Prevalence of Depression and Anxiety Disorders and Their Relationship with Sexual Functions in Women Diagnosed with Lifelong Vaginismus

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SUMMARY

Objective: In patients with vaginismus, the Lack of knowledge on rates of depression and anxiety disorders is noteworthy. The aim of the present study was to investigate the prevalance of anxiety disorders and major depression and to examine the relationship of these comorbidities with sexual functions in women diagnosed with lifelong vaginismus.

Method: One hundred and fourty-four women who were diagnosed with vaginismus were recruited for the study. Depression and anxiety disorders section of the Structured Clinical Interview for DSM-IV Axis I Disorders (SCID-I) and Golombok-Rust Inventory of Sexual Satisfaction (GRISS) were administered to the participants.

Results: At least one comorbid anxiety disorder and/or depression was found in 79.86 % of the cases. The most common comorbid disorder was specific phobia (63.9%). This was followed by major depression (35.4%), social anxiety disorder (13%), panic disorder (10%), obsessive compulsive disorder (5%) and generalized anxiety disorder (2%). On GRISS, mean avoidance score was higher in patients with comorbid depression and non-communication score was higher in patients with comorbid panic disorder when compared to patients with no comorbidity.

Conclusion: The prevalence of depression and anxiety disorders, especially spesific phobia, was higher in patients with vaginismus than the general population. Both high comorbidity of these psychiatric disorders and disruption of functions in all domains of sexuality emphasize the importance of holistic approach in evaluation of these patients.

Keywords: Vaginismus, genitopelvic pain/penetration disorder, depression, anxiety disorders, comorbidity

INTRODUCTION

Vaginismus has been defined as the fear/anxiety related to experiencing vulvovaginal pain while waiting for occurence of coitus or during coitus in the process of sexual intercourse and as theexcessive straining and tightening of the pelvic floor muscles during the attempt of coitus. However, the subtitle of vaginismus has been cancelled in DSM-5 to be placed under the diagnosis ofdyspareunia with the definition of "genito-pelvic pain and penetration disorder"(APA 2013). Incidences of vaginismus diagnosis of among women who consult sexual dysfunction outpatient clinics are around 25% in Western societies (Nobre etal. 2006). Yet, the most common clinically typed female sexual dysfunction has been observed to be vaginismus in Turkey. Clinical diagnosis of vaginismus has been reported to have a high incidence, ranging between 41% and 75.9%, among women consulting sexual therapy centers (Doğan 2009, Özdemir et al. 2006, Tuğrul and Kabakçı 1997, Yıldırım et al. 2011).

Phobic reactions in patients with vaginismus are not limited to vaginal pain and vaginal penetration. It has been reported that these individuals have higher anxiety levels and greater tendency to anxiety compared to healthy controls (Karagüzel

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et al. 2016, Watts and Nettle 2010). It has also been shown that increased depression and anxiety levels affect adversely the sexual functionsin these patients (Karagüzel et al. 2016).

It is known that sexual dysfunctions frequently show association with other psychiatric disorders. Populationbased studies have shown that the levels of anxiety and depression symptoms are increased in most of the individuals with lifelong sexual dysfunction, and that 57% of these individuals have another lifetime psychiatric disorder (Lindal and Stefansson 1993, Kate et al. 2000). Clinically assessedincidences of mood disorders, anxiety disorders and personality disorders were found to be higher in females with sexual dysfunction compared to the females in the general population (Derogatis et al. 1981, van Lankveld and Grotjohann 2000).In a study, which conducted with women consulting a sexual dysfunction outpatient clinic in Turkey,it was observed that comorbid psychiatric diagnoses were not uncommon,with the most common comorbidities being depression, dysthymia and adjustment disorder (Erişti ren et al. 2001). It has been proposed that comorbid psychiatric disorders complicate the treatment of sexual dysfunction and have adverse effects on the treatment outcome (Hawton et al. 1986). It is rather difficult to reach a specific conclusion related to psychiatric comorbidity in vaginismus based on these studies, because the number of subjects with vaginismus is substantially low in the samples of these studies (Derogatis et al. 1981). Thus, an important deficiency is noted regarding the prevalence of other psychiatric disorders accompanying vaginismus in the literature.

