapeutic interventions aimed at supporting women in coping with their chronic condition.

The findings have important implications for the comprehensive care of women with endometriosis. Given the interconnections between illness perception, pain-coping strategies, self-compassion, and psychological well-being, routine psychological assessment may be a useful component of treatment. Regular screening for maladaptive illness beliefs, pain catastrophizing, and anxiety may facilitate early identification of patients at risk of psychological distress and reduced quality of life, potentially supporting timely intervention.

Furthermore, access to psychological counseling may be beneficial for women with endometriosis. Interventions based on cognitive-behavioral therapy, acceptance-based approaches, and compassion-focused therapy have been associated with reductions in pain catastrophizing, better emotional regulation, and more adaptive coping in patients with chronic pain [46, 52, 53]. For women with endometriosis, interventions promoting self-compassion and cognitive reinterpretation of pain, instead of catastrophizing, may be relevant to addressing maladaptive illness perceptions, psychological distress, and resilience [5]. Integrating psychological support into standard gynecological care may contribute to more patient-centered care and potentially better long-term outcomes [54].

The study has several limitations that may affect the interpretation of the results. First, its online design limited control over the reliability of responses, and the considerable number of reflective questions may have reduced participants' attentiveness. Future research should monitor completion time or include attention-check questions. Second, the cross-sectional design makes it difficult to draw causal conclusions. The observed associations may be bidirectional, highlighting the need for replication in longitudinal studies to better understand the mechanisms underlying illness perception and coping. Third, for some regression models, such as the one for profit, R^2 values were relatively low, indicating limited explained variance. Combined with a relatively large number of predictors, this may increase the risk of overfitting. Consequently, these results should be interpreted with caution, considering the limited statistical power and potential risk of Type I errors. Fourth, clinical variables such as pain intensity, disease duration, and parental status were not included in the analyses, although they may be associated with pain-coping strategies, illness perception, and adaptation. Additionally, the lack of data on the mental health history of participants and their families (e.g., previous therapies, hospitalizations) limits a full understanding of the relationships under study. Therefore, future research should take these factors into account.

Funding

No external funding.

Ethical approval

The procedure was approved by the Research Ethics Committee at the first author's university (approval no. KEBN_20/2025).

Conflict of interest

The authors declare no conflict of interest.

References

1. Pettersson A, Berterö CM. How women with endometriosis experience health care encounters. Women's Health Rep 2020; 1: 529-42.
2. Young K, Fisher J, Kirkman M. Women's experiences of endometriosis: a systematic review and synthesis of qualitative research. J Fam Planning Reprod Health Care 2015; 41: 225-34.
3. Maulenkul T, Kuandyk A, Makhadiyeva D, et al. Understanding the impact of endometriosis on women's life: an integrative review of systematic reviews. BMC Women's Health 2024; 24: 524.
4. Della Corte L, Di Filippo C, Gabrielli O, et al. The burden of endometriosis on women's lifespan: a narrative over-

