ORIGINAL RESEARCH

Comparison of anxiety and pain overstating in healthy females to females with dyspareunia

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ABSTRACT

Background: The quality of life, mental health, and physical health are negatively affected in females with dyspareunia. Dyspareunia is related to various individual effects including depression, anger, anxiety, deprivation of sense, lack the self-esteem, guilt, shame, and embarrassment. With the large role of cognitive variables including anxiety and pain catastrophizing in chronic pain, literature data is scarce about their correlation with dyspareunia. **Aim:** The present study aimed to comparatively assess pain catastrophizing and anxiety in healthy females to females with dyspareunia in reproductive age. **Methods:** The present study assessed 188 married Indian females selected randomly for the study. In all included females, data were gathered using a proforma recording demographics, background, and self-reported dyspareunia. The questionnaires used in the study were STAI-6 (Spielberger State-Trait Anxiety) and PCS (pain catastrophizing scale) to assess study females. **Results:** It was seen that in 49.46% (n=93) females, dyspareunia was reported within the past six months which was decreased to 42.02% (n=79) and 30.85% (n=58) with the more specific dyspareunia criteria. Higher scores for anxiety and pain catastrophizing were seen in females having dyspareunia compared to the females comprising the control group with no dyspareunia. Correlation was seen in anxiety to sexual abuse, duration of marriage, and age, whereas, pain catastrophizing was correlated to body image dissatisfaction and aversion to genital contact. **Conclusion:** The present study concludes that a significant association exists between anxiety and pain catastrophizing to dyspareunia which depicts that dyspareunia is usually considered to be associated with physical cause, but psychological factors also play a vital role in dyspareunia and should be considered. Managing traumatic thoughts and anxiety can help subjects with dyspareunia cope with pain in a better way.

Keywords: Anxiety, pain catastrophizing, dyspareunia, Genito-pelvic pain, penetration disorder, sexual pain

INTRODUCTION

Dyspareunia is a common sexual disorder and dysfunction reported in females which are usually reported as persistent and recurrent genital pain seen after, during, or before vaginal intercourse. Dyspareunia is usually an undertreated and underdiagnosed disorder that negatively affects the quality of life in the affected females.[1] A WHO (World Health Organization) systematic review suggested that nearly 8% of 22% of the females globally are affected by dyspareunia and nearly 1/5th of all the females develop dyspareunia a one point or other in their lives. Another literature work reported that a higher prevalence of dyspareunia is seen in Asian females compared to females of other continents with a high prevalence of approximately 21% in the females of middle-east.[2]

Multiple factors govern the dyspareunia including the cognitive-affective and the psychological components. The etiology of dyspareunia is multifactorial and is attributed to relational factors including the reaction of the sexual partner, cultural-religious factors as

attitude towards sexuality, biomedical factors including pelvic floor muscle disorders, sexually transmitted diseases, infections, and hormonal changes, and cognitive-affective factors including pain catastrophizing, anxiety, fear, and sexual abuse. Identification of the etiological factors for dyspareunia is vital for appropriate treatment and diagnosis of dyspareunia in affected females.[3]

Dyspareunia significantly and negatively affects the mental health and physical state of affected females and is correlated to various individual reactions including depression, anger, anxiety, sense of deprivation, lack of self-esteem, guilt, shame, and/or embarrassment. Dyspareunia also causes various personal problems including conflicts among the couples, significant distress, decreased sexual function, and/or reduced sexual satisfaction. Despite the vital role of cognitive-affective factors including anxiety and pain catastrophizing in the dyspareunia etiology, the existing literature data depicts controversial results concerning the association of dyspareunia to these factors.[4]