The aim of this study was to investigate the percentages of major depression and anxiety disorders in patients with vaginismus in order to amend the deficiency in the literature. Another aim of the study was to examine the relationship of depression and anxiety disorder comorbidities in vaginismus patients with the sexual functionality of these patients.

METHOD

Sample and procedure

Out of the 274 female vaginismus cases who consulted Bakırköy Mental and Neurological Disorders Education and Research Hospital Sexual Dysfunction Outpatient Clinic between February 2013 and May 2013, 144 consecutive patients who accepted to participate, were recruited for the study. All of the patients were heterosexual females aged between 18 and 60 years who had regular sexual partners.The diagnosis of primary lifelong vaginismus was made by a psychiatrist trained in the field of sexual dysfunction, according to the DSM IV-TR diagnostic and therapeutic criteria and on the bases of clinical assessment, detailed sexual history and partner interviews. After reading and signing the written informed consent form and accepting to participate in the study, the patients completed the Sociodemographic Data Form, the Structured Clinical Interview for DSM IV Axis I Disorders (SCID-I) and the female version of the Golombok-Rust Inventory of Sexual Satisfaction (GRISS). Diagnosis of vaginismus was made after gynecological pathologies were excluded with a detailed examination performed by a gynecologist in accordance with the standardized assessment procedures of the Sexual Dysfunction Outpatient Clinic. One hundred and twenty of the patients had undergone gynecological examination a short time before consulting psychiatry. Twenty four patients were assessed by a gynecologist after referral from psychiatrist in the process of assessment. Examinations performed by gynecologists did not report any gynecological pathology which could lead to any sexual problem. Diagnosis of vaginismus was tested by interviewing the partners of all patients.

Only the patients with primary vaginismus were included in the study. Sexual problem meeting the diagnostic cirteria of another sexual dysfunction before attempting coitus or diagnosis of independent primary sexual dysfunction which could be a clinical focus of interest were not found after detailed sexual history taken from all patients. Sexual problems which developed secondary to vaginismus after presentation of the clinical picture of vaginismus were not included in the exclusion criteria of the study, lest the sample would be weakened in favour of the hypothesis by excluding this kind of cases. Patients with history of sexual trauma and other sexual dysfunctions including the partner's erectile dysfunction and severe premature ejaculation which could cause lack of sexual intercourse were excluded from the study. Similarly, relationship problem or refusal of partner with a severity disrupting sexual relationship were considered to beexclusion criteria. Approval was obtained from Bakırköy Mental and Neurological Disorders Education and Research Hospital Ethics Committee.

Assessment Tools

The Sociodemographic Data Form: This semi-structured form which was developed by the investigators consisted of questions related to the participants' sociodemographic characteristics, duration of marriage, type of marriage, house environment and cultural characteristics of the families.

Structured Clinical Interview for DSM IV Axis I Disorders (SCID-I): The SCID-I facilitates investigating by one to one interview on the basis of the DSM-IV diagnostic criteria if any Axis I diagnosis was made in the past and/or in the last one month (First et al. 1996). The validity and reliability study for the Turkish version of this form was conducted by Öztürkçügil et al. (1999).By means of this form the participants were queried for the presence of symptoms of depression and anxiety disorders in the last one month. Presence of a lifelong diagnosis of vaginismus was queried to confirm the diagnosis of vaginismus.

The Female version of the Golombok-Rust Inventory of Sexual Satisfaction (GRISS): This inventory, developed by Rust and Golombok (1986), is designed to evaluatethe quality of sexual relationship and sexual dysfunctions. The female version of the inventory consisting of 2 separate forms of 28 items for women and men, was used. Both the total score and the scores obtained from the subdimensions can be used for evaluating the inventory. The subdimensions consist of questions on frequency, communication, satisfaction, avoidance, sensuality, vaginismus and orgasm. High scores are related to impairment of sexual functions and in the quality of the relationship. A score of five or above indicates that there is a problem related with that subdimension. The Turkish validity and reliability study was performed by Tuğrul et al. (1993).