view on quality of life and psychosocial wellbeing. Int J Environ Res Public Health 2020; 17: 4683.
5. Facchin F, Barbara G, Saita E, et al. Impact of endometriosis on quality of life and mental health: Pelvic pain makes the difference. J Psychosom Obstet Gynaecol 2015; 36: 135-41.
6. Kalfas M, Chisari C, Windgassen S. Psychosocial factors associated with pain and health-related quality of life in endometriosis: a systematic review. Eur J Pain 2022; 26: 1827-48.
7. Li W, Feng H, Ye Q. Relationship between endometriosis and mental health: a systematic review and meta-analysis. Arch Med Sci 2025; 21: 1985-96.
8. Cole JM, Grogan S, Turley E. "The most lonely condition I can imagine": psychosocial impacts of endometriosis on women's identity. Feminism Psychology 2021; 31: 171-91.
9. Calvi C, Sherman KA, Pham D. Loneliness and perceived social support in endometriosis: the roles of body image disturbance and anticipated stigma. Int J Behav Med 2024; 31: 433-44.
10. Lazarus R, Folkman S. Stress, Appraisal and Coping. Springer 1984.
11. Lipowski Z J. Physical illness, the individual and the coping processes. Psychiatry Med 1970; 1: 91-102.
12. Barberis N, Cannavò M, Cuzzocrea F, Saladino V, Verrastro V. Illness perceptions and factors of distress as mediators between trait emotional intelligence and quality of life in endometriosis. Psychol Health Med 2023; 28: 1818-30.
13. Spinoni M, Capano AU, Porpora MG, Grano C. Understanding the psychological factors linking pelvic pain and health-related quality of life in endometriosis: the influence of illness representations and coping strategies. Am J Obstet Gynecol 2025; 233: 54.e1-10.
14. Moore C, Cogan N, Williams L. Illness perceptions among individuals with endometriosis and their longitudinal associations with psychological distress and pain. J Health Psychol 2025; 30: 4284-97.
15. Pavlova M, Noel M, Orr SL, et al. Early childhood risk factors for later onset of pediatric chronic pain: a multi-method longitudinal study. BMC Pediatr 2024; 24: 508.
16. Rosenstiel AK, Keefe FJ. The use of coping strategies in chronic low back pain patients: relationship to patient characteristics and current adjustment. Pain 1983; 17: 33-44.
17. Leventhal H, Phillips LA, Burns E. The common-sense model of self-regulation (CSM): a dynamic framework for understanding illness self-management. J Behav Med 2016; 39: 935-46.
18. Petrie KJ, Weinman J. Patients' perceptions of their illness: the dynamo of volition in health care. Curr Direct Psychol Sci 2012; 21: 60-5.
19. Woodhouse S, Hebbard G, Knowles SR. Exploring symptom severity, illness perceptions, coping styles, and well-being in gastroparesis patients using the common sense model. Dig Dis Sci 2018; 63: 958-65.
20. Zhang M, Nie S, Hai Z, Du Y, Jiang M, Cai C. Effects of illness perception and coping style on self-management in peritoneal dialysis patients: a cross-sectional study. Psychol Res Behav Manag 2024; 17: 3381-93.
21. de Heer EW, Vriezekolk JE, van der Feltz-Cornelis CM. Poor illness perceptions are a risk factor for depressive and anxious symptomatology in fibromyalgia syndrome: a longitudinal cohort study. Front Psychiatry 2017; 8: 217.
22. Pereira MG, Carvalho C, Costa ECV, Leite Â, Almeida V. Quality of life in chronic pain patients: Illness- and wellness-focused coping as moderators. PsyCh J 2021; 10: 283-94.
23. Andysz A, Merecz-Kot D. Predictors of illness acceptance in women with endometriosis. Health Psychol Rep 2021; 9: 240-51.
24. Neff KD. Self-Compassion: an alternative conceptualization of a healthy attitude toward oneself. Self Identity 2003; 2: 85-101.
25. Wren AA, Somers TJ, Wright MA, et al. Self-compassion in patients with persistent musculoskeletal pain: relationship of self-compassion to adjustment to persistent pain. J Pain Symptom Manag 2012; 43: 759-70.
26. Sirois F, Rowse G. The role of self-compassion in chronic illness care. J Clin Outcomes Manag 2016; 23: 521-7.
27. Germer CK, Neff KD. Self-compassion in clinical practice. J Clin Psychol 2013; 69: 856-67.
28. Nasika IN, Wiart C, Bonvarlet AS, Guillaume J, Yavchitz A, Tereno S. Attachment patterns, self-compassion, and coping strategies in patients with chronic pain. Pain Rep 2023; 8: e1087.
29. Roomaney R, Kagee A. Coping strategies employed by women with endometriosis in a public health-care setting. J Health Psychol 2016; 21: 2259-68.
30. Sirois FM, Molnar DS, Hirsch JK. Self-compassion, stress, and coping in the context of chronic illness. Self Identity 2015; 14: 334.
31. Mistretta EG, Davis MC. Meta-analysis of self-compassion interventions for pain and psychological symptoms among adults with chronic illness. Mindfulness 2022; 13: 267-84.
32. Orozco-Gómez ÁM, Villamil-Munévar V, Mateus LM, Morales-Cruz C, Osorio-Noriega R. Pain characteristics, coping strategies and its relation with the quality of life in patients with chronic pain diseases. Salud Soc 2016; 7: 240-52.
33. Yuan Y, Schreiber K, Flowers KM, et al. The relationship between emotion regulation and pain catastrophizing in patients with chronic pain. Pain Med 2024; 25: 468-77.
34. Neff KD. Self-compassion: theory, method, research, and intervention. Ann Rev Psychol 2023; 74: 193-218.
35. Kocur D, Flakus M, Fopka-Kowalczyk M. Skala Współczucia dla Samego Siebie (SCS-PL) [Self-Compassion Scale – Polish version (SCS-PL)]. Przegl Badań Eduk 2022; 37: 1-46.
36. Juczyński Z. Narzędzia pomiaru w promocji i psychologii zdrowia [Measurement Tools in Health Promotion and Psychology]. Pracownia Testów Psychologicznych Polskiego Towarzystwa Psychologicznego 2001.
37. Janowski K, Steuden S, Kuryłowicz J, Nieśpiałowska-Steuden M. The Disease-Related Appraisals Scale: a tool to measure subjective perception of the disease situation. Biopsych Aspects Health Dis 2009; 1: 108-25.
38. George D, Mallery M. SPSS for Windows step by step: a simple guide and reference (17.0 update). Pearson 2010.
39. Tabachnick BG, Fidell LS. Using Multivariate Statistics (5th ed.). Allyn and Bacon 2007.
40. González-Echevarría AM, Rosario E, Acevedo S, Flores I. Impact of coping strategies on quality of life of adolescents and young women with endometriosis. J Psychosom Obstet Gynecol 2019; 40: 138-45.
41. Zarbo C, Brugnera A, Frigerio L, et al. Behavioral, cognitive, and emotional coping strategies of women with endometriosis: a critical narrative review. Arch Women's Ment Health 2018; 21: 1-13.
42. Vlaeyen JWS, Linton SJ. Fear-avoidance model of chronic musculoskeletal pain: 12 years on. Pain 2012; 153: 1144-7.

43. Espuig A, Pons-Vinent M, Carbajo E, Lacomba-Trejo L. The impact of pain, threat perception and emotional distress on suicide risk in individuals with colorectal cancer. Nurs Rep 2024; 14: 2629-39.
44. Vlaeyen JWS, Crombez G, Linton SJ. The fear-avoidance model of pain. Pain 2016; 157: 1588-9.
45. Rogers AH, Farris SG. A meta-analysis of the associations of elements of the fear-avoidance model of chronic pain with negative affect, depression, anxiety, pain-related disability and pain intensity. Eur J Pain 2022; 26: 1611-35.
46. Neff KD, Germer CK. A pilot study and randomized controlled trial of the mindful self-compassion program. J Clin Psychol 2013; 69: 28-44.
47. Facchin F, Grosso F, Saita E, Vercellini P, Pagnini F. Can self-compassion and mindfulness predict psychological wellbeing in individuals with endometriosis? Findings from an online survey. BMC Womens Health 2025; 25: 310.
48. Van Niekerk L, Johnstone L, Matthewson M. Predictors of self-compassion in endometriosis: the role of psychological health and endometriosis symptom burden. Hum Reprod 2022; 37: 264-73.
49. McCracken LM, Vowles KE. Acceptance and commitment therapy and mindfulness for chronic pain: model, process, and progress. Am Psychol 2014; 69: 178-87.
50. Scott W, McCracken LM. Psychological flexibility, acceptance and commitment therapy, and chronic pain. Curr Opin Psychol 2015; 2: 91-6.
51. Jors K, Büssing A, Hvidt NC, Baumann K. Personal prayer in patients dealing with chronic illness: a review of the research literature. Evid Based Complement Alternat Med 2015; 2015: 927973.
52. Ehde DM, Dillworth TM, Turner JA. Cognitive-behavioral therapy for individuals with chronic pain: efficacy, innovations, and directions for research. Am Psychol 2014; 69: 153-66.
53. Sturgeon JA. Psychological therapies for the management of chronic pain. Psychol Res Behav Manag 2014; 7: 115-24.
54. Fang QY, Campbell N, Mooney SS, Holdsworth-Carson SJ, Tyson K. Evidence for the role of multidisciplinary team care in people with pelvic pain and endometriosis: a systematic review. Austral N Zeal J Obstet Gynaecol 2024; 64: 181-92.