Pain catastrophizing is a psychological condition depicting the tendency to feel helpless, magnify, or ruminate about the pain, and is usually seen in subjects with exaggerated and negative reactions to a painful experience. It is taken as a behavior of seeking help usually depicted by exaggerating illness in a social scenario that is not aimed to decrease the pain. Subjects with higher scores for pain catastrophizing usually increase the pain, are incapable of pain management, and cannot divert attention. The relation of chronic pain and pain catastrophizing in conditions likevaginismus is clear, however, the existing literature data is scarce concerning the relationship of dyspareunia and pain catastrophizing, and the results of various studies are contradictory.[5]

Anxiety is characterized as a feeling of worry and panic which is transient in assessment and has several psychological and physical symptoms. All subjects can display some anxiety which is visible on their face concerning the danger or stress, whereas, other subjects experience severe anxiety in their day-to-day activities that can lead to significant disruption and distress in their daily life. Previous literature data reports that anxiety can either be a consequence of dyspareunia or can be an independent predictor for dyspareunia to occur.[6]

As dyspareunia has adverse effects on the health of affected females, it is vital to assess the adequate treatment for dyspareunia and to find the factors contributing to dyspareunia. However, the research concerning dyspareunia has vastly increased in the past few years, the results of these data are contradictory concerning the factors associated with dyspareunia warranting further research on the topic. Also, the majority of the literature data is from the Western region with very few studies from collectivist and traditional countries. The vital role of psychological factors including anxiety and pain catastrophizing in the etiology of dyspareunia and the ability to modify these factors warrant the need for further assessment and exploration of this topic.[7]

The present study aimed to comparatively assess the pain catastrophizing and anxiety in healthy females to females with dyspareunia in reproductive age.

MATERIALS AND METHODS

The present cross-sectional clinical study was aimed to comparatively assess pain catastrophizing and anxiety in healthy females to females with dyspareunia in reproductive age.The study was done at the Department of Psychiatry and Obstetrics and Gynecology of the Institute.

The study included premenopausal and married females of reproductive age who were randomly selected for the study. The study assessed females who visited the Department of Obstetrics and Gynecology of the Institute.

The present study was based on the questionnaire format which was distributed to the participants in both online and offline format. In online and offline formats, the identity of the participants was kept hidden. The online questionnaire was distributed to the subjects via Instagram, WhatsApp, Telegram, and Facebook. For the offline format, the questionnaire was filled out by the subject on the spot for the females who visited the Institute during the study period.

An informed consent was obtained from all the participants in both written and verbal format. The subjects were only included following strict compliance with the inclusion criteria. The mean time taken by the participants to fill out the questionnaire was 10 to 15 minutes. After a critical assessment of the filled questionnaire, the females that replied yes to both questions about pain in more than/equal to 50% intercourse and dyspareunia for more than the past 6 months were considered as dyspareunia cases, and the remaining females were considered free of pain and comprised the control group.

The criteria for eligibility in the study participation for the control and dyspareunia group were the females that did not give birth in the past six months, had intercourse for a minimum of 5-6 times in the past six months, were not pregnant, and married females.

The data for the study were gathered using a checklist formulated for the study including the background and demographics, two questionnaires concerning anxiety and pain catastrophizing, and two items to evaluate the dyspareunia.

For background characteristics, 12 items were assessed including the pain location, pain duration, genital contact aversion, body image satisfaction, sexual abuse, use of medication, disease history, economic state, occupation, education years, marriage duration, and age. All these background characteristics were assessed using a single item as reported by the participants themselves.

For dyspareunia diagnosis, study subjects reported either no or yes to the two items including the pain in more than/equal to 50% intercourse and dyspareunia for more than the past 6 months. In cases where participants replied yes to both questions, they were assigned to the dyspareunia group.

To assess the anxiety, STAI-6[8] (Spielberger State-Trait Anxiety Inventory-6) was used. STAI-6 questionnaire comprised six items assessed on a Likert scale having 4 points from almost always to rarely assigned scores of 4 and 1 respectively. Reverse scoring was used for items 1, 4, and 5 with overall scores ranging from 6 to 24. This STAI-6 with six items had the same reliability and structure as seen in the original version of STAI-6 which had 20 items in the questionnaire. Cronbach's alpha[23] was used to confirm the reliability and validity of the questionnaire used.

Pain catastrophizing was assessed using PCS (Pain Catastrophizing Scale)[9] which had 13 items used to assess the catastrophic thoughts of the participants and their attitude toward the pain that they felt. The responses to PCS were assessed on a 5-point Likert scale with scores ranging from 0 to 52, and 4 and 0 depicted all the time and not at all respectively. The higher scores from 0-52 indicated a high level of catastrophic feelings and pain.

The data gathered were analyzed statistically using SPSS software version 21.0 (IBM Corp., Armonk, NY, USA) along with Fisher's exact test, Chi-square test, and independent t-test where data were described as mean and standard deviation and frequency and percentage. The p-value of <0.05 was considered statistically significant.

RESULTS

The present cross-sectional clinical study was aimed to comparatively assess pain catastrophizing and anxiety in healthy females to females with dyspareunia in reproductive age. The present study assessed 188 married Indian females where dyspareunia was confirmed in 44.68% (n=84) females, whereas, 61.17% (n=115) females were pain-free without any pareunia. The majority of the subjects from both no dyspareunia and dyspareunia groups were from the age range of 30-40 years with 56.52% (n=65) and 58.33% (n=49) females respectively followed by 24.34% (n=28) and 25%v (n=21) females respectively from <30 years of age range, and 19.13% (n=22) and 16.66% (n=14) subjects respectively from >40 years of age range. The difference was statistically non-significant with p=0.74. The majority of females from the no dyspareunia group were housewives with 64.34% (n=74) females, whereas, from the dyspareunia group were full-time working females with 69.04% (n=580 subjects. Occupation showed a non-significant difference in the two groups with p=0.53. The mean years of education following primary schooling were 14.2±2.9 and 13.3±2.8 years respectively from no dyspareunia and dyspareunia groups which were significantly higher for the dyspareunia group with p=0.005 (Table 1).

Table 1: Comparison of demographics and other factors in two groups of study subjects

Characteristics	No dyspareunia n=115 (%)	Dyspareunia n=84 (%)	p-value
Age range (years)			
<30	28 (24.34)	21 (25)	0.74
30-40	65 (56.52)	49 (58.33)	
>40	22 (19.13)	14 (16.66)	
Occupation			
Full-time working	20 (17.39)	58 (69.04)	0.53
Part-time working	21 (18.26)	14 (16.66)	
Housewives	74 (64.34)	12 (14.28)	
Education years after primary school	14.2±2.9	13.3±2.8	**0.005**
Pain duration (years)	-	5.1±6.2	
Marriage duration (years)	11.6±6.4	11.7±6.8	0.91
Disease history			
Cancer	0	1 (1.19)	**<0.001**
Depression and anxiety	22 (19.13)	20 (23.80)	
Gynecologic diseases	29 (25.21)	34 (40.47)	
None	64 (55.65)	29 (34.52)	
Medication history			
Yes	17 (14.78)	24 (28.57)	**0.001**
No	98 (85.21)	60 (71.42)	
Pain location			
Vaginal depth		20 (23.80)	
Vaginal entrance		32 (38.09)	
Both		32 (38.09)	
Sexual abuse history			
Positive	5 (4.34)	3 (3.57)	0.54

Negative	110 (95.65)	81 (96.42)	
Body image satisfaction			
Very satisfied	37 (32.17)	16 (19.04)	**0.01**
Somewhat satisfied	29 (25.21)	30 (35.71)	
Moderately	37 (32.17)	25 (29.76)	
Somewhat dissatisfied	7 (6.08)	7 (8.33)	
Very dissatisfied	5 (4.34)	6 (7.14)	
Aversion to genitalia touch			
Yes	13 (11.30)	14 (16.66)	0.12
No	102 (88.69)	70 (83.33)	

The mean duration of pain in the dyspareunia group was 5.1±6.2 years. The mean marriage duration was 11.6±6.4 and 11.7±6.8 years in subjects with no dyspareunia and pareunia group respectively which was non-significant with p=0.91. Diseases were more prevalent in the dyspareunia group with cancer, depression and anxiety, and gynecological diseases in 1.19% (n=1), 23.80% (n=20), and 40.47% (n=34) study subjects respectively with p<0.001. History of medicine intake was significantly higher in dyspareunia group with 28.57% (n=24) subjects compared to no dyspareunia group with 14.78% (n=17) subjects and p=0.001. In the dyspareunia group, the pain was felt at vaginal depth, vaginal entrance, and at both places in 23.80% (n=20), 38.09% (n=32), and 38.09% (n=32) subjects respectively. A non-significant difference was seen concerning the history of sexual abuse in the two groups with p=0.54. Body image satisfaction was higher in subjects with no dyspareunia with p=0.01. Aversion to genitalia touch was seen in 11.30% (n=13) and 16.66% (n=14) subjects with no dyspareunia and dyspareunia respectively which was non-significant with p=0.12 as shown in Table 1.

On comparison of the cognitive variables in the two groups of study subjects, it was seen that mean anxiety scores were 7.2±4.3 and 8.9±4.7 in subjects with no dyspareunia and dyspareunia respectively which was significantly higher in subjects with dyspareunia with p=0.001. Pain catastrophizing was significantly higher in subjects with dyspareunia with mean scores of 22.6±13.0 compared to 14.8±11.7 in subjects with no dyspareunia. This difference was statistically significant with p=0.001 as depicted in Table 2.

Table 2: Comparison of cognitive variables in two groups of study subjects

Factors	No dyspareunia n=115 (%)	Dyspareunia n=84 (%)	p-value
Anxiety	7.2±4.3	8.9±4.7	**0.001**
Pain catastrophizing	14.8±11.7	22.6±13.0	**0.001**

With regression analysis assessment for the factors associated with anxiety and pain catastrophizing in the study subjects, it was seen that anxiety was inversely related to the age of the subjects, with lesser duration of marriage, and with sexual abuse, whereas, pain catastrophizing showed a significant association of aversion to genitalia touch and body image dissatisfaction with p=0.08. Pain catastrophizing was increased by 4.96 and 15.82 respectively with body image satisfaction and aversion to genitalia touch as depicted in Table 3.

Table 3: Correlation of various study factors to anxiety and pain catastrophizing in females with dyspareunia

Parameter	Mean ± S. D	p-value
Anxiety		
Sexual abuse	5.63±3.13	0.22
Marriage duration	0.36±0.14	0.54
Age	-0.57±0.19	-0.82
Pain catastrophizing		
Body image satisfaction	4.96±2.76	0.08
Genitalia touching aversion	15.82±7.67	0.06

DISCUSSION

The present study assessed 188 married Indian females where dyspareunia was confirmed in 44.68% (n=84) females, whereas, 61.17% (n=115) females were pain-free without any pareunia. The majority of the subjects from both no dyspareunia and dyspareunia groups were from the age range of 30-40 years with 56.52% (n=65) and 58.33% (n=49) females respectively followed by 24.34% (n=28) and 25%v (n=21) females respectively from <30 years of age range, and 19.13% (n=22) and 16.66% (n=14) subjects respectively from >40 years of age range. The difference was statistically non-significant with p=0.74. The majority of females from the no

dyspareunia group were housewives with 64.34% (n=74) females, whereas, from the dyspareunia group were full-time working females with 69.04% (n=580 subjects. Occupation showed a non-significant difference in the two groups with p=0.53. The mean years of education following primary schooling were 14.2±2.9 and 13.3±2.8 years respectively from no dyspareunia and dyspareunia groups which were significantly higher for the dyspareunia group with p=0.005. These findings were comparable to the studies of Valadares AL et al[10] in 2008 and Goldstein AT et al[11] in 2009 where authors assessed subjects with demographics comparable to the present study.

It was seen that the mean duration of pain in the dyspareunia group was 5.1±6.2 years. The mean marriage duration was 11.6±6.4 and 11.7±6.8 years in subjects with no dyspareunia and pareunia group respectively which was non-significant with p=0.91. Diseases were more prevalent in the dyspareunia group with cancer, depression and anxiety, and gynecological diseases in 1.19% (n=1), 23.80% (n=20), and 40.47% (n=34) study subjects respectively with p<0.001. History of medicine intake was significantly higher in dyspareunia group with 28.57% (n=24) subjects compared to no dyspareunia group with 14.78% (n=17) subjects and p=0.001. In the dyspareunia group, pain was felt at vaginal depth, vaginal entrance, and at both places in 23.80% (n=20), 38.09% (n=32), and 38.09% (n=32) subjects respectively. A non-significant difference was seen concerning the history of sexual abuse in the two groups with p=0.54. Body image satisfaction was higher in subjects with no dyspareunia with p=0.01. Aversion to genitalia touch was seen in 11.30% (n=13) and 16.66% (n=14) subjects with no dyspareunia and dyspareunia respectively which was non-significant with p=0.12. These results were consistent with the previous studies of Mohammadzadeh Z et al[12] in 2022 and Peixzoto MM et al[13] in 2015 where the most commonly reported dyspareunia pain was at the vaginal entrance, more intake of medicine, and more prevalence of systemic diseases was seen in subjects with dyspareunia compared to pain-free subjects.

Concerning the comparison of the cognitive variables in the two groups of study subjects, it was seen that mean anxiety scores were 7.2±4.3 and 8.9±4.7 in subjects with no dyspareunia and dyspareunia respectively which was significantly higher in subjects with dyspareunia with p=0.001. Pain catastrophizing was significantly higher in subjects with dyspareunia with mean scores of 22.6±13.0 compared to 14.8±11.7 in subjects with no dyspareunia. This difference was statistically significant with p=0.001. These results were in agreement with the work of Dettore D et al[14] in 2013 and Hassan H et al[15] in 2019 where authors reported high anxiety in females with dyspareunia. Also, pain catastrophizing was reported to be associated with dyspareunia by the studies of Borg C et al[16] in 2012 and Martin CE et al[17] in 2011.

Using the regression analysis assessment for the factors associated with anxiety and pain catastrophizing in the study subjects, it was seen that anxiety was inversely related to the age of the subjects, with lesser duration of marriage, and with sexual abuse, whereas, pain catastrophizing showed a significant association of aversion to genitalia touch and body image dissatisfaction with p=0.08. Pain catastrophizing was increased by 4.96 and 15.82 respectively with body image satisfaction and aversion to genitalia touch. These results were in line with the findings of Khandker M et al[18] in 2011 and Thomten J et al[19] in 2014 where a similar association of pain catastrophizing and anxiety was seen in females with dyspareunia.

LIMITATIONS

The study had a few limitations including the use of limited scales and items to assess the dyspareunia, consideration of data reported by subjects on the questionnaire for the results formulation, reliability of the online data which might not be filled by participants themselves or might be affected by various other factors.Also, the study was cross-sectional which might not assess the causal relationship in the parameters assessed. The study also failed to establish if pain catastrophizing and anxiety resulted from dyspareunia. However, the study avoided sampling biases, had a large sample size, and considered a control group that formed the study's strengths.

CONCLUSION

The present study concludes that a significant association exists in anxiety and pain catastrophizing to dyspareunia which depicts that dyspareunia is usually considered to be associated with physical causes, psychological factors also play a vital role in dyspareunia and should be considered. Managing traumatic thoughts and anxiety can help subjects with dyspareunia cope with pain in a better way.

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