Statistical Analysis

The descriptive statistics on GRISS subdimension and total scores obtained in the study were presented as mean ± standard deviation. The diagnoses made on theSCID-I were summarized as numbers and percentages. Compatibility of the GRISS scores with normal distribution was tested using the Kolmogrov Smirnov test. In comparisons of GRISS scores according to the diagnoses made on theSCID-I, the independent t-test was used for variables showing normal distribution and Mann Whitney U test was used for the variables not on a normal distribution. Statistical analyses were performed using R 3.3.2v (open source) program and a p value of .05 was considered statistically sigificant.

RESULTS

Sociodemographic characteristics of the women who were included in the study are summarized in Table 1, wherein the sociodemographic characteristics of the women who were and were not diagnosed with comorbidities including depression and/or anxiety disorder are compared. A significant difference was determined between the education levels of the groups with and without (p=0.042).

When incidences of the SCID-I based evaluation of anxiety disorder and depression diagnoses of the participant women were examined, it was found that at least one diagnosis of anxiety disorder and/or depression was present in 115 (79.9%) of the 144 patients. When the distribution of the diagnoses was examined, it was observed that 63.9% had specific phobia, 35.4% had major depression, 9% social anxiety disorder, 6.9% had panic disorder, 3.5% obsessive compulsive disorder, 2.8% had post-traumatic stress disorder and 4.1% had a generalized anxiety disorder (Table 2).

No significant correlation was found when the relationship between age and the mean GRISS total and subdimension scores were examined. There was a significant linear

Table 1. Comparison of sociodemographic characteristics according to depression or anxiety disorder comorbidity in vaginismus patients

		Depression or anxiety disorder comorbidity		
	Total (n=144)	**Yes (n=115)**	**No (n=29)**	**p**
Age[1]	26.01±4.58	26(23-28)	25(23-28)	.914
Education[2]				
Elemantary school	30(20.8)	25(21.74)	5(17.24)	.042
Middle school	34(23.6)	23(20)	11(37.93)	
High school	57(39.6)	51(44.35)	6(20.69)	
University	23(16)	16(13.91)	7(24.14)	
Birth place[2]				
Province	49(34)	42(36.52)	7(24.14)	.395
District	34(23.6)	28(24.35)	6(20.69)	
Village	12(8.3)	8(6.96)	4(13.79)	
Metropolis	49(34)	37(32.17)	12(41.38)	
Occupation[2]				
Housewife	97(67.4)	75(65.22)	22(75.86)	.576
Worker	29(20.1)	25(21.74)	4(13.79)	
Officer	7(4.9)	5(4.35)	2(6.9)	
Self-employment	11(7.6)	10(8.7)	1(3.45)	
Way of marriage[2]				
Agreement	74(51.4)	56(48.7)	18(62.07)	.710
Arranged	53(36.8)	44(38.26)	9(31.03)	
Arranged and forced	15(10.4)	13(11.3)	2(6.9)	
Abduction	2(1.4)	2(1.74)	0(0)	
Marriage duration (Months)[1]	23.71±25.1	18(8-30)	15(7-25)	.205
Kinship with husband?[2]				
Yes	25(17.4)	19(16.52)	6(20.69)	.785
No	119(82.6)	96(83.48)	23(79.31)	
Family type[2]				
Nuclear family	113(78.5)	91(79.13)	22(75.86)	.351
Extended family	11(7.6)	7(6.09)	4(13.79)	
Extended nuclear family	20(13.9)	17(14.78)	3(10.34)	

[1]Tested with Mann Whitney U test. Descriptive statistics summarized as mean±standart deviation. [2]Tested with Chi square test.

