Journal of Midwifery & Reproductive Health

JMRH.mums.ir

The Significance of Primary Incompatible Schema Differentiation in Women with Primary and Secondary Dyspareunia: Comparative cross-sectional study

Maryam Moghadasin (PhD)[1*], Hossein Rezaei (MSc)[2], Yasaman Mersi (MSc)[2]

[1] Associate Professor, Department of Clinical Psychology, Faculty of Psychology and Educational Sciences, Kharazmi University, Tehran, Iran

[2] Graduated of Clinical Psychology, Department of Clinical Psychology, Faculty of Psychology and Educational Sciences, Kharazmi University, Tehran, Iran

ARTICLE INFO

Article Type:
Original article

Article History:
Received: 11-Oct-2024
Accepted: 09-Feb-2026

Key words:
Dyspareunia
Sexual Dysfunctions
Psychological
Cognitive Behavioral
Therapy
Sexual Health

ABSTRACT

Background & aim: Dyspareunia negatively affects women's intimate relationships. Although early maladaptive schemas (EMS) have been linked to sexual dysfunction, few comparative studies were conducted in non-Western contexts. This study compared EMS among women with primary and secondary dyspareunia with a control group.

Methods: This comparative cross-sectional study was conducted in Tehran, Iran, between January and May 2023, including 1912 women (primary dyspareunia: n=402, secondary dyspareunia: n=104, control: n=1406). Women aged 18 to 45, married for at least one year, and willing to participate were included. Exclusion criteria were history of psychiatric or gynecological disorders, childbirth-related trauma, or sexual violence/abuse. Women with dyspareunia referred to the sexual/reproductive health clinic of a private hospital were recruited through purposive sampling. The control group was selected through convenience sampling and matched for demographic characteristics. Data were collected using the validated Persian version of the Young Schema Questionnaire and analyzed using one-way multivariate analysis of variance and discriminant analysis in SPSS version 26.0.

Results: Mean ages in the control, primary, and secondary dyspareunia groups were 29.49, 28.40, and 30.57 years, respectively. Women with dyspareunia exhibited significantly higher scores on EMS domains including disconnection/rejection, impaired autonomy, and over-vigilance/inhibition compared with controls ($P< 0.001$). Discriminant analysis yielded two significant functions (eigenvalues: 0.044 and 0.018), with a modest overall classification accuracy of 48.6%. No significant schema-pattern differences were found between primary and secondary dyspareunia groups ($P > 0.05$).

Conclusion: EMS significantly contribute to dyspareunia, indicating potential benefits of schema-focused interventions. Further research should examine long-term treatment outcomes.

► *Please cite this Paper as*:
Moghadasin M, Rezaei H, Mersi Y. The Significance of Primary Incompatible Schema Differentiation in Women with Primary and Secondary Dyspareunia: Comparative cross-sectional study. Journal of Midwifery and Reproductive Health. 2026; 14(4): 1-9. DOI: 10.22038/jmrh.2026.83240.2499

Introduction

Sexual dysfunction encompasses a wide range of difficulties that individuals may experience in their intimate lives, including arousal disorders, desire disparities, painful intercourse, and challenges in achieving orgasm (1).

Among the various types of sexual dysfunction, dyspareunia is of particular clinical concern. Dyspareunia is characterized by recurrent or persistent genital or pelvic pain associated with sexual intercourse or attempted

* *Corresponding author*: Maryam Moghadasin, Associate Professor, Department of Clinical Psychology, Faculty of Psychology and Educational Sciences, Kharazmi University, Tehran, Iran. Tel; 00989131942296; Email: mmoghadasin@khu.ac.ir

vaginal penetration (1). This complex condition affects not only physical functioning but also emotional well-being, self-esteem, and the quality of intimate relationships (2). Hormonal changes during lactation or menopause can also contribute to vaginal atrophy and dryness, leading to pain during intercourse (3). Additionally, sociocultural norms, sexual scripts, and relationship dynamics may influence the onset and persistence of symptoms, particularly in traditional or low-communication couples (4). Globally, the prevalence of dyspareunia ranges from 3% to 18%; lifetime prevalence estimates reach 10% to 28% (5). In Iran, a population-based study reported that 33% of women experienced pain or fear during intercourse, and 10.5% met the diagnostic criteria for genito-pelvic pain/penetration disorder when sexual distress was included (6).

Dyspareunia is commonly categorized into primary and secondary types. Primary dyspareunia refers to pain occurring from the onset of sexual activity, whereas secondary dyspareunia involves pain that develops after a period of pain-free intercourse (5). While both forms of dyspareunia may share overlapping symptoms, their etiologies often differ. Primary dyspareunia may be associated with psychosocial factors such as anticipatory anxiety, inadequate sexual education, negative cultural messaging, and traumatic initial sexual experiences (2, 7). In contrast, secondary dyspareunia is often associated with identifiable physiological conditions such as endometriosis, vaginal infections, pelvic floor dysfunction, or postpartum trauma (5, 8). Understanding these distinctions, along with the multifaceted factors contributing to dyspareunia, is essential for developing effective therapeutic interventions (2).

Early maladaptive schemas, originally conceptualized by Jeffrey Young (9), represent pervasive themes or patterns that influence individuals' emotions, memories, cognitive processes, and feelings (10). These schemas typically take root during childhood and adolescence but continue to evolve throughout an individual's life, potentially leading to significant functional impairments when left unaddressed (11). They are categorized into 18 distinct types grouped into five domains—disconnection/rejection, impaired autonomy and performance, other-directedness, over-vigilance and inhibition, and impaired limits (9, 12). These schemas play a central role in various psychological disorders, including depression and anxiety (13). They also affect various aspects of human behavior and psychological functioning, including sexual dysfunction (11).

Dyspareunia, in particular, has been linked to several specific early maladaptive schemas (14). Moreover, women with sexual dysfunction have been found to report higher levels of early maladaptive schemas, particularly failure, dependence/incompetence, and vulnerability to danger, as well as greater activation of incompetence-related schemas in response to negative sexual experiences (11). In women with endometriosis, maladaptive cognitive schemas were found to mediate the relationship between pain during sexual intercourse and sexual distress (15). In another study, women with vaginismus showed elevated levels of early maladaptive schemas such as negativity/pessimism, vulnerability to harm, unrelenting standards, and approval-seeking, compared to healthy controls (16, 17). Women with lifelong vaginismus have also been found to endorse more maladaptive beliefs and more restricted sexual behavior, particularly regarding penetration-related anxiety, control, and self-efficacy (17, 18). Studies underscore the psychological components of dyspareunia, linking painful intercourse with anxiety, anticipatory fear, and dysfunctional relational patterns (2). Importantly, research suggests that cognitive schemas activated during sexual experiences are associated with early maladaptive schemas, indicating that enduring maladaptive schemas may influence cognitive and emotional responses in sexual contexts (19). Despite these findings, the specific relationship between early maladaptive schemas and dyspareunia remains insufficiently understood, particularly across primary and secondary subtypes. Although previous research has examined these factors largely in relation to sexual dysfunction more broadly, few studies have directly compared early maladaptive schemas in women with primary and secondary dyspareunia. To address this gap, the present study aimed to explore and compare early

maladaptive schemas among women with primary and secondary dyspareunia**,** as well as a control group.

Materials and Methods

This research employed a descriptive, comparative cross-sectional design to examine early maladaptive schemas among three groups: women with primary dyspareunia, women with secondary dyspareunia, and a control group without dyspareunia.

This study was conducted in Tehran, Iran, between January and May 2023, and included a total of 1,912 married women drawn from two main categories: (1) Control Group: The control group consisted of 1,406 married women recruited through the Telegram channel named "Queens of Wives." Inclusion criteria were: absence of primary or secondary dyspareunia symptoms, age between 18 and 45 years, and at least one year of marriage. (2) Dyspareunia Group: The dyspareunia group included 506 women diagnosed with dyspareunia who were between 18 and 45 years old, married for at least one year, of whom 402 had primary dyspareunia, and 104 had secondary dyspareunia. Participants in this group sought treatment for vaginal pain as their chief complaint at the sexual and reproductive health clinic of a private hospital in Tehran, Iran. Sexual and reproductive health specialists made diagnoses following standardized clinical protocols. Detailed records were maintained regarding the diagnostic process, including the number of clinicians involved and the specific diagnostic criteria applied. The distinction between primary and secondary dyspareunia was made by trained reproductive health clinicians based on established diagnostic guidelines and informed clinical judgment, ensuring consistency and accuracy across assessments.

All participants were willing to take part in this study and provided informed consent. Before providing informed consent and completing the questionnaire, all participants received information about the study objectives, the voluntary nature of participation, confidentiality of their responses, and the contact details of the research team. Participants were also informed that they could withdraw from the study at any time without consequences. The requirement of a minimum one-year marriage duration reflects the cultural context of Iran, where sexual relations outside marriage are socially unacceptable. Consequently, access to formal samples of unmarried individuals diagnosed with dyspareunia was not feasible (2).

Participants (in all groups) were excluded if they had a history of psychiatric disorders (e.g., depression, anxiety), gynecological conditions such as vaginitis or endometriosis, childbirth-related trauma (e.g., episiotomy, colporrhaphy), or a history of sexual violence, abuse, or rape. Individuals who did not provide informed consent were also excluded from the study.

Data were collected using the Young Schema Questionnaire (YSQ), a self-report instrument designed to assess early maladaptive schemas. The questionnaire comprised 75 items grouped into five domains and was completed independently by participants. Each item was rated on a 6-point Likert scale ranging from 1 (completely untrue) to 6 (completely true). Schema activation was assessed by counting the number of items rated 5 or 6 within each schema cluster, with higher counts indicating stronger presence of that schema (9, 20).

The Young Schema Questionnaire has been validated in previous research (21). In Iran, the questionnaire also showed high internal consistency, with a Cronbach's alpha of 0.87 reported for the overall scale, supporting its reliability and validity in a large sample of psychiatric patients (22). In addition to the YSQ, demographic and background information, including age, Duration of marriage, and educational attainment, was collected from all participants.

Data were collected online using secure Google Forms for all participants. After completing the survey, participants were provided with feedback on their questionnaire responses, a reminder of contact details for the research team, and resources for individuals experiencing distress related to sexual dysfunction.

Data were analyzed using SPSS version 26. Both descriptive and inferential statistical techniques were applied. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were calculated to

summarize the sample characteristics. Inferential analyses included discriminant analysis, assessment of normality (skewness and kurtosis), and multivariate analysis of variance (MANOVA). Statistical significance was set at $P < 0.05$.

Results

A total of 1,912 women participated in the study, including 1,406 individuals in the control group, 402 with primary dyspareunia, and 104 with secondary dyspareunia. The mean age was 29.49 years (SD = 8.58) in the control group, 28.40 years (SD = 7.91) in the primary dyspareunia group, and 30.57 years (SD = 6.97) in the secondary dyspareunia group. Demographic characteristics of the study participants are presented in Table 1.

Table 1. Demographic Characteristics of the Study Participants

Characteristic	Control (N = 1,406)	Primary dyspareunia (N = 402)	Secondary dyspareunia (N = 104)	Total (N = 1,912)
Age, M (SD)	29.49 (8.58)	28.40 (7.91)	30.57 (6.97)	29.32 (8.38)
Duration of marriage, years, M (SD)	9.57 (6.45)	5.32 (3.89)	7.58 (4.33)	8.46 (5.79)
Educational attainment, N (%)				
Below high /school diploma	65 (4.6%)	12 (3.0%)	8 (7.7%)	85 (4.5%)
Diploma	688 (48.9%)	159 (39.6%)	52 (50.0%)	899 (47.0%)
Associate degree	136 (9.7%)	44 (10.9%)	10 (9.6%)	190 (9.9%)
Bachelor's degree	440 (31.3%)	145 (36.1%)	27 (25.9%)	612 (32.0%)
Master's degree	73 (5.2%)	37 (9.2%)	6 (5.8%)	116 (6.1%)
Doctoral degree	4 (0.3%)	5 (1.2%)	1 (1.0%)	10 (0.5%)

M = mean; SD = standard deviation. Percentages for educational attainment are calculated within each group.

The multivariate analysis indicated a significant overall difference in the pattern of early maladaptive schemas across the three study groups (Wilks' $\Lambda = .954$, $F(30, 3790) = 3.016$, $P < .001$). As shown in Table 2, women with primary dyspareunia had significantly higher scores than controls on 14 of the 15 schemas.

Table 2. Early maladaptive schemas across the study groups

Early maladaptive schema	Control (N = 1,406), M (SD)	Primary dyspareunia (N = 402), M (SD)	Secondary dyspareunia (N = 104), M (SD)	F(2, 1909)	P-Value
Emotional Deprivation	13.81 (6.99)	15.28 (7.28)	15.82 (7.30)	9.53	<0.001
Abandonment/Instability	14.30 (6.41)	15.60 (6.56)	15.13 (6.73)	6.72	0.001
Mistrust/Abuse	12.27 (6.11)	13.66 (6.52)	13.55 (6.83)	9.03	<0.001
Social Isolation/Alienation	9.67 (5.14)	11.30 (5.70)	11.22 (5.95)	17.17	<0.001
Defectiveness/Shame	8.15 (4.25)	9.45 (5.13)	9.59 (5.16)	16.18	<0.001
Failure	10.71 (5.42)	11.84 (5.91)	12.40 (6.19)	9.71	<0.001
Dependence/Incompetence	8.50 (4.46)	9.57 (5.36)	9.88 (5.57)	11.00	<0.001
Vulnerability to Harm or Illness	12.41 (6.42)	14.26 (6.85)	14.09 (7.12)	14.34	<0.001
Enmeshment/Undeveloped Self	9.10 (4.77)	10.52 (5.34)	9.76 (4.49)	13.49	<0.001
Subjugation	13.09 (5.60)	13.92 (5.87)	14.11 (5.90)	4.36	0.013
Self-Sacrifice	18.50 (5.28)	19.16 (4.94)	19.36 (6.10)	3.36	0.035
Emotional Inhibition	12.18 (6.15)	14.40 (6.42)	12.85 (6.32)	20.05	<0.001
Unrelenting Standards/Hypercriticalness	18.00 (5.53)	19.02 (5.65)	18.53 (5.76)	5.42	0.005
Entitlement/Grandiosity	15.41 (5.28)	16.78 (5.50)	15.48 (5.48)	10.37	<0.001
Insufficient Self-Control/Self-Discipline	14.64 (5.56)	16.12 (5.54)	14.88 (5.76)	11.17	<0.001

These differences were observed for emotional deprivation (mean difference = 1.47, P =0 .001), abandonment/instability (1.30, P = 0.001), mistrust/abuse (1.40, P < .001), social isolation/alienation (1.63, P < 0.001), defectiveness/shame (1.30, P < .001), failure (1.13, P = 0.001), dependence/incompetence (1.07, P < 0.001), vulnerability to harm or illness (1.85, P < 0.001), enmeshment/undeveloped self (1.42, P < 0.001), subjugation (0.83, P = .027), emotional inhibition (2.22, P < 0.001), unrelenting standards/hypercriticalness (1.02, P = 0.003), entitlement/grandiosity (1.37, P < 0.001), and insufficient self-control/self-discipline (1.49, P < 0.001). The only exception was self-sacrifice, for which the primary dyspareunia group did not differ significantly from controls (mean difference = 0.66, P =0 .068).

Compared with controls, women with secondary dyspareunia had significantly higher scores on six schemas: emotional deprivation (mean difference = 2.01, P = 0.014), social isolation/alienation (1.55, P = 0.012), defectiveness/shame (1.43, P = 0.005), failure (1.69, P = 0.008), dependence/incompetence (1.39, P = 0.011), and vulnerability to harm or illness (1.68, P = 0.032). Differences between the secondary dyspareunia and control groups were not statistically significant for the remaining schemas. Importantly, none of the 15 schemas differed significantly between the primary and secondary dyspareunia groups (all P > 0.05), indicating broadly similar schema profiles across the two dyspareunia subtypes.

Discriminant analysis was subsequently conducted to examine whether the early maladaptive schemas could distinguish among women in the control, primary dyspareunia, and secondary dyspareunia groups. Two discriminant functions were identified. The first function had an eigenvalue of 0.044, accounted for 70.97% of the explained variance, and had a canonical correlation of 0.206. This function was statistically significant (Wilks' λ = 0.940, χ^2 = 117.05, P < 0.001). The second function had an eigenvalue of 0.018, accounted for 29.03% of the explained variance, and had a canonical correlation of 0.134. This function was also statistically significant (Wilks' λ = 0.982, χ^2 = 34.34, P < 0.001). The discriminant functions and their statistical indices are presented in Table 3.

Table 3. Summary of discriminant functions and their statistical significance

Discriminant function	Eigenvalue	Variance explained (%)	Canonical correlation	Wilks' λ	χ^2	P-Value
1	0.044	70.97	0.206	0.940	117.05	<0.001
2	0.018	29.03	0.134	0.982	34.34	<0.001

The classification results showed that the discriminant model correctly classified 723 of the 1,406 women in the control group (51.42%), 163 of the 402 women with primary dyspareunia (40.55%), and 45 of the 104 women with secondary dyspareunia (43.27%). Thus, 931 of the 1,912 participants were correctly classified, corresponding to an overall classification accuracy of 48.69%. Among women with primary dyspareunia, 128 (31.84%) were classified as controls and 111 (27.61%) as having secondary dyspareunia.

Table 4. Classification results of the discriminant analysis for the three study groups

Observed group	Predicted: Control	Predicted: Primary dyspareunia	Predicted: Secondary dyspareunia	Total
Control	723 (51.42%)	334 (23.75%)	349 (24.82%)	1,406 (100%)
Primary dyspareunia	128 (31.84%)	163 (40.55%)	111 (27.61%)	402 (100%)
Secondary dyspareunia	38 (36.54%)	21 (20.19%)	45 (43.27%)	104 (100%)
Total	889	518	505	1,912

Note. Percentages are calculated within each observed group. Correct classifications are shown on the diagonal

Among women with secondary dyspareunia, 38 (36.54%) were classified as controls and 21 (20.19%) as having primary dyspareunia. In the control group, 334 women (23.75%) were

classified as having primary dyspareunia and 349 (24.82%) as having secondary dyspareunia. The complete classification results are presented in Table 4.

Discussion

In this study, we examined the role of early maladaptive schemas in women with primary and secondary dyspareunia compared to a control group. Although the two dyspareunia subtypes differed in the timing of symptom onset, no significant differences emerged between them with respect to schema domain scores. In contrast, both dyspareunia groups demonstrated significantly higher levels of schema activation than the control group. These findings are consistent with previous research showing that early maladaptive schemas are more prominent among women experiencing sexual difficulties (11, 15, 19).

In our findings, the most prominent schemas among women with dyspareunia were emotional deprivation, mistrust/abuse, and defectiveness/shame. These domains reflect enduring beliefs associated with unmet emotional needs, relational insecurity, and a heightened sense of personal inadequacy, characteristics that may inhibit intimacy and contribute to the experience of sexual pain (11, 15).Specific schema-related vulnerabilities, including emotional deprivation, mistrust/abuse, and defectiveness/shame, have been associated with sexual and relational difficulties in previous studies (15, 19), while relational anxiety has also been linked to difficulties in intimate relationships (23). Evidence from Iranian samples is also consistent with this pattern. Alimoradi et al. (19) found that emotional deprivation, social isolation, and emotional inhibition significantly predicted cognitive schemas activated in sexual contexts among Iranian women, whereas Hashemian et al. (24) reported that emotional deprivation, mistrust, abandonment, and defectiveness significantly predicted sexual satisfaction.

Although in our study self-sacrifice also showed a significant overall F-statistic, post-hoc comparisons indicated that the primary dyspareunia group did not differ significantly from controls on this schema. Discriminant function analysis further indicated that the schema profiles of women with primary and secondary dyspareunia did not differ significantly, suggesting a shared underlying cognitive-emotional structure. This pattern suggests that dyspareunia, irrespective of onset type, may be associated with common maladaptive schema configurations.

Our results are consistent with previous research highlighting the role of maladaptive schemas in sexual dysfunction (12, 16). Nevertheless, they diverge from the findings of Roemmele and Messman-Moore (13), who reported greater schema variability across subtypes among women with a history of sexual trauma. In the present study, women with a known history of sexual trauma were excluded, which may account for this difference. Similarly, Nur (16) identified schema differentiation in sexual pain conditions as a function of symptom severity. These discrepancies may be partly explained by the exclusion of participants with trauma histories in the present study, as well as by the influence of sociocultural schema reinforcement, which may foster greater uniformity in emotional and cognitive patterns across different symptom presentations.

From a theoretical perspective, early maladaptive schemas are understood as deeply ingrained cognitive-emotional patterns that shape individuals' self-perception and relational functioning. Gong (10) describes these schemas as typically rooted in early experiences of emotional neglect or relational disruption, persisting into adulthood and becoming reactivated in emotionally intimate contexts.

This absence of schema differentiation challenges the commonly held assumption that primary and secondary dyspareunia represent fundamentally distinct psychological conditions. Although these subtypes differ in terms of clinical onset, the similarity of their schema profiles can point to a shared underlying psychological structure. Thaler (18) suggested that emotional schemas—particularly those involving deprivation and mistrust—may become especially salient in the context of sexual pain, thereby overshadowing categorical distinctions based on onset. In addition, anticipatory anxiety and avoidant behaviors (5) appear to operate as schema-driven processes

that maintain distress across both dyspareunia subtypes.

Beyond enduring, trait-level schemas, Nobre (14) emphasized the relevance of situational schema activation in understanding sexual dysfunction. The development of the Cognitive Schema Activation in Sexual Context Questionnaire (QCSASC), which assesses schemas activated during unsuccessful sexual encounters, illustrates how maladaptive beliefs may intensify in real-time during intimate situations.

Although the present study employed a global schema measure (YSQ-SF), the elevated domains identified here likely increase vulnerability to momentary cognitive disruptions during sexual activity. Future research integrating trait-based assessments with context-sensitive measures may offer a more nuanced and dynamic account of schema processes in sexual pain disorders.

Our findings are also consistent with the work of Birnbaum (25) who reported that individuals with more secure emotional schemas tend to experience greater sexual and relational satisfaction. In contrast, the schema domains elevated among women with dyspareunia in the present study—such as emotional inhibition, social isolation, and defectiveness/shame—have been shown to undermine relational closeness and emotional trust. This pattern was clearly reflected in our sample, as these schemas were significantly elevated in both primary and secondary dyspareunia groups. Such cognitive-emotional configurations are likely to interfere with the formation and maintenance of emotionally fulfilling and physically satisfying intimate relationships, thereby reinforcing schema activation during sexual experiences (26).

This study has several strengths. It draws on a large, clinically heterogeneous sample, with clear diagnostic differentiation among dyspareunia subtypes. All participants were assessed using standardized protocols by trained professionals, and a validated Persian adaptation of the Young Schema Questionnaire was employed. The exclusion of gynecological and psychiatric confounders further strengthens internal validity. Importantly, the inclusion of an underrepresented population provides a valuable contribution to the literature on maladaptive schemas and sexual dysfunction within non-Western cultural contexts. Nevertheless, certain limitations should be acknowledged. The cross-sectional design precludes causal inference. Although individuals with known trauma histories were excluded, more fine-grained assessments of childhood emotional neglect or attachment patterns could enhance the interpretation of schema development. In addition, reliance on self-report measures may introduce response bias, particularly in culturally sensitive areas such as sexual functioning.

From a clinical perspective, the findings suggest that schema-focused interventions—such as schema therapy or integrative cognitive approaches—may be beneficial for women with dyspareunia, regardless of subtype. Interventions targeting core maladaptive beliefs related to shame, mistrust, and emotional deprivation may help improve sexual satisfaction and emotional intimacy. Given the substantial overlap in schema profiles between primary and secondary dyspareunia, therapeutic approaches may be more effective when they focus on shared psychological vulnerabilities rather than onset-based distinctions.

Future research would benefit from longitudinal designs to examine schema trajectories and treatment responses over time. Qualitative investigations exploring women's lived experiences of schemas in relation to their bodies, intimate relationships, and sociocultural roles may further inform culturally sensitive and effective clinical interventions for dyspareunia.

Conclusion

This study highlights the significant role of early maladaptive schemas in women with primary and secondary dyspareunia compared with a control group. These results underscore the contribution of early maladaptive schemas—often rooted in adverse developmental experiences—to the persistence of dyspareunia and highlight the clinical relevance of schema-focused interventions. Therapeutic approaches that directly target maladaptive beliefs related to emotional deprivation, mistrust, and shame may be particularly beneficial in improving sexual functioning and emotional intimacy.

Declerations

Acknowledgments

The authors would like to thank all women who generously participated in this study. We also appreciate the cooperation of healthcare professionals and therapists who facilitated access to the study population. We are grateful for the support received from our academic institutions.

Conflicts of interest

The authors declared no conflicts of interest.

Ethical considerations

This study was conducted in accordance with the Declaration of Helsinki. Written informed consent was obtained from all participants. Participants' confidentiality, anonymity, and privacy were strictly maintained, and they were informed of their right to withdraw from the study at any time without any consequences. All data were securely stored, accessible only to the research team, and destroyed after the designated retention period.

Code of Ethics

This study was approved by the Ethics Committee of Kharazmi University (approval code: IR.KHU.REC.1401.076).

Use of Artificial Intelligence (AI)

Artificial intelligence, including ChatGPT (OpenAI), was used to assist with language editing, sentence restructuring, and improving the clarity of the manuscript. AI tools were not used to generate or modify the study data, statistical analyses, or interpretation of the findings. All scientific content, analyses, interpretations, and final editorial decisions were reviewed and approved by the authors.

Funding

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

Authors' contribution

MM conceived and designed the study, developed the methodology, participated in the identification and clinical assessment of participants alongside specialist clinicians, conducted the data analysis, and led the interpretation of the findings and finalization of the manuscript. HR contributed to the initial data analysis and interpretation and drafted the initial version of the manuscript. YM contributed to participant recruitment, data collection, and initial participant interviews. All authors critically reviewed and approved the final version of the manuscript and agreed to be accountable for all aspects of the work.

References

1. American Psychiatric Association. Diagnostic and statistical manual of mental disorders: DSM-5. 5th editor. Washington, DC: American Psychiatric Publishing; 2013.
2. Meana M, Binik YM. The biopsychosocial puzzle of painful sex. Annual Review of Clinical Psychology. 2022;18(1):471–495.
3. Gandhi J, Chen A, Dagur G, Suh Y, Smith N, Cali B, et al. Genitourinary syndrome of menopause: an overview of clinical manifestations, pathophysiology, etiology, evaluation, and management. American Journal of Obstetrics and Gynecology. 2016; 215(6): 704–711.
4. Erbil N. Relationship between sexual myths and sexual function of women. International Journal of Caring Sciences. 2019; 12(3): 1570–1579.
5. Carlson K, Mikes BA. Dyspareunia: StatPearls Publishing; 2026. Available from: https:// www.ncbi. nlm.nih.gov/ books/NBK562159/.
6. Alizadeh A, Farnam F, Raisi F, Parsaeian M. Prevalence of and risk factors for genito-pelvic pain/penetration disorder: a population-based study of Iranian women. The Journal of Sexual Medicine. 2019; 16(7): 1068–1077.
7. Banaei M, Kariman N, Ozgoli G, Nasiri M. Bio-psychosocial factor of vaginismus in Iranian women. Reproductive Health. 2021; 18(1): 210.
8. Banaei M, Kariman N, Ozgoli G, Nasiri M, Ghasemi V, Khiabani A, et al. Prevalence of postpartum dyspareunia: a systematic review and meta-analysis. International Journal of Gynecology & Obstetrics. 2021; 153(1): 14–24.
9. Young JE, Klosko JS, Weishaar ME. Schema therapy: A practitioner's guide. 1st ed. New York: Guilford Press, 2003.
10. Gong J, Chan RC. Early maladaptive schemas as mediators between childhood maltreatment and later psychological

distress among Chinese college students. Psychiatry Research. 2018; 259: 493–500.
11. Oliveira C, Nobre PJ. Cognitive structures in women with sexual dysfunction: the role of early maladaptive schemas. The Journal of Sexual Medicine. 2013; 10(7): 1755–1763.
12. Tariq A, Reid C, Chan SW. A meta-analysis of the relationship between early maladaptive schemas and depression in adolescence and young adulthood. Psychological Medicine. 2021; 51(8): 1233–1248.
13. Roemmele M, Messman-Moore TL. Child abuse, early maladaptive schemas, and risky sexual behavior in college women. Journal of Child Sexual Abuse. 2011; 20(3): 264–283.
14. Nobre PJ, Pinto-Gouveia J. Questionnaire of cognitive schema activation in sexual context: A measure to assess cognitive schemas activated in unsuccessful sexual situations. Journal of Sex Research. 2009; 46(5): 425–437.
15. Gálfi B, Cobeanu O, Kálcza-Jánosi K, Balázsi R. Sex (Is Not) On Fire: The Mediating Role of Cognitive Schemas Between Symptoms of Endometriosis and Sexual Distress. Studia Universitatis Babeş-Bolyai, Psychologia-Paedagogia. 2024; 69(1): 167 – 182.
16. Dikmen SNT, Safak Y. Effect of early maladaptive schemas and sexual self-schemas in vaginismus. International Journal of Medical Case Reports. 2020; 4(11): 15–21.
17. Cherner RA, Reissing ED. A comparative study of sexual function, behavior, and cognitions of women with lifelong vaginismus. Archives of Sexual Behavior. 2013; 42(8): 1605–1614.
18. Thaler L. Cognitive processing in women with dyspareunia: What is more salient, the pain or the sex? [Master's thesis]. Las Vegas, NV: University of Nevada, Las Vegas; 2008.
19. Alimoradi Z, Zarabadipour S, Arrato NA, Griffiths MD, Andersen BL, Bahrami N. The relationship between cognitive schemas activated in sexual context and early maladaptive schemas among married women of childbearing age. BMC Psychology. 2022; 10(1): 131.
20. Waller G, Meyer C, Ohanian V. Psychometric properties of the long and short versions of the Young Schema Questionnaire: Core beliefs among bulimic and comparison women. Cognitive Therapy and Research. 2001; 25(2): 137–147.
21. Malogiannis I, Aggeli A, Garoni D, Tzavara C, Michopoulos I, Pehlivanidis A, et al. Validation of the Greek version of the Young Schema Questionnaire-Short Form 3: Internal consistency reliability and validity. Psychiatrike= Psychiatriki. 2018; 29(3): 220–230.
22. Khosravani V, Najafi M, Mohammadzadeh A. The Young Schema questionnaire-short form: A Persian version among a large sample of psychiatric patients. International Journal of Mental Health and Addiction. 2020; 18(4): 949–967.
23. Saritas-Atalar D, Altan-Atalay A. Differential roles of early maladaptive schema domains on the link between perceived parenting behaviors and depression, anxiety, and anger. Current Psychology. 2020; 39(4): 1466–1475.
24. Hashemian SS, Shayan S, Omidvar A, Modarres GM. Relationship between early maladaptive schemas and sexual satisfaction in working women in Mashhad Ferdowsi University and Shiraz University, Iran. 2015.
25. Birnbaum GE, Reis HT, Mikulincer M, Gillath O, Orpaz A. When sex is more than just sex: attachment orientations, sexual experience, and relationship quality. Journal of Personality and Social Psychology. 2006; 91(5): 929-943.
26. Yazdkhasti M, Molaeinezhad M, Tarrahi MJ, Karahmadi M, Salimi H. Investigating the relationship between early maladaptive schemas and sexual Self-Confidence and sexual Self-Efficacy in individuals with gender dysphoria. Advanced Biomedical Research. 2023; 12: 232.