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Psychological and Sociocultural Correlates of Genito-Pelvic Pain/Penetration Disorder in Iranian Women: A Comparative Study of Sexual Self-Schema and Temperament

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Background: Genito-Pelvic Pain/Penetration Disorder (GPPPD) is a distressing sexual dysfunction often shaped by psychological and sociocultural factors. Although sexual self-schema and temperament traits may contribute to GPPPD, little is known about their role in non-Western contexts such as Iran. This study aimed to compare sexual self-schema, affective-emotional temperament, and selected sociocultural factors between Iranian women with GPPPD and healthy controls.

Methods: This case–control study recruited married women aged 18–45 years from a referral fertility and sexual health clinical setting in Tehran, Iran. Cases were clinically diagnosed with GPPPD, and controls were randomly selected from eligible women attending the same settings. Participants completed validated Persian versions of the Sexual Self-Schema Questionnaire and Affective and Emotional Composite Temperament Scale. Demographic and psychosocial data, including self-reported religiosity and employment characteristics, were collected. Multivariable logistic regression identified factors associated with GPPPD.

Results: The final sample included 75 women: 38 with GPPPD and 37 controls. Women with GPPPD had higher shy–cautious schema scores than controls (19.5 ± 4.2 vs 17.3 ± 4.2; p = 0.035). Emotional sensitivity was also higher in women with GPPPD (35.7 ± 5.9 vs 33.6 ± 7.9) and independently associated with GPPPD (OR = 1.14, 95% CI: 1.02–1.27). Obsessive temperament was positively associated with GPPPD (OR = 2.54, 95% CI: 1.09–5.89), while euthymic temperament was negatively associated (OR = 0.47, 95% CI: 0.25–0.90). Higher self-reported religiosity increased the odds of GPPPD (OR = 5.89, 95% CI: 1.47–23.69), whereas spousal freelance employment reduced the odds (OR = 0.20, 95% CI: 0.04–0.98).

Conclusion: These findings suggest that GPPPD in Iranian women may be better understood within an integrated psychological and sociocultural framework incorporating cognitive schemas, emotional sensitivity, temperament traits, and religious beliefs, supporting culturally sensitive psychological assessment and intervention.

Plain Language Summary: Pain or difficulty during sexual intercourse is a common but often misunderstood problem for many women. This study looked at how personality traits and beliefs about sexuality might be linked to a condition called *Genito-Pelvic Pain/Penetration Disorder* (GPPPD) among married women in Iran. We compared 38 women diagnosed with GPPPD to 37 women without sexual problems. Each participant completed questionnaires that measured emotional traits and sexual self-image.

Women with GPPPD were more likely to describe themselves as shy or cautious in sexual situations, more emotionally sensitive, and more likely to have obsessive personality traits. They also reported higher levels of religiosity. In contrast, women with more positive and stable moods were less likely to have GPPPD.

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These findings suggest that psychological and cultural factors—such as beliefs about sexuality, emotional temperament, and religious values—play important roles in this condition. Understanding these links can help healthcare professionals design more effective, culturally sensitive treatments for women experiencing sexual pain or fear of penetration.

Keywords: genito-pelvic pain/penetration disorder, sexual dysfunction, sexual-schema, temperament, Iranian women

Introduction

Genito-Pelvic Pain/Penetration Disorder (GPPPD) is a sexual dysfunction characterized by persistent or recurrent difficulties with one or more of the following: (1) vaginal penetration during intercourse, (2) marked vulvovaginal or pelvic pain during vaginal intercourse or penetration attempts, (3) marked fear or anxiety about pain in anticipation of, during, or as a result of vaginal penetration, and (4) marked tensing or tightening of the pelvic floor muscles during attempted vaginal penetration. These symptoms must persist for a minimum of approximately six months, cause clinically significant distress, and not be better explained by a nonsexual mental disorder, medical condition, or the effects of a substance or medication.[1] This condition is often accompanied by anticipatory anxiety, avoidance behaviors, and involuntary muscle contraction. Beyond the immediate sexual dysfunction, GPPPD can have profound consequences on marital satisfaction, sexual self-esteem, and overall emotional well-being.[2]

Although biological explanations for painful intercourse have been explored, growing evidence supports a multifactorial model in which psychological, interpersonal, and sociocultural factors interact in the development and maintenance of GPPPD. Women with GPPPD often report restrictive sexual attitudes, anxiety-related symptoms, and adverse sexual or relational experiences, while cultural norms and socioreligious expectations may also influence how symptoms are experienced, interpreted, and disclosed.[2,3] This is particularly relevant in Iran, where sexuality is often framed within a conservative sociocultural context shaped by religious values, modesty norms, gender expectations, and limited open discussion of sexual matters.[4] Cross-cultural evidence comparing Iranian and New Zealand women has shown that culturally bound sexual beliefs and cognitive-emotional factors are associated with women's sexual dissatisfaction.[4] In such settings, sexual attitudes and self-schema may reflect not only individual psychological characteristics, but also internalized cultural expectations regarding sexual expression, shame, and acceptability. The wide variation in reported prevalence of GPPPD across societies, including estimates of 5% to 17% in Western contexts[5] and 8% to 30% in Iran, further underscores the need for context-specific research.[6]

Among the psychological factors that may contribute to GPPPD, two domains are of particular interest: sexual self-schema and affective-emotional temperament. Sexual self-schemas are enduring cognitive structures derived from previous sexual experiences that shape how individuals perceive and express their sexuality.[7] Andersen and Cyranowski conceptualize these schemas along three dimensions—romantic–passionate, open–direct, and shy–cautious.[8] Prior research has demonstrated that women with histories of sexual trauma tend to develop more negative sexual schemas,[9] and that women with vaginismus score lower on positive schema dimensions compared to healthy controls.[3] However, this association has not yet been explored in the Iranian population, where cultural factors may influence the formation and expression of such schemas in different ways.

Affective-emotional temperament, meanwhile, refers to stable, biologically rooted patterns of emotional reactivity and regulation. The Affective and Emotional Composite Temperament Scale (AFECT) captures both emotional temperaments—such as volition, anger, inhibition, sensitivity, coping, and control—and affective tendencies like anxiety, depression, euphoria, and cyclothymia.[10] Studies have linked these temperamental profiles to vulnerability to a range of psychological disorders, including sexual dysfunctions.[11,12]

Despite their clinical relevance, psychological traits such as sexual self-schema and temperament remain underexplored in the Iranian context. Most studies conducted in Iran have focused on prevalence estimates or demographic correlates of GPPPD,[13,14] with minimal attention paid to underlying cognitive-emotional structures. This is particularly important given the complex interplay of religious values, gender roles, and sociocultural norms surrounding sexuality in Iranian society.

A deeper understanding of the psychological characteristics of women with GPPPD—particularly in relation to self-schema and temperament—may help improve diagnostic insight and inform more effective, culturally responsive treatment approaches, such as schema-based cognitive therapies. Therefore, the present study was designed to examine and compare sexual self-schema and affective-emotional temperament in Iranian women diagnosed with GPPPD and healthy controls, aiming to address a critical gap in national and regional literature.

Methods

Study Design and Setting

This case-control study was conducted at a referral Fertility Center and its physicians related medical offices, a referral and research facility in Tehran, Iran. Data collection spanned September 2021 to April 2024 focusing on comparing psychological profiles between women diagnosed with GPPPD and healthy controls. The study protocol was approved by the Ethics Committee of Avicenna Research Institute IR.ACECR.AVICENNA.REC.1399.019. Informed consent was obtained from all participants prior to study enrollment and data confidentiality was maintained through anonymized coding of participant information. The study was designed, conducted, and reported in accordance with the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) guidelines.

Participants

Women aged 18–45 years referring to the sexual health clinic of the center and newly diagnosed with GPPPD according to DSM-5 criteria formed the case group.[1] Diagnosis was established through a comprehensive clinical assessment by trained gynecologists and sexual health consultants. Healthy controls were recruited from eligible women attending pre-pregnancy outpatient clinics and related medical offices within the same clinical setting as the case group. Controls were selected through simple random sampling from eligible attendees. Recruitment from the same healthcare setting was used to ensure that cases and controls were drawn from a comparable source population. Controls were eligible if they had no history of sexual dysfunction or reproductive health problems, as confirmed by clinical interview.

Inclusion criteria for controls included no history of sexual dysfunction or reproductive health problems, as confirmed by clinical interview. Exclusion criteria for both groups were current psychiatric disorders requiring pharmacological treatment, ongoing psychotherapy for sexual dysfunction or any psychological problem, suspected untreated psychiatric problems based on clinical interview, history of infertility, recurrent miscarriage, or gamete donation.

Sample Size

Sample size estimation was based on effect sizes reported by Reissing et al (2003),[3] assuming an effect size of 0.15 for sexual schema score, a 5% significance level, and 80% power. This calculation indicated a need for 76 participants in total, divided equally between cases (n=38) and controls (n=38). The final analyzed sample included 75 participants, comprising 38 cases and 37 controls, which was considered to satisfy the calculated sample size requirement with only a minimal deviation from the target number.

Sampling Method

All eligible consented participants in the GPPPD group were included in the study while controls were selected through simple random sampling (using random draw among eligible controls) from eligible patients at the pre-pregnancy and pregnancy clinics.

Data Collection and Instruments

Participants completed two validated Persian-language instruments under the supervision of trained clinical psychologists. Sexual self-schema was assessed using the Persian-language version of the Women's Sexual Self-Schema Questionnaire, originally developed by Andersen and Cyranowski. This 26-item self-report instrument assesses women's cognitive representations of themselves as sexual persons.[8] In the present study, three domains were analysed: romantic–passionate, open–direct, and shy–cautious. The romantic–passionate domain reflects affectionate, emotional, and

passionate engagement in intimate relationships; the open–direct domain reflects comfort with sexual communication, openness, and direct expression of sexual needs or preferences; and the shy–cautious domain reflects embarrassment, caution, self-consciousness, and inhibition in sexual expression. Higher scores indicate stronger endorsement of the corresponding sexual self-schema. The Persian version has previously demonstrated acceptable psychometric adequacy among Iranian married women.[15]

Affective and Emotional Composite Temperament Scale: A tool evaluating six emotional temperament dimensions (volition, anger, inhibition, sensitivity, coping, and control) and twelve affective temperament dimensions (eg, depressive, anxious, cyclothymic, euphoric).[16] Demographic and background information, including age, marriage duration, educational level, employment status, socioeconomic status (SES), and religiosity, was also collected in parallel. Religiosity and SES was assessed using a self-reported item in the demographic and psychosocial questionnaire. Participants were asked to describe their own level of religiosity and SES in a 5 level Likert scoring. Recent stressful life events were recorded using predefined categories, including first-degree family death, divorce, parental divorce, and job loss.

Variables

We assessed the Presence of GPPPD (case) versus absence (control) as outcome variable whereas sexual self-schema and affective-emotional temperament scores considered as exposure. Background and potential confounding variables, eg: age, marriage duration, socioeconomic status, and religiosity were assessed for further adjustment.

Statistical Analysis

Data were analyzed using Stata version 17 (StataCorp LLC, College Station, TX, USA). Normality of continuous variables was assessed with the Kolmogorov–Smirnov test. Independent samples *t*-tests or Mann–Whitney *U*-tests were used for continuous variables, and chi-square or Fisher's exact tests for categorical variables. Variables with p-values < 0.1 in univariate analyses beside theoretically related variables were entered into a multivariable logistic regression model to adjust for potential confounding effect.[3,4,17] Separate multivariate logistic regression models were run for sexual self-schema domains, emotional temperaments, and affective temperaments. Sociodemographic variables such as education, religiosity (dichotomized), and spouse's employment category were included as covariates. Statistical significance was set at $p < 0.05$.

Results

A total of 75 participants were categorized into two groups: women diagnosed with Genitopelvic Pain/Penetration Disorder (GPPPD) and a healthy control group. The groups were compared across demographic, sexual schema, emotional and affective temperament, and psychosocial characteristics.

Demographic and Psychosocial Characteristics

The two groups were generally comparable in terms of basic demographics. The mean age of participants was 33.7 years (SD = 6.3) in the control group and 32.6 years (SD = 7.6) in the GPPPD group ($p = 0.518$). No significant differences were observed in spouse's age, age gap between partners, or duration of marriage (Table 1).

Education levels varied slightly, with a higher proportion of Master's degrees in the GPPPD group and more Bachelor's degrees among controls, although this difference was not statistically significant ($p = 0.162$). Employment status did not differ substantially; however, unemployment was reported only in the GPPPD group (10.5%). A significant difference was observed in spouses' employment status: a smaller proportion of spouses in the GPPPD group were freelancer (22.0% vs 48.6%; $p = 0.046$).

Religiosity differed significantly between the groups. Women in the GPPPD group reported higher levels of religiosity overall, with a greater proportion describing themselves as moderately to highly religious (70.3% vs 37.8%; $p = 0.022$). Family religiosity did not significantly differ between groups. No significant differences were observed in smoking, alcohol use, history of falls or accidents, or exposure to recent stressful life events.

Table 1 Demographic and Medical Characteristics of Participants

Group		Control (n=37)	GPPPD (n=38)	P-value
Age		33.68(6.25)23–47	32.63(7.60)18–46	0.518
Age of Spouse		37.65(7.11)25–50	35.44(7.32)21–51	0.196
Age difference		3.97 (3.49)	2.64 (5.1)	0.21
Length of Marriage		7.42(6.32)1–28	6.32(4.53)0–20	0.77
Education	**1st cycle**	0(0)	1(2.6)	0.162
	High school	1(2.7)	5(13.2)	
	Associate of Science	5(13.5)	4(10.5)	
	Bachelor of Science	23(62.2)	15(39.5)	
	Master	5(13.5)	11(28.9)	
	Doctorate	3(8.1)	2(5.30)	
Spouse Education	**1st cycle**	1(2.70)	3(8.3)	0.562
	High school	3(8.1)	5(13.9)	
	Associate of Science	6(16.2)	3(8.3)	
	Bachelor of Science	15(40.5)	10(27.8)	
	Master	9(24.3)	12(33.3)	
	Doctorate	3(8.1)	3(8.3)	
Job	**Housewife**	17(45.9)	16(42.1)	0.14
	Clerk	15(40.5)	9(23.7)	
	Manager	1(2.7)	3(7.9)	
	Freelancer	4(10.8)	6(15.8)	
	Unemployed	0(0)	4(10.5)	
Spouse Job	**Unemployed**	0(0)	3(8.3)	0.046
	Worker	10(27)	12(33.3)	
	Clerk	8(21.6)	11(30.6)	
	Manager	1(2.7)	5(13.9)	
	Freelancer	18(48.6)	8(22)	
Economic level	**Low**	0(0)	1(2.6)	0.77
	Middle low	2(5.4)	3(7.9)	
	Middle	26(70.3)	23(60.5)	
	Middle High	8(21.6)	9(23.7)	
	High	1(2.7)	2(5.3)	

(*Continued*)

Table 1 (Continued).

Group		Control (n=37)	GPPPD (n=38)	P-value
Religiosity	**Not religious**	9(24.3)	8(21.6)	0.022
	Few	14(37.8)	3(8.1)	
	Moderate	12(32.4)	20(54.1)	
	High	2(5.4)	5(13.5)	
	Very High	0(0)	1(2.7)	
Family Religiosity	**Not religious**	4(10.8)	4(10.5)	0.25
	Few	8(21.6)	5(13.2)	
	Moderate	21(56.8)	18(47.4)	
	High	4(10.8)	8(21.1)	
	Very High	0(0)	3(7.9)	
Smoke		6(16.7)	3(7.9)	0.26
Alcohol		8(21.6)	5(13.2)	0.33
Hx of fall or accident		2(5.4)	5(13.2)	0.25
Stressful Events	**No**	16(43.2)	14(36.8)	0.61
	1st degree death	10(27)	13(34.2)	
	Divorce	2(5.4)	0(0)	
	Parents' Divorce	2(5.4)	2(5.3)	
	Job loss	2(5.4)	1(2.6)	

Notes: Continuous data are presented as mean (SD) range and compared using independent sample *t*-test. Categorical Data are presented as frequency (number) and analyzed using chi-square/Fisher exact test.

Sexual Schema Components

Analysis of sexual schema dimensions showed a significantly higher shy-cautious schema score among GPPPD participants (mean = 19.5, SD = 4.2) compared to controls (mean = 17.3, SD = 4.2; p = 0.035). No significant differences were found for passionate-romantic (p = 0.662) or open–direct schemas (p = 0.713) (Table 2).

In multivariate logistic regression, the shy-cautious schema remained independently associated with GPPPD status (OR = 1.19, 95% CI: 1.04–1.37; p = 0.013). Passion (p = 0.143) and open–direct (p = 0.745) were not significantly associated with GPPPD after adjustment (Table 3).

Emotional and Affective Temperaments

No group differences were found in any of the emotional temperament subdomains—including volition, anger, inhibition, coping, sensitivity, and control. In multivariate analysis, however, sensitivity was positively associated with GPPPD (OR = 1.14, 95% CI: 1.02–1.27; p = 0.019) (Table 4).

Although median affective temperament scores were largely similar between groups, multivariate models identified two temperament traits associated with GPPPD. Obsessive temperament was positively associated with GPPPD status (OR = 2.54, 95% CI: 1.09–5.89; p = 0.03), while euthymic temperament showed a negative association (OR = 0.47, 95% CI: 0.25–0.90; p = 0.024). Other temperament traits—including depressive, anxious, and disinhibited—did not show statistically significant associations (Table 5).

Table 2 Comparison of the Sexual Schema Components Between Two Study Groups

Group	Control (n=37)	GPPPD (n=38)	P-value
Romantic–passionate	30.22(7.74)10-42	31.00(7.39)11-43	0.662
Open–direct	30.38(7.07)11-47	30.97(6.51)19-43	0.713
Shy-cautious	17.32(4.19)8-24	19.46(4.23)11-30	0.035

Note: Data are presented as mean (SD) range and compared using independent sample *t*-test.

Table 3 Multivariate Analysis of the Sexual Schema Domains Adjusted for Other Correlated Variables

	Odds Ratio	Pvalue	95% Confidence Interval	
Shy-Cautious domain Score	1.19	0.013	1.04	1.37
Romantic–passionate domain Score	1.07	0.143	0.98	1.17
Open–direct domain Score	0.98	0.745	0.90	1.08
Religious (0= Not religious, 1 religious)	4.57	0.019	1.29	16.20
Job: (Housewife=0, Employed=1)	1.76	0.356	0.53	5.89
Spouse job: Ref: Official Works				
Freelance	0.11	0.004	0.02	0.50
Salaried Employee	0.32	0.128	0.07	1.39
Education (High school and lower=0 University Educated=1)	0.11	0.085	0.01	1.36

Table 4 Comparison of the Emotional and Affective Temperaments Components Between Two Study Groups

	Group	Control (n=37)	GPPPD (n=38)	P-value
Emotional Temperament *	**Volition**	37.65 (8.16)17-56	37.58(10.57)10-55	0.975
	Anger	31.19(8.73)11-47	31.40 (8.47)15-48	0.918
	Inhibition	34.16 (5.53)20-43	34.10 (5.94)19-47	0.966
	Sensitivity	33.65(7.89)11-50	35.71 (5.94)23-50	0.204
	Coping	39.65 (8.38)20-56	38.08 (9.84)17-53	0.460
	Control	40.05(9.34)22-56	39.42 (9.72)16-53	0.775
Affective Temperament **	**Depressive**	3(1–5)	3(1–5)	0.291
	Anxious	3(1–5)	3(1–5)	0.119
	Apathetic	3(2–5)	4(2–5)	0.072
	Cyclothymic	3(1–5)	3(1–5)	0.496
	Dysphoric	3(1–5)	3(1–4)	0.977
	Volatile	4(1–5)	4(2–5)	0.158
	Obsessive	2(1–5)	2(1–5)	0.438
	Euthymic	3(1–5)	3(1–5)	0.138

(*Continued*)

Table 4 (Continued).

	Group	Control (n=37)	GPPPD (n=38)	P-value
	Hyperthymic	3(2–4)	3(2–4)	0.788
	Irritable	3(1–5)	3(1–5)	0.529
	Disinhibited	4(1–5)	3(2–5)	0.314
	Euphoric	3(1–4)	3(1–5)	0.738

Notes: *Data are presented as mean (SD) range and compared using independent sample *t*-test. ** Data are presented as Median (range) and compared using Mann Whitney test.

Table 5 Multivariate Analysis of the Emotional and Affective Temperaments Components Adjusted for Other Correlated Variables

		Odds Ratio	P value	95% Confidence Interval	
Emotional Temperament	**Volition**	1.06	0.228	0.96	1.17
	Anger	0.98	0.553	0.91	1.05
	Inhibition	0.96	0.533	0.86	1.08
	Sensitivity	1.14	0.019	1.02	1.27
	Coping	0.97	0.492	0.89	1.06
	Control	0.94	0.21	0.86	1.03
	Religious (0= Not religious, 1 religious)	6.97	0.007	1.72	28.27
	Job: (Housewife=0, Employed=1)	1.34	0.64	0.39	4.59
	Spouse job= Ref: Official Works				
	Freelancers	0.13	0.007	0.03	0.57
	Salaried Employee	0.25	0.086	0.05	1.22
	Education (High school and lower=0 University Educated=1)	0.13	0.162	0.01	2.25
Temperament	**Apathetic**	0.92	0.083	0.84	1.01
	Depressive	1.92	0.389	0.44	8.42
	Anxious	3.43	0.084	0.85	13.83
	Cyclothymic	0.81	0.544	0.40	1.62
	Dysphoric	0.63	0.316	0.25	1.56
	Volatile	1.48	0.401	0.59	3.72
	Obsessive	2.54	0.03	1.09	5.89
	Euthymic	0.47	0.024	0.25	0.90
	Hyperthymic	0.61	0.518	0.13	2.75
	Irritable	0.69	0.514	0.23	2.11
	Disinhibited	1.96	0.157	0.77	5.00
	Euphoric	1.88	0.387	0.45	7.82

(*Continued*)

Table 5 (Continued).

		Odds Ratio	P value	95% Confidence Interval	
	Religious (0= Not religious, 1 religious)	5.89	0.012	1.47	23.69
	Job: (Housewife=0, Employed=1)	2.36	0.246	0.55	10.03
	Spouse job= Ref: Official Works				
	Freelancers	0.20	0.047	0.04	0.98
	Salaried Employee	0.26	0.099	0.05	1.30
	Education (High school and lower=0 University Educated=1)	0.05	0.063	0.00	1.17

Other Predictors

Religiosity emerged as a consistent predictor across models. Participants who identified as religious had higher odds of GPPPD (OR = 5.89, 95% CI: 1.47–23.69; p = 0.012). Additionally, having a spouse employed in freelance work was associated with lower odds of GPPPD compared to those with spouses in official jobs (OR = 0.20, 95% CI: 0.04–0.98; p = 0.047). A slight variation in ORs were observed due to model specification. Other factors, such as participant education and employment status, were not significantly associated with GPPPD in adjusted analyses (Table 3 and Table 5).

Discussion

This study explored the psychological predisposing factors of Genito-Pelvic Pain/Penetration Disorder (GPPPD) among Iranian women by examining the role of sexual self-schema, emotional and affective temperament, and sociocultural variables. Our findings underscore a distinct psychological profile among women with GPPPD, characterized by higher scores in the shy-cautious dimension of sexual schema and specific temperamental traits such as increased sensitivity and obsessive tendencies, alongside lower euthymic temperament. Additionally, religiosity emerged as a significant sociocultural predictor, further highlighting the complex interplay between individual psychology and cultural context.

The shy sexual schema being significantly associated with GPPPD aligns with prior literature suggesting that avoidant and inhibited sexual beliefs contribute to sexual dysfunctions, particularly those involving fear and pain during intercourse.[18,19] Previous studies in Western populations have similarly noted heightened sexual conservatism and anxiety in women with vaginismus and dyspareunia.[20,21] However, our study adds a culturally contextualized layer by identifying religiosity as a consistent predictor, suggesting that sociocultural norms surrounding modesty, shame, and sexual expectations may reinforce maladaptive sexual cognitions in conservative societies such as Iran, in line with other studies.[22,23]

Furthermore, temperament dimensions—particularly obsessive and sensitive traits—emerged as significant predictors. This is consistent with earlier findings where perfectionism, cognitive rigidity, and emotional hypersensitivity were associated with sexual pain disorders.[24] The protective role of euthymic temperament (characterized by positive mood and stable emotionality) in our study also reflects broader mental health literature linking affective stability with improved sexual functioning.[25,26]

These results support and extend cognitive-behavioral models of sexual dysfunction, which emphasize the role of maladaptive cognitive schemas—particularly avoidance, fear, and shame-based beliefs about sexuality—in the development and maintenance of pain-related sexual disorders.[26,27] The significantly elevated "shy-cautious" domain in the sexual self-schema among GPPPD participants reinforces the notion that negative or inhibited beliefs about sexual self-concept contribute to genital pain disorders. This aligns with Barlow's theory of sexual dysfunction, which posits that anxiety and negative expectancy about sexual situations contribute to autonomic arousal and muscle tension, exacerbating pain and avoidance.[26]

Our findings also intersect with temperament theory, particularly Cloninger's biopsychosocial model of personality, which links affective temperaments to vulnerability for psychiatric and psychosomatic conditions.[28] The observed

association between obsessive temperament and GPPPD status supports the idea that heightened control, perfectionism, and hypervigilance can fuel psychophysiological responses that sustain sexual pain syndromes. Similarly, increased sensitivity and reduced euthymia align with emotional regulation models suggesting that lower positive affect and heightened reactivity predispose individuals to sexual dysfunction through diminished resilience and heightened avoidance behavior.[17]

Notably, the prominent role of religiosity—both self-reported and contextual—adds a sociocultural dimension that challenges Western-centric models of sexual dysfunction. In the Iranian context, where conservative gender norms and sexual modesty are often emphasized, religiosity may indirectly reinforce negative sexual schemas, heighten sexual guilt, and discourage open sexual communication, thus perpetuating dysfunction (4). This finding is congruent with the sociocognitive model of sexual response, which posits that cultural and interpersonal beliefs shape sexual attitudes and behaviors, often in ways that may inhibit healthy sexual expression.[4] The association between spousal freelance employment and lower odds of GPPPD should be interpreted cautiously. It may reflect greater flexibility in partner availability, socioeconomic differences, or relational dynamics that could influence intimacy and sexual self-schema, as relational and partner-related factors have been implicated in female sexual pain conditions.[17,29] However, as spouse employment was not the primary exposure and the sample size was small, this finding requires confirmation in future studies.

Interestingly, unlike previous research that has consistently reported a significant association between a history of sexual violence and genito-pelvic pain disorders,[3,30] our study did not find such a correlation. As shown in Table 1, no significant differences emerged between the GPPPD and control groups regarding exposure to stressful life events, including loss, divorce, or reported trauma ($p > 0.05$). Previous studies have reported associations between sexual abuse, traumatic experiences, and genito-pelvic pain disorders. However, lifetime sexual abuse or sexual violence was not directly assessed in the present study using a dedicated trauma inventory. Therefore, no conclusion can be drawn regarding the association between sexual abuse and GPPPD in our sample. In the Iranian context, discussions of sexual abuse and trauma may be highly stigmatized and associated with shame, honour concerns, and familial consequences, which can contribute to underreporting, particularly in clinical settings. Our study collected only general self-reported indicators of stressful life events and physical trauma-related history, which may not capture the severity, timing, nature, or interpersonal context of past abuse. Future studies should therefore use culturally adapted and trauma-informed assessment tools to examine these dimensions more accurately. Moreover, some women with GPPPD may have developed symptoms through non-trauma-related mechanisms, such as learned avoidance behaviors, anxiety sensitivity, or culturally internalized beliefs about sexuality. It is also possible that trauma-related factors were present but expressed indirectly through other variables—such as increased sensitivity or obsessive traits—which were indeed significantly associated with GPPPD in our findings. These nuances underscore the complexity of pathways leading to GPPPD and the importance of using nuanced, multidimensional assessments in future research to better capture trauma histories and their psychological correlates.

While our results corroborate elements of existing models, they also suggest the need for more integrative frameworks that combine cognitive, affective, temperamental, and cultural components. Current diagnostic models (eg, DSM-5) do not explicitly account for temperament or religiosity, yet our findings indicate these variables may have critical roles in shaping both vulnerability and resistance to treatment in sexual dysfunction.

From a clinical perspective, these findings have important implications for diagnosis and intervention. Treatment approaches for GPPPD in culturally conservative settings may benefit from integrating cognitive-affective strategies that target maladaptive sexual schemas and temperamental vulnerabilities, while also considering the influence of religiosity and sociocultural norms. Psychological interventions such as schema therapy and temperament-focused cognitive behavioral therapy (CBT) may offer promising directions.

Despite the strengths, including the use of validated instruments and a well-defined case-control design, the study has limitations. The design restricts causal inference, and the Tehran-based sample may not reflect regional or rural populations. Self-report measures, while practical, are subject to bias, especially in cultures where discussing sexual issues is stigmatized. Furthermore, potential interactions between psychological variables (eg, temperament and religiosity) were not deeply explored and warrant further longitudinal research.

Conclusion

This study suggests that GPPPD in Iranian women should be understood within a broader cognitive, emotional, temperamental, and sociocultural framework. Rather than reflecting only pain or penetration difficulties, the condition appears to be linked to women's sexual self-concept, emotional sensitivity, personality-related vulnerabilities, and culturally shaped beliefs about sexuality. These findings support the need for culturally sensitive psychological assessment and more integrative clinical approaches for women with GPPPD.

These findings align with and expand upon cognitive-behavioral and biopsychosocial theories of sexual dysfunction, which highlight the roles of maladaptive sexual cognitions, emotional reactivity, and personality structure. Moreover, our results emphasize the cultural specificity of such factors—particularly the impact of religiosity—which is often underrepresented in mainstream psychological models. This underscores the need for culturally sensitive approaches to understanding and treating sexual dysfunction, particularly in non-Western settings.

These findings contribute to a growing body of evidence supporting more holistic, integrative models that incorporate psychological, temperamental, and sociocultural dimensions. Clinically, they suggest that treatment strategies should be tailored to address both internal psychological patterns and external cultural influences. Future research should continue exploring these variables in broader and more diverse sociocultural contexts, as well as assess their influence on treatment response and long-term outcomes.

Patient and Public Involvement

Patients were involved in the pilot phase of this study to assess the clarity and appropriateness of the questionnaires. Their feedback helped inform the final selection and refinement of the study instruments. However, patients were not involved in the broader design, analysis, or dissemination of the research.

Artificial Intelligence Use

The authors used AI-based language tools (e.g, ChatGPT) solely to assist with paraphrasing and improving the clarity of the text. All content was reviewed and edited by the authors, who take full responsibility for the integrity and accuracy of the manuscript.

Data Sharing Statement

All data generated or analyzed during this study are included in this article. Further enquiries can be directed to the corresponding author.

Ethics Approval

The study protocol was approved by the Ethics Committee of Avicenna Research Institute (IR.ACECR.AVICENNA.REC.1399.019), and the study was conducted in accordance with the Declaration of Helsinki.

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Author Contributions

All authors made a significant contribution to the work reported, whether that is in the conception, study design, execution, acquisition of data, analysis and interpretation, or in all these areas; took part in drafting, revising or critically reviewing the article; gave final approval of the version to be published; have agreed on the journal to which the article has been submitted; and agree to be accountable for all aspects of the work.

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Disclosure

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