Table 2. Depression and anxiety disorder comorbidities in vaginismus patients

	Number	**%**
Specific phobia	92	63.9
Depression	51	35.4
Social anxiety disorder	13	9.0
Panic disorder	10	6.9
Obsessive compulsive disorder	5	3.5
Post-traumatic stress disorder	4	2.8
General anxiety disorder	2	1.4
Anxiety Disorder NOS*	1	0.7
More than one psychiatric comorbidity	83	57.6
Depresson or/and at least one anxiety disorder	115	79.9

* Anxiety Disorder NOS = Anxiety Disorder Not Otherwise Specified

Table 3. Relationship between age, marriage duration and GRISS mean scores

		Infrequency	Non-communication	Dissatisfaction	Avoidance	Non-sensuality	Vaginismus	Anorgasmia	GRISS Total
Age[1]	r	.133	-.038	.058	.135	-.012	-.078	.018	.050
	p	.111	.647	.487	.108	.884	.350	.831	.556
Marriage duration (Months)[2]	r	.217	.020	.156	.095	.002	-.060	-.073	.068
	p	.009	.812	.062	.258	.977	.478	.386	.415

[1]Tested with Pearson Corelation test. [2]Tested with Spearman Corelation test.
GRISS: Golombok-Rust Inventory of Sexual Satisfaction

Table 4. Comparison of GRISS mean scores according to depression or anxiety disorder comorbidity

	Infrequency	p	Non-communication	p	Dissatisfaction	p	Avoidance	p	Non-sensuality	p	Vaginismus	p	Anorgasmia	p	GRISS Total	p
Total (n=144)	3.58±1.90		4.81±1.73		8.03±3.43		4.73±3.20		4.40±3.22		12.83±2.96		7.93±3.42		46.32±12.26	
Depression or anxiety disorder																
No (n=29)	3.72±2.17	.657	4.76±2.03	.852	7.93±3.76	.866	4.34±3.44	.471	4.1±3.03	.022	12.83±2.79	.991	7.62±3.73	.587	46.83±16.4	.844
Yes (n=115)	3.55±1.84		4.83±1.66		8.05±3.35		4.83±3.14		5.62±3.71		12.83±3.01		8.01±3.35		46.19±11.07	
Spesific phobia																
No (n=52)	3.62±1.93	.880	4.81±1.74	.980	7.38±3.69	.090	4.46±3.21	.452	5±3.46	.095	13.31±3.17	.148	7.33±3.47	.111	45.9±14.58	.761
Yes (n=92)	3.57±1.89		4.82±1.74		8.39±3.23		4.88±3.19		4.07±3.05		12.57±2.81		8.27±3.36		46.55±10.82	
Panic disorder																
No (n=134)	3.58±1.94	.977	4.73±1.73	.039	8.08±3.41	.488	4.63±3.17	.160	4.31±3.2	.188	12.7±2.99	.050	8.04±3.43	.171	46.07±12.36	.368
Yes (n=10)	3.60±1.43		5.9±1.45		7.3±3.71		6.1±3.41		5.7±3.5		14.6±1.71		6.5±3.03		49.7±10.9	
Social anxiety disorder																
No (n=131)	3.60±1.92	.694	4.79±1.75	.566	8.03±3.47	.976	4.63±3.12	.220	4.35±3.24	.544	12.85±2.89	.858	7.9±3.38	.741	46.15±12.17	.590
Yes (n=13)	3.38±1.80		5.08±1.66		8±3.06		5.77±3.88		4.92±3.15		12.69±3.68		8.23±3.92		48.08±13.58	
Depression																
No (n=93)	3.45±1.93	.263	4.71±1.91	.292	8.09±3.47	.784	4.29±3.17	.026	4.39±3.23	.938	12.55±2.8	.119	8.05±3.36	.561	45.53±12.24	.297
Yes (n=51)	3.82±1.85		5±1.36		7.92±3.38		5.53±3.12		4.43±3.25		13.35±3.19		7.71±3.55		47.76±12.3	

Independent variables tested with t Test. Descriptive statistics summarized as mean±standart devaiation.
GRISS: Golombok-Rust Inventory of Sexual Satisfaction

relationship in the same direction between the duration of marriage and the frequency score(r=0.217, p=.009). Any significant correlation could not be found between duration of marriage and the other mean GRISS subdimension scores and total score (p>.05) (Table 3).

Comparison of the mean GRISS scores in thepresence and absence of comorbidity is summarized in Table 4. Mean non-communication (p=.039) and vajinismus (p=.05) scores of women with panic disorder were significantly elevated as compared to those without panic disorder. The mean avoidance scores were found to be significantly higher in women who had depression compared to the ones who did not have depression (p=.026). Similar comparisons were not made on the basis of presence and absence of the comorbidities of obsessive compulsive disorder, post-traumatic stress disorder and generalized anxiety disorder since the numbers of the patients with these diagnoses were not high enough. The score of non-sensuality was found to be higher in the women diagnosed with the comorbidity of depression or anxiety disorder compared to the ones who did not have a comorbidity (p=.022). The differences between the mean GRISS scores of the women diagnosed with comorbidities was not statistically significant, according to other comparisons(Table 4).

DISCUSSION

Cross-sectionally, 79.9% of women diagnosed as having lifetime vaginismus had at least one diagnosis of anxiety disorder and/or major depression comorbidity.In the study conducted by Derogatis et al. (1981), mood disorder was found in 13% of the patients who had vaginismus or dyspareunia and anixety disorder was not found in these patients. In this study, a diagnosis of dyspareunia or vaginismus was made only in 16 patients.The results of this study are far from giving reliable information on the incidences of comorbid Axis I psychiatric disorders in patients with vaginismus, because the psychiatric diagnoses were not made using a structured scale and the patients with vaginismus and dyspareunia were evaluated in the same category.In the participants of out study the most common psychiatric disorder comorbid with vaginismus was specific phobia with an incidence of 63.9%. Since the relevant data are lacking, it has not been possible to compare this result with the prevalence of specific phobia in the Turkish

population. However, this percentage is approximately 12-fold higher when compared with the prevalence of specific phobia in the female population sample of the province of Şanlıurfa (4.8%) (Şimşek et al. 2008). In addition, this result is also considerably higher compared to the 12-month prevalence of specific phobia (9.5%) observed in women of Western populations (Stinson et al. 2007). This high prevalence of specific phobia suggests that the phobic dimension of vaginismus is not limited to sexual intercourse and a portion of these patients have a general tendency to phobia. In the study conducted by Farnam et al. (2014), it was shown that specific phobia and general anxiety levels were higher in 22 patients with vaginismus compared to the control group and vaginismus was proposed to have a strong relation with phobia. The incidence of panic disorder comorbidity in our sample was also approximately 6-fold higher compared to that (1.2%) found in a female population sample in the province of Şanlıurfa (Şimşek et al. 2008). Incidences of the diagnoses of post-traumatic stress disorder, social anxiety disorder and obsessive compulsive disorder comorbidites in the population sample of our study could not be evaluated by comparison to the general population in Turkey since data on the prevalence of these diagnoses are not available in the literature. Also, the incidences of the diagnoses of post-traumatic stress disorder, social anxiety disorder and obsessive compulsive disorder did not show a marked difference when compared with the data on women in the population samples in Şanlıurfa and Konya and with the female university students in the province of Sivas (Çilli et al. 2004, İzgiç et al. 2004, Şimşek et al. 2008).

Depression was diagnosed in 35.4% of the women in our sample. This indicates that the prevalence of depression is approximately 5-fold higher in patients with vaginismus as compared to the general population. In the study conducted by Şimsek et al. (2008) the structured diagnostic tool (SCID I) was used similarly to our study, and the prevalence of major depression was found to be 7.3% in women in the Turkish population. The 12-month prevalence of major depression was found to be 11% in women who lived in a metropolisin Turkey (Topuzoğlu et al. 2015). However, there are limitations to comparing our data with epidemiological studies, because epidemiological studies related to the prevalence of depression in the general population in our country are based on self-report scales rather than structured diagnostic interviews (Binbay et al. 2014).Percentage of the depression diagnoses obtained in our study was also considerably higher compared to the percentage found in the study in which Derogatis et al. evