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Evaluation of Anxiety and Personality Dimensions in A Group of Patients with Genito-Pelvic Pain/Penetration Disorder Referred to Psychiatric and Obstetrics and Gynecology Centers

Firoozeh Raisi[1], Reihaneh Firoozi Khojastefar[1,*], Mojgan Karbakhsh[2], Fatemeh Mafi[3], Azin Ahmadzadeh[1], Elham Abniki[1]

[1]*Department of Psychiatry, Roozbeh Hospital, School of Medicine, Tehran University of Medical Sciences, Tehran, Iran*

[2]*Department of Community Medicine, School of Medicine, Tums, Tehran, Iran*

[3]*Department of Curriculum, Pedagogy and Assessment, University College London (UCL) Institute of Education, London, United Kingdom*

ABSTRACT

Background: Genito-pelvic Pain/Penetration Disorder (GPPPD) can be a tremendously annoying condition for women and their partners. This study aimed to evaluate the anxiety levels and personality dimensions in a group of women with GPPPD. **Methods:** 65 patients with GPPPD participated in this study. To collect data, patients filled demographic questionnaire. Beck Anxiety Inventory (BAI) was used to define the anxiety level. The Cloninger's Temperament and Character Inventory (TCI) was used to evaluate the personality dimensions. SPSS software version 20 was used to analyze the data. $P < 0.05$ was considered statistically significant. **Results:** The levels of anxiety in two groups of vaginismus and dyspareunia were 18.76 ± 11.88 and 13.92 ± 11.20, respectively. Although the anxiety score in vaginismus group was higher, there was no significant difference between two groups in terms of anxiety ($P = 0.011$). Comparison of personality dimensions showed no significant difference in any dimensions in vaginismus and dyspareunia groups. **Conclusions:** The study findings indicate that anxiety may play a significant role in both vaginismus and dyspareunia, suggesting it as a common factor in GPPPD. Moreover, they suggest there may not be substantial differences in personality dimensions between the two groups. However, further research is necessary to delve deeper into the relationship between anxiety, personality dimensions, and GPPPD, not only within this specific cultural context but also across diverse populations to ensure the generalizability of the findings. These findings emphasize the importance of adopting holistic approaches to GPPPD to enhance well-being and sexual satisfaction of affected individuals.

Keywords: Genito-Pelvic Pain/Penetration Disorder (GPPPD), Vaginismus, Dyspareunia, Anxiety, Personality Dimensions.

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***Corresponding Author**

Reihaneh Firoozi Khojastefar

Department of Psychiatry, Roozbeh Hospital, School of Medicine, Tehran University of Medical Sciences, Tehran, Iran, 1333715914; Telephone: (+9821) 55412222; Fax: (+9821) 55419113; Email: reihanehfiroozi@yahoo.com

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INTRODUCTION

Genito-pelvic pain/penetration disorder (GPPPD) is a new diagnostic category which is considered in DSM-5 and DSM-5-TR. This new category is, in fact, a combination of vaginismus and dyspareunia, along with some other diagnoses (such as vulvodynia and vestibulodynia), which were mentioned in previous versions of the DSM. This combination has been considered because of difficulty in making differentiation and of course because of high comorbidity and overlap between them [1,2]. According to DSM-IV-TR criteria, Dyspareunia is characterized by "recurring or persistent genital pain associated with sexual intercourse; this pain can occur before, during, or after intercourse, and it leads to distress for the affected person or causes relationship difficulties" [3]; and Vaginismus is characterized by "involuntary spasms of the pelvic floor muscles, resulting in painful intercourse and/or an aversion to sexual activity" [4,5].

GPPPD is a sexual pain disorder that involves four symptom categories: challenges with sexual intercourse, discomfort in the genitopelvic area, apprehension of experiencing pain or undergoing vaginal penetration, and constriction of the muscles in the pelvic floor. Having major difficulty in any one of symptom dimensions is often enough to cause clinically significant distress and if it lasts for at least 6 months, the diagnosis can be made [6].

The rate of GPPPD is from 11% to 19% of pre-menopausal women [7,8]. In two studies in Iran, the prevalence of the disorder has reported as 16% and 9-95.9%, respectively [9,10]. The prevalence of dyspareunia and vaginismus in the general population varies between 3-25% and 0.4-6.6%, respectively [11,12].

GPPPD is a multifactorial disorder and it is related to different risk factors such as physiological, genetics, relational, temperamental or environmental factors [1]. It is associated with greater levels of negative cognition about pain, self-image, genital incompatibility, as well as perceived control during the penetration [13]; GPPPD is also related to anxiety and depression [14]. So, these women may experience various psychological, relational and sexual complications [15].

Research findings indicate that women experiencing vulvovaginal pain exhibit higher levels of anxiety, depression [16,17], and pain catastrophizing compared to asymptomatic individuals [14]. These hypervigilance, fear, and pain catastrophizing reactions predict heightened pain in this population. Additionally, lower pain self-efficacy, or the belief in one's ability to manage pain, is associated with both worse pain and sexual function [14]. A community-based study even revealed that women with antecedent depression or anxiety are four times more likely to develop vulvodynia than those without such conditions [18].

In a study involving 78 married women and 23 married men diagnosed with SD (sexual dysfunction) according to DSM-IV-TR criteria, researchers assessed their personality traits using the Temperament and Character Inventory (TCI). The findings revealed that couples with SD exhibited higher levels of cooperativeness and self-transcendence, but lower self-directedness scores compared to a comparison group. Specifically, women partners in the SD couples had greater harm avoidance and lower self-directedness scores than women in the comparison group [19]. In a 1998 case-control study, the researchers evaluated 38 women aged 18-25 suffering from vulvar vestibulitis and 70 healthy controls. The women completed a questionnaire on temperament and character traits. Notably, women with vulvar vestibulitis scored significantly higher than the control group on one specific subscale of the temperament and character inventory: harm avoidance [20].

Despite the various abovementioned consequences of the disease, these women often do not receive proper treatment because due to factors such as misdiagnosis, shame, or limitation of specialized treatment. This burden may affect the women, their partner and even their relationships [21-23].

While we possess extensive knowledge about vaginismus and its associated factors in developed countries, it is crucial to acknowledge that aspects related to vaginismus in low and middle-income countries have not been thoroughly surveyed yet, despite the higher prevalence observed in these regions [9,10,15]. Therefore, it becomes essential to analyze these psychosocial factors within the context of such countries, especially in Iran. So, in this study, we decided to evaluate and compare the anxiety and personality dimensions between these two groups (vaginismus and dyspareunia) in addition to GPPPD as a whole.

MATERIALS AND METHODS

Participants in this study were 65 patients with GPPPD. Sampling was done by available method from patients referred to psychiatric centers including Roozbeh Hospital, Imam Khomeini Hospital, and psychiatrists' offices as well as gynecologists' offices.

Individuals with these disorders were selected after an interview with a psychiatrist or gynecologist and a final diagnosis of GPPPD based on the DSM-5 criteria. For determining the diagnosis of vaginismus and dyspareunia, a complementary interview was conducted according to European Society of Sexual Medicine (ESSM)'s definition for these diagnoses. (The ESSM definition is mostly similar to DSM-IV-TR criteria) [5].

Then Candidates completed the demographic, Beck Anxiety Inventory (BAI), and the Cloninger's Temperament and Character Inventory (TCI) questionnaires. The inclusion criteria were considered as being married women, suffering from GPPPD according to the interview by a psychiatrist, having consent to cooperate in the research process, and being able to complete the questionnaire. Having psychosis and being pregnant was considered as an exclusion criterion according to the interview.

Demographic information Questionnaire

This questionnaire collects information about age, education, duration of the marriage, and socioeconomic status of individuals.

Beck Anxiety Inventory (BAI)

Beck Anxiety Inventory (BAI) is a 21-item questionnaire based on 21 anxiety symptoms, and the higher the score on the Likert scale (scores 0, 1, 2, 3 for each question), the greater the anxiety level [24,25]. In 2008, Kaviani and Mousavi evaluated the Persian version of the Beck Anxiety Inventory (BAI) in Iran. They showed that this version is suitable for clinical and research evaluations in the Iranian population in terms of validity ($r = 0.83$, $P < 0.001$), reliability ($r = 0.72$, $P < 0.001$) and internal stability ($\alpha=0.92$) [25].

Cloninger's Temperament and Character Inventory (TCI)

Cloninger's Temperament and Character Inventory (TCI) is a 226-question questionnaire that Kaviani translated and validated in the Iranian population in 2005 and showed strong reliability, internal stability, and good validity for this population [26]. The revised form of this questionnaire was used by researchers in this study. This questionnaire has 125 questions and the individual chooses one of the right and wrong options for the questions. This revised questionnaire has seven different scales: four dimensions of temperament including novelty seeking (NS), harm avoidance (HA), reward dependency (RD), perseverance (P) and three dimensions of character including self-direction (SD), cooperativeness (C), and self-transcendence (ST) [27,28].

Ethical consideration

The study is approved by the ethics committee of Tehran University of Medical Sciences (TUMS) (Ethical code: IR.TUMS.REC.1394.1093). The study is performed according to Helsinki's principles of ethics. Written informed consent was obtained from patients.

Statistical analysis

SPSS software version 20 was used to analyze the data. Mean and standard deviation was used to describe quantitative variables. Kolmogorov-Smirnov test was used to check the normality distribution of the data. If even in one of the subgroups, the distribution of the quantitative variable was abnormal, Mann-Whitney U test was used and if the quantitative variable has a normal distribution in both subgroups, the independent sample T-test was used. The Chi-square test was used to determine the relationship between the two quantitative variables. $P < 0.05$ was considered statistically significant.

RESULTS

The mean age of the participants was 32.36 ± 7.27 years. The median duration of marriage was 3 years (4.95 ± 6.14 years). The minimum period of marriage was 3 months and the maximum was 29 years. For the item of period of marriage, the reason for reporting the median was that the standard deviation was greater than the mean indicates the high dispersion of this variable.

Other demographic information of the participants is mentioned in Table 1.

Table 1. The demographic information of the participants

Variable	No.	%
Education		
Under diploma	8	12.3
Diploma	18	27.7
Bachelor degree	23	35.4
Master degree	12	18.5
PhD and upper	4	6.2
Employment		
Housewife	38	58.5
Employee	17	26.2
Self-employed	9	13.8
Not answered	1	1.5
The economic situation		
Low level	8	12.3
Moderate level	47	72.3
High level	10	15.4
Source of income		
Husband	47	72.3
Wife	1	1.5
Husband and wife	14	21.5
Others	2	3.1
Not answered	1	1.5
History of underlying disease		
Yes	24	36.9
No	39	60
Missing	2	3.1
History of psychiatric disorder		
Yes	23	35.4
No	42	64.6

The level of anxiety in two groups of vaginismus and dyspareunia is shown in Table 2.

Table 2. The level of anxiety in two groups of vaginismus and dyspareunia

Groups	Anxiety Level
Vaginismus (n = 51)	18.76 ± 11.88
Dyspareunia (n = 13)	13.92 ± 11.20

Personality dimensions in two groups of vaginismus and dyspareunia are shown in Table 3.

Table 3. Personality Dimensions in Two Groups of Vaginismus and Dyspareunia

	NS	HA	RD	P	CO	SD	ST
Vaginismus							
Mean ± SD	8.26±2.74	12.42±4.18	9.87± 2.6	2.92±1.43	19.57±4.66	11.98±5.11	8.53±3.62
N	43	45	47	50	42	45	45
Dyspareunia							
Mean ± SD	8.78±2.73	10.11±3.85	8.9±2.8	2.66±1.3	19±4.74	14.5±4.11	9.1±4.83
N	9	9	11	12	9	10	11
Total							
Mean ± SD	8.35±2.72	12.04±4.18	9.69±2.64	2.87±1.39	19.47±4.63	12.43±5	8.64±3.84
N	52	54	58	62	51	55	56

NS: novelty seeking; HA: harm avoidance, RD: reward dependency; P: perseverance; SD: self-direction; C: cooperation; ST: self-transcendence

Comparison of anxiety in women with diagnosis of dyspareunia and vaginismus is shown in Table 4. Due to the fact that the distribution in one of the groups was not normal and the sample size was limited, the Mann-Whitney U non-parametric test was used for comparison. Although the anxiety score in the vaginismus group was higher, the Mann-Whitney U test could not show a significant difference (P = 0.126). There was no significant difference between the abovementioned two groups of women in terms of anxiety.

Table 4. Comparison of Anxiety in Vaginismus and Dyspareunia Groups

	BAI Score
Mann-Whitney U	240.000
Wilcoxon W	331.000
Z	-1.530
Asymp. Sig. (2-tailed)	0.126

Comparison of personality dimensions in the two groups of women with GPPPD is shown in Table 5. Due to the abnormal distribution in some dimensions of personality in the two groups of women with vaginismus and women with dyspareunia, a non-parametric test was used for comparison.

Table 5. Comparison of personality dimensions in Vaginismus and Dyspareunia Groups

	NS	HA	RD	P	CO	SD	ST
Mann-Whitney U	165	132.5	204	270	177	153	229
Wilcoxon W	1111	177.5	270	348	222	1188	1264
Z	-0.695	-1.632	-1.091	-0.547	-0.298	-1.575	-0.383
Asymp.Sig. (2-tailed)	0.487	0.103	0.275	0.584	0.766	0.115	0.702

NS: novelty seeking; HA: harm avoidance, RD: reward dependency; P: perseverance; SD: self-direction; C: cooperation; ST: self-transcendence

The Chi-square test did not show a significant difference between the two groups of vaginismus and dyspareunia in terms of education levels (P = 0.979) (Table 6).

Table 6. The Level of Education in two Groups of Vaginismus and Dyspareunia

	Under Diploma	Diploma	Bachelor	Master	PhD and Upper
Vaginismus	6 (11.5)	15 (28.8)	18 (34.6)	10 (19.2)	3 (5.8)
Dyspareunia	2 (15.4)	3 (23.1)	5 (38.5)	2 (15.4)	1 (7.7)
Total	8 (12.3)	18 (27.7)	23 (35.4)	12 (18.5)	4 (6.2)

Values are presented as No. (%).

DISCUSSION

GPPPD puts significant pressure on affected females and their husbands and negatively affects sexual satisfaction and function, as well as their psychological well-being [29]. GPPPD is an umbrella term which includes vaginismus and dyspareunia and other diagnoses (such as vulvodynia and vestibulodynia) which were classified in DSM-IV-TR separately.

The results of the present study showed that the average anxiety in the group of women with vaginismus is higher than women with dyspareunia, but this difference was not significant (P=0.011). The first part of this finding, the higher mean anxiety in the group of women with vaginismus, is consistent with other studies [16,17].

Research by multiple authors has highlighted the role of anxiety in vaginismus. In a case-control study, Watts and Nettle (2010) found that women with vaginismus exhibited higher anxiety and neuroticism, suggesting that anxiety proneness might be a predisposing factor for the condition. Thomtén & Karlsson (2014) also discovered that a significant proportion of respondents (16.1%) experiencing genital pain reported anxiety-related symptoms [15]. In a study by Turan et al. women with lifelong vaginismus had higher levels of anxiety as well as depression and sexual dysfunctions in comparison to control group [18]. Watts et al. revealed that the anxiety levels are higher among women with vaginismus and that anxiety can be a predisposing factor for vaginismus [17]. It has reported that women with vaginismus had more anxiety during intercourse and more fear when thinking about intercourse or non-penetrative sexual activity [18]. In addition to fear, the women with vaginismus have negative cognitions and negative expectations about vaginal penetration. Recently, attempts have been made to integrate psychological factors to better understand factors causing and/or maintaining vaginismus

using the fear-avoidance model of vaginismus. This model assumes that catastrophic and ineffective thoughts about penetration lead to fear of penetration or touch, which all support self-perpetuation of these cognitions. These type of thoughts lead to hypervigilance and increased attention to physical and emotional sensations that facilitate or reinforce pain during intercourse. Fear, hypervigilance, and negative cognitions can also lead to defensive contraction of the pelvic muscle and therefore problems with vaginal penetration and pain; Therefore, the etiology of vaginismus may stem from fear and anxiety to avoid pain more than pain itself [30].

However, the present study showed that the anxiety levels was not significantly different between the women with vaginismus and women with dyspareunia.The nuance of this difference may be explained, to some extent, by the fact that we compared anxiety between women with vaginismus and women with dyspareunia, while other studies compared women with vaginismus with controls or other sexual dysfunction.

Our study has also addressed personality dimensions in patients with GPPPD and it has been shown that the two groups of women with vaginismus and women with dyspareunia did not have a significant difference in Cloninger's personality dimensions. In Borg et al. study, the control group had a higher level in dimension of harm avoidance(HA) and catastrophic pain cognitions [31]. In a study by Konkan et al. in Turkey, using Turkish version of Cloninger's personality dimensions (TCI), the vaginismus group showed a significantly greater score in comparison to the control group just at emotionality item scores of the reward dependence (RD) sub-scale [32]. In a study by Öztürk et al., couples with sexual dysfunction including vaginismus were found to have higher self-transcendence and cooperativeness as well as lower self-directedness scores compared to the control group. Moreover, the women in the sexual dysfunction group has shown higher scores of harm avoidance than the women in the control group [19]. A study in Sweden by Danielsson et al. on women with vulvar vestibulitis showed that out of seven subscales of TCI, only harm avoidance score was significantly higher than control group [20].

Some personality traits such as harm-avoidance(HA) in the Cloninger personality scale or neuroticism in the 5-factor personality scale can be associated with pain disorders. The personality trait of HA is usually accompanied by doubt, pessimism, fear, and indecisiveness, and logically supports pain avoidance behaviors, espesially if these patients have had traumatic sexual experiences. In addition, the avoidance trait may play a more direct role in the development and persistence of vaginismus. The increased tendency towards avoidance behaviors or stimuli identifies HA, which can show itself as relatively strong defensive responses like GPPPD [31]. Furthermore, among the 5-factor personality traits, neuroticism and extraversion appear to have the strongest association with vaginismus and anxiety. Neuroticism is a measure of vulnerability to negative emotions, and extraversion is a measure of the tendency towards positive emotions. A combination of high neuroticism and low extraversion can be a strong predictor of anxiety symptoms and several types of anxiety disorders [17].

However, the results of the present study are not consistent with the results of the Borg et al. study and other abovementioned studies considering personality dimensions. Perhaps one of the reasons for this is the large difference between the number of vaginismus and dyspareunia samples [33].

CONCLUSION

The study findings reveal intriguing insights into the complex interplay between psychological factors and Genito-pelvic Pain/Penetration Disorder (GPPPD). Specifically, anxiety emerges as a pivotal player, exerting its influence on both vaginismus and dyspareunia. This shared association underscores anxiety's significance as a common thread in the fabric of GPPPD.

Surprisingly, the results hint at a lack of substantial differences in personality dimensions between the two affected groups. Perhaps personality traits alone do not delineate the boundaries of GPPPD. Instead, anxiety seems to weave its intricate web, connecting these seemingly disparate conditions.

Further research beckons—an exploration that delves deeper into the intricate relationship between anxiety, personality dimensions, and GPPPD. Not confined by cultural boundaries, this investigation must span diverse populations to ensure the robustness and generalizability of its findings. These revelations underscore the need for holistic approaches. By weaving together both threads—mind and body—we can unravel the complexities and pave the way toward healing.

CONFLICTS OF INTEREST

There is no Conflicts of interest in this research.

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