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Sex (Is Not) On Fire: The Mediating Role of Cognitive Schemas Between Symptoms of Endometriosis and Sexual Distress

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ABSTRACT. The purpose of this research is to examine the cognitive schemas activated in sexual situations as mediating factors in the relationship between endometriosis symptoms and sexual distress. N=173 women diagnosed with endometriosis, who had a sexually active status during data collection, took part in the research. The survey consisted of a demographic data sheet, the ENDOPAIN-4D, the Questionnaire of Cognitive Schema Activation in Sexual Context and the Female Sexual Distress Scale - Desire/Arousal/Orgasm questionnaires. The results of the Structural Equation Modeling technique indicate that the mediation model does not show a good model fit with our data. We do not see this explanatory power regarding the relationship between pelvic pain and sexual distress sexual, or between bowel pain and sexual distress. Based on the complex indirect effect, maladaptive cognitive schemas mediate the relationship between pain during sexual intercourse and sexual distress, as well as the relationship between other symptoms of endometriosis and sexual distress.

Keywords: endometriosis symptoms, maladaptive cognitive schemas, sexual distress, structural equation modeling

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INTRODUCTION

Endometriosis can be classified as a chronic illness, mostly affecting women of reproductive age (American Society for Reproductive Medicine, 2016). Based on the systematic review of literature by Smolarz et al. (2021), endometriosis affects 10-15% of women of reproductive age, as well as 35-50% of women experiencing pelvic pain and/or infertility. Based on summaries of literature on the topic, the leading symptoms of endometriosis are extremely strong menstrual pain (dysmenorrhea), painful sexual intercourse (dyspareunia), painful and difficult bowel movements (dyschezia), as well as cyclic painful urination (dysuria). Another leading symptom, irregular vaginal bleeding, is related to the disturbances of the menstrual cycle. Other, organ-specific symptoms may also affect women suffering from endometriosis: lower back pain, chronic fatigue, bloating, diarrhea (Van den Broeck et al., 2013).

World Health Organization (1986) extended the definition of health, which now describes as a state of complete physical, emotional and social wellbeing. The correlation between the different dimensions of health are proven, therefore it can be said that endometriosis, and chronic illnesses in general, do not only harm a person's physical health indicators, but also show correlations with negative changes in mental and social wellbeing.

The relationship between endometriosis symptoms, cognitive schemas and sexual distress

Schemas are people's deep, recurring, script-like beliefs about themselves and their relationships with others, which they evaluate and experience as unquestionably true (Steavens & Roediger, 2017; Young et al., 2003). The activation of the schema modes determines the general attitude of the individual towards their environment. The maladaptive schemas activation shows a correlation with different physical health indicators. Several studies (Saariaho et al., 2010; Salari et al., 2022) also addressed the relationship systems related to chronic pain as follows: in the group of individuals who reported experiencing chronic pain, the activation of maladaptive schema domains (disconnection/rejection, impaired autonomy/performance, over-vigilance/inhibition, impaired limits, other-directedness) is more significant than in people who do not struggle with chronic pain. The inverse of this relationship pattern was also supported, and according to the research results, patients experiencing pain who also had different maladaptive schemas showed higher pain intensity, duration, and more significant degrees of functional impairment caused by pain. Saariaho et al. (2012) pointed out in their study that the most common maladaptive schemas observed in these patients

were self-sacrifice and unrelenting standards/hypercriticalness. The interaction of the two constructs is explained from several perspectives. Vakili et al. (2020) reflected on the aspect that in individuals suffering from chronic pain, maladaptive schemas are related to the pain experience through the mediating effect of depression. From this perspective, the correlation of all five dimensions of early maladaptive schemas with depression was demonstrated, and the moderating effect of mood disorder in connection with the development and severity of chronic pain was highlighted (Davoodi et al., 2018). Moreover, the approach according to which cognitive schemas can influence the individual's attention and perceptual functions, which can lead to the misinterpretation of bodily sensations and signals, is also relevant (Brown, 2004).

Furthermore, these belief systems can fundamentally influence a person's general attitude and experiences regarding sexuality. Regarding the intensity of experienced sexual distress, Rossi et al (2022) point out that women diagnosed with endometriosis report more significant distress than their peers without the syndrome. The results also reflect that women diagnosed with endometriosis show a greater activation of maladaptive schemas (e.g. helplessness schema) than women not affected by endometriosis, which can play a role as a potential predictor factor regarding the degree of experienced sexual distress. The significant positive correlation between the increased presence of maladaptive schemas and sexual problems is also covered by further research, according to which the following relationships can be assumed: in addition to the more frequent, intense and extensive occurrence of dysfunctional beliefs, problems associated with sexual behavior can be identified to a greater extent as well (Evli et al., 2021; Peixoto & Nobre, 2015).

Mechanical stimulation of tissue adhesions and scarring in the vagina or uterus can result in severe pain experience, and possibly bleeding during and after sexual intercourse. Women affected by endometriosis are significantly more likely to experience persistent and recurrent genital and pelvic pain, bowel problems and infertility issues, compared to members of the healthy female population (Fritzer et al., 2013; Rossi et al., 2022). Several studies have linked the presence of chronic pelvic pain and dyspareunia to different forms of sexual dysfunctions (e.g. decreased sexual desire, orgasm disorders, etc.) (Privitera et al., 2023; Shum et al., 2018).

Based on the pathophysiological model of dyspareunia, physical pain changes the attitude towards sexuality of the women involved, which in turn can further increase the subjective experience of pain or the manifestation of negative attitudes towards sexuality (Nimbi et al., 2019; Vannuccini et al., 2023).

It can therefore be seen that not only biological, but also cognitive and emotional components of pain experience can be identified. In recent years, we have seen a growing tendency of research themes targeting the role of cognitive and emotional factors in explaining the development of sexual distress. Preliminary results show that negative belief systems and maladaptive schemas can be identified as predictor factors regarding sexual distress in populations of women who report experiencing endometriosis symptoms (Rossi et al, 2022). Furthermore, the results show that maladaptive cognitive schemas have a more significant predictive power regarding the degree of sexual distress than endometriosis symptomatology (Zarbo et al., 2019).

Overall, it can be said that cognitive schemas play a prominent role in the development and maintenance of the pain experience through the misinterpretation or catastrophizing of bodily sensations and symptoms, which can be identified as predisposing factors in the manifestation of sexual distress.

OBJECTIVES

Our goal is to examine what potential relationship patterns can be observed between the five main dimensions of the cognitive schemas that appear in connection with sexuality (undesirability/rejection, incompetence, self-deprecation, difference/loneliness, helplessness), endometriosis symptoms (pelvic pain, bowel pain, pain during sexual intercourse, other gynecological symptoms) and sexual distress. Furthermore, we aimed to use methodological procedures through which we can examine not only linear relationships, but also point out factors that appear as having explanatory roles in the relationship between two variables. In order to do this, we performed a mediation analysis.

MATERIALS AND METHODS

Participants

To join the research, the participants had to fulfill three conditions: a) only the data of people over 18 could be processed, b) women in question had undergone surgery and had an endometriosis diagnosis made by a specialist, c) only people who had a sexually active status at the time of data collection could be included.

Based on Kline's (2015) recommendations, the minimum sample size required to implement the Structural Equation Modeling technique is between 100 and 200 people. Based on this, it can be said that the number of participants included in our study proves to be adequate. During the process, we managed

to collect data from a total of 179 people, from which we excluded the data of 6 women due to those conflicting with one of the inclusion criteria presented above. Four people declared that they were not sexually active, and another two did not have an official diagnosis established by a specialist.

Based on the previous inclusion criteria, we worked with a total of N=173 female participants' data.

Ethics Statement

It was used a questionnaire-based procedure to assess participants' demographic information, as well as to measure the symptoms of endometriosis, maladaptive cognitive schemas, and levels of sexual distress. The method and procedure were conducted in accordance with the professional requirements of the Romanian College of Psychologists (COPSI). The questionnaire package included written information of the study and a consent statement for the participants.

Instruments

Demographic Questionnaire

In this questionnaire, the questions target the following dimensions: age, marital status, highest education, age at diagnosis (years), type of the treatment, sexual activity status.

Questionnaire about gynecological and pelvic pain symptoms (ENDOPAIN-4D)

The 21-item questionnaire developed by Puchar et al. (2021) is aimed at assessing the severity of endometriosis symptoms along 4 subscales, which are the following: spontaneous pelvic pain and dysmenorrhea, pain during the sexual intercourse/dyspareunia, intestinal pain symptoms, and other gynecological symptoms. For each group of questions, the first questions must be evaluated dichotomously, with yes/no answers. In the case of a "No" answer, the respondent automatically receives 0 points, with a "Yes" response however, the person then must record the degree of pain/discomfort on one or more additional Likert scales ranging from 0 (No pain/discomfort) to 10 (The worst pain/discomfort imaginable). From higher obtained scores, a more severe manifestation of endometriosis symptoms can be concluded.

Questionnaire of Cognitive Schema Activation in Sexual Context - Female Version

The 28-item questionnaire was developed by Nobre & Pinto-Gouveia (2009) with the aim of assessing the cognitive schemas that appear when encountering sexual situations. In the first section of the questionnaire, there

are four short stories that refer to situations related to different sexual dysfunctions. In the second part, the respondents have to evaluate different statements depending on the extent to which these statements describe their feelings and thoughts towards themselves, if they imagine themselves in a situation similar to the one presented at the beginning. The evaluation is done using a Likert scale ranging from 1 (Completely false) to 5 (Completely true). The scale examines the activation of five schema types, which are: undesirability/ rejection, incompetence, self-deprecation, difference/loneliness, helplessness. The evaluation is done by summing the scores from each subscale, where higher scores indicate increased activation of the respective schema domain.

Female Sexual Distress Scale - Desire/Arousal/Orgasm

The 15-item scale was created by Derogatis et al. (2021) to assess the sexuality-related distress levels in the female population. The evaluations must be made based on the person's experiences in the last 4 weeks, along a Likert scale ranging from 0 (Never) to 4 (Always). The questionnaire does not contain subscales, it only allows the calculation of a total score by summing up the point values of each answer. The obtained result can take a value between 0 and 60, where higher total scores indicate a greater level of sexual distress.

Data Processing and Statistical Analysis

The process is carried out with a one-time data collection, so our study is based on a cross-sectional, correlational arrangement.

As an initial step, we examine some preliminary analysis with the help of the IBM SPSS 20 statistical program package. Firstly, the data processing began with the analysis of descriptive statistical data, the normality test, and the reliability test. For each continuous variable, we described the mean (M) and standard deviation (SD) values, while for categorical variables, we presented the percentage distribution.

Then, the direction and strength of the associations was examined between the constructs (cognitive schemas, endometriosis symptoms, sexual distress) by means of a correlation calculation. During the data processing, a p-value less than .05 is considers statistically significant. Based on the standards developed by Bryne (2010) and Hair et al. (2010), it can be said that since the Skewness and Kurtosis indicator results of our scales and subscales are within the -2 and +2 interval, the conditions of normal distribution are not violated. In our data the values fall between -0.91 and 0.27. In accordance with this, the use of parametric tests becomes necessary during statistical processing. Next, the reliability indicators of the scales were verified. Cronbach α values for the three scales and their different dimensions vary between .73 and .94.

According to the standards defined by Pallant (2011), an instrument and its subscales can be considered reliable if the Cronbach's α value is always higher than the threshold value of .70, hence the instruments used in the study can be considered reliable.

Then in order to check the suitability of our hypothetical model the Structural Equation Modeling technique was used with the additional SPSS AMOS software. In the first step, a path diagram-construction was carried out based on the previously synthesized, preliminary research results, which depict the hypothetical relationship between the variables. This is followed by a model specification process, during which the number and nature of the parameters are estimated, and then model identification takes place. In the parameter estimation phase, the actual and the derived covariance matrices are compared. During data processing, in the case of all exogenous variables (pelvic pain, bowel pain, pain during sexual intercourse, other symptoms), it was necessary to examine the complex, indirect effect with regard to the output variable, through the interweaving of the five schema types. This was carried out using the user-defined estimands procedure, which summarizes the indirect effect of each individual mediator variable on the relationship between the two variables (Kline, 2015). The bootstrapping method (10.000 resamples, 95% confidence interval (CI)) was used to assess the significance of the complex indirect effect (Hair et al., 2010). A p-value less than .05 is considers statistically significant. Next, we want to examine the level of compatibility between our data and the hypothetical model we created, determining the extent to which the model can represent our data. This is called the assessment of model fit (Kline, 2015).

RESULTS

Preliminary analysis

We worked with the data of 173 sexually active women diagnosed with endometriosis. All respondents are from Hungary. Youngest person who took part in the survey was 18 years old, while the oldest was 48, the average age of the population being 32.55 years (SD = 5.84). The earliest diagnosis comes from the age of 15, the latest from the age of 46, and on average it was around the age of 28.28 years (SD = 5.62). The summary of demographic data is presented in Table 1.

Table 1. *Demographic data of participants (N = 173)*

Participants (N = 173)	
Gender_female (n, %)	173 (100%)
Age, years	32.55 (5.84)
Marital status (n,%)	
Single	14 (8.1%)
In relationship	82 (47.4%)
Married	77 (44.5%)
Highest education level (n, %)	
Baccalaureate	27 (15.6%)
Vocational training	32 (18.5%)
College	32 (18.5%)
Bachelor's degree (BA)	44 (25.4%)
Master's degree (MA)	36 (20.8%)
Doctorate (PhD)	2 (1.2%)
Endometriosis severity stage (n, %)	
I	25 (14.5%)
II	58 (33.5%)
III	49 (28.3%)
IV	41 (23.7%)
Type of treatment received (n, %)	
Surgery	69 (39.9%)
Surgical procedure and medication	104 (60.1%)
Ongoing hormone treatment (n, %)	
Yes	96 (55.6%)
No	77 (44.4%)
Fertility problems (n, %)	
Yes	70 (40.5%)
No	45 (26%)
Not applicable	58 (33.5%)
Children (n, %)	
Yes	58 (33.5%)
No	115 (66.6%)
Pelvic Pain	63.34 (26.22)
Pain During Sexual Intercourse	22.84 (11.53)
Bowel Pain	30.85 (15.56)
Other Symptoms of Endometriosis	39.91 (20.07)
Undesirability/Rejection	26.16 (7.63)
Incompetence	27.71 (7.15)
Self-Deprecation	9.16 (3.09)
Difference/Loneliness	10.17 (3.04)
Helplessness	11.97 (3.55)
Sexual Distress	47.06 (11.90)

Note. The indicated values represent the mean (M) and the standard deviation (SD) values unless otherwise specified.

In order to examine the relationship system, the parametric Pearson's correlation test was used, during which we performed a correlation analysis between the different symptom groups of endometriosis, the maladaptive schema activation and its dimensions, and the sexual distress variables. The results of this are presented in Table 2.

Table 2. *Correlation coefficients between endometriosis symptoms, cognitive schemas and sexual distress*

Variables	1	2	3	4	5	6	7	8	9	10
1. Pelvic Pain	-									
2. Pain During Sexual Intercourse	.70**	-								
3. Bowel Pain	.47**	.37**	-							
4. Other Symptoms	.67**	.54**	.48**	-						
5. Undesirability/ Rejection	.60**	.66**	.44**	.57**	-					
6. Incompetence	.59**	.68**	.38**	.53**	.80**	-				
7. Self-Deprecation	.54**	.57**	.35**	.56**	.88**	.71**	-			
8. Difference/ Loneliness	.65**	.63**	.45**	.53**	.81**	.77**	.75**	-		
9. Helplessness	.61**	.58**	.31**	.45**	.66**	.67**	.58**	.62**	-	
10. Sexual Distress	.57**	.68**	.31**	.48**	.76**	.79**	.71**	.75**	.69**	-

*Note. **p < 0.01*

The presented results show that there is a positive, significant correlation between our variables. This means that in addition to more severe endometriosis symptoms (e.g. intense lower abdominal pain, pain during sexual intercourse, abdominal bloating, diarrhea, constipation, bladder pain, infertility, etc.), the manifestations of dysfunctional beliefs can be identified in a high proportion. Participants report feelings of helplessness, inferiority, feelings of incompetence, insecurity, or related beliefs and fears of being left by their partners more often. In addition, more negative attitudes and opinions about sexuality are also more significant in these cases. Frustration, worry, feelings of inadequacy or negative emotions such as anger appear with greater intensity.

The mediating role of cognitive schemas between symptoms of endometriosis and sexual distress

In this phase of the data processing we want to examine the explanatory role of maladaptive cognitive schemas in the relationship between symptoms of endometriosis and sexual distress. In order to do this, we performed a mediation analysis. The mentioned model is illustrated in Figure 1.

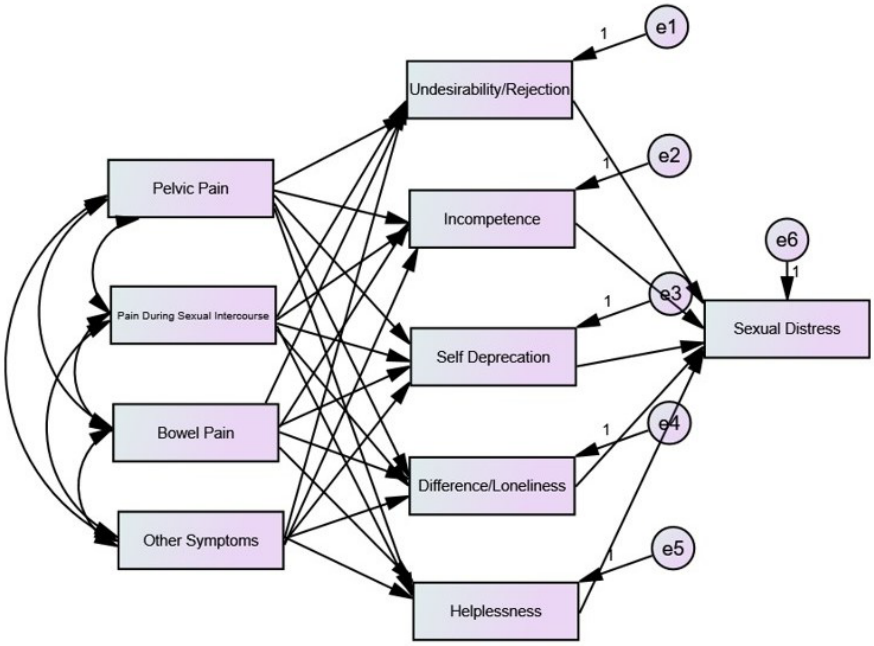

Figure 1. *Maladaptive cognitive schemas as mediator variables in the relationship between endometriosis symptoms and sexual distress*

The direct path does not show a significant prediction between *pelvic pain* and undesirability/rejection schema type (β=-.021, p=.421). The pattern is similar in the schema domains of incompetence (β=.002, p=.939), self-deprecation (β=-.001, p=.915), and difference/loneliness (β=.016, p=.137) as well. The result of the direct path analysis between pelvic pain and the helplessness schema indicates a significant, positive prediction (β=.032, p=.014). The direct prediction between the undesirability/rejection schema and sexual distress was not statistically significant (β=.076, p=.330). In addition, incompetence (β=.607,

p<.001), self-deprecation (β=.476, p=.007), difference/loneliness (β=.801, p <.001), and helplessness (β=.724, p<.001) schema domains can be identified as significant, positive predictors of sexual distress. In the case of the complex indirect effect (Effect = .031, 95% CI = -.051, +.117, p=.395), the confidence interval includes the value 0, which means that the cognitive schemas cannot be interpreted as mediator variables in the relationship between pelvic pain and sexual distress.

Pain during sexual intercourse can be identified as a significant, positive predictor variable in the case of undesirability/rejection (β=.281, p<.001), incompetence (β=.286, p<.001), self-deprecation (β=.081, p=.004), difference/ loneliness (β=.082, p<.001) and helplessness (β=.087, p=.001) schemas. In this system of relationships, we can see helplessness (β=.724, p<.001), difference/ loneliness (β=.801, p=.008), and incompetence (β=.607, p<.001) schemas as having a significant, positive predictive effect on sexual distress. In the case of undesirability/rejection (β=.076, p=.711) and self-deprecation (β=.476, p=.203), the direct path analysis did not give a significant value. In the case of the complex indirect effect (Effect = .361, 95% CI = .221, .491, p=.001), the confidence interval does not include the value 0, which means that the cognitive schemas mediate the relationship between pain during sexual intercourse and sexual distress together.

During the direct path analysis, *bowel pain* did not have a significant predictive effect on any of the following schemas: undesirability/rejection (β=.047, p=.151), incompetence (β=.013, p=.668), self-deprecation (β=.004, p=.798), difference/loneliness (β=.024, p=.070), helplessness (β=.001, p=.957). In this relationship system, the positive, statistically significant predictors of sexual distress are the incompetence (β=.607, p<.001), self-deprecation (β=.476, p=.007), difference/loneliness (β=.801, p<.001) and helplessness (β=.724, p<.001) schemas, but this is not true for the undesirability/rejection (β=.076, p=.303) schema type. The complex indirect effect (Effect = .033, 95% CI = -.049, +.119, p=.514) is not statistically significant. The confidence interval contains the value 0, from which we can conclude that the cognitive schemas have no explanatory power in the relationship between the bowel pain symptom and sexual distress.

In the case of *other symptoms of endometriosis* (e.g. infertility), the direct path analysis gives the following results: the symptoms are significant, positive predictors of the undesirability/rejection (β=.103, p<.001), incompetence (β=.068, p=. 020), and self-deprecation (β=.052, p<.001) schemas, but this is not true for the difference/loneliness (β=.020, p=.105) and helplessness (β=.015, p= .332) schemas. Apart from the undesirability/rejection schema domain (β=.076, p=.303), all of the others: incompetence (β=.607, p<.001), self-deprecation (β=.476, p=.007), difference/loneliness (β=.801, p<.001) and helplessness (β=.724, p<.001) are significant predictors. In the case of the complex indirect

effect (Effect = .101, 95% CI = .029, .161, p=.020), the confidence interval does not include the value 0, which means that the relationship between sexual distress and other symptoms of endometriosis (e.g. fertility problems) are jointly mediated by the cognitive schemas.

Looking at the results, the model gave a significant solution (CMIN=513.997, p=.000, CMIN/df=36.714). Afterwards, the comparative fit index (CFI) was checked. Based on the standards defined by Byrne (2010), it can be said that results above 0.90 indicate adequate model fit. In our case, CFI=.648, which shows that the model does not adequately represent our data. In the case of the Root Mean Square Error of Approximation (RMSEA) indicator literature standards (Byrne, 2010) indicate that values smaller than 0.08 are considered acceptable. In our case, RMSEA=.456, which is not part of the designated, ideal interval, and for this reason it identifies a significant discrepancy between the model we created and the data. According to the results, the fit indices cannot be considered acceptable, because none of the obtained results meet the threshold values established by Kline (2005) and Bryne (2010). Our model, which identifies cognitive schemas appearing in sexual situations as mediating factors in the relationship between endometriosis symptoms and sexual distress, does not represent our data well.

DISCUSSION AND CONCLUSION

The analysis points out that in cases where the symptoms of endometriosis are increased, a higher degree of maladaptive schema activation may be characteristic. This means that in addition to symptoms of endometriosis such as severe pelvic pain, limb pain, diarrhea, constipation, painful sexual intercourse, or infertility, those affected may have more significant dysfunctional beliefs about themselves. Thought contents and beliefs that refer to their own inferiority, feelings of being different or unlovable in sexual situations are more common and more solidified. These results are consistent with those formulated by Saariho et al. (2010) and Salari et al. (2022). Based on the nature of the relationship system, the reverse of the pattern can also be described in the same way, meaning that with a higher degree of maladaptive schema activation, the perceived pain symptoms prove to be more significant. Brown (2004) has already made findings in this regard, so it can be said that his approach, according to which maladaptive cognitive schemas can correlate with the attention and perceptual functions of an individual, in addition to the increased nature of body sensations and pain perception is also supported by our results. The earlier results of Rossi et al. (2022) indicate that, in addition to endometriosis symptoms, the experience of sexual

distress is more significant. In line with this, our analysis also shows that, in addition to the presence of a more intense pain experience in several areas and possible infertility problems, negative emotions arising due to sexuality-related concerns, fears, frustration, shame, readiness and desire problems are dominant. Previous research results of Evil et al. (2021) and Peixto & Nobre (2015) formed the basis of our theoretical framework, which pointed to a positive correlation between maladaptive schema activation and the different problem types related to sexuality. Our results, which show that apart from a more frequent, intense and extensive occurrence of dysfunctional convictions and beliefs, sexual distress can also be identified to a greater extent, support this proposition.

We based our assumption on the results of Zarbo et al. (2019), which pointed to the significant role of cognitive factors in this issue. According to our results, we failed to prove the full adequacy of our mediation model. Certain parts of the proposition have been confirmed, as it can be seen that together, maladaptive cognitive schemas mediate the relationship between pain during sexual intercourse and sexual distress, as well as the relationship between sexual distress and certain symptoms of endometriosis, such as infertility. This result can justify the importance of cognitive modification of the dysfunctional beliefs to support sexual health in the population of women with endometriosis symptoms. However, we do not see this explanatory power regarding the relationship between pelvic pain and sexual distress, or between bowel pain and sexual distress. Thereby, we can conclude that in the case of endometriosis symptoms which are not related to sexuality or conception difficulties, the correlation with sexual distress is not explained by the maladaptive schema activation that appears, and presumably these can be explained through other background mechanisms. Which can be explain by the following: bowel pain and pelvic pain are less related to sexuality or conception difficulties. They do not necessarily affect the quality of sex life or the family planning. So likely, they cause more significant functional impairment in other areas of life. Regarding pain during sexual intercourse and fertility problems however, women's thoughts about inferiority, rejection and otherness explain the connections with sexual distress.

Limitations

First of all, it can be said that participants included in the study were women who had already undergone endometriosis surgery. Since the main goal of the surgery is to reduce symptoms, it is likely that the pain symptoms are already present at a more moderate level in the members of our population, compared to those who also show symptoms, but have not yet undergone surgical intervention. In several cases, the preliminary studies worked only

with symptomatic groups without surgical intervention, so it is possible that those results, which were the starting point of our proposals, were related to a more severe symptom manifestation. More moderate symptoms have a less intense impact on everyday activities, the quality of sexual intercourse, and relationships, so this can be considered a potential explanatory factor in terms of our results.

In previous research, in addition to the explanatory nature of cognitive schemas, the results also showed the prominent influence of emotional disorders, especially depression, regarding the relationship between endometriosis symptoms and sexual distress (Davoli et al., 2018; Vakili et al., 2020). We worked without including these constructs in our research, therefore, it may be worthwhile to include the measurement of symptoms of emotional disorders in further studies. Finally, since the sample size shown in the research only works with the minimum number of cases, it is recommended to think about a more extended data collection, involving more participants, in order for our results to show a more accurate picture.

During the study, a correlational design was used. Consequently, the results do not reveal causal relationships. In the following, it is suggested to examine the relational system of constructs alongside an experimental arrangement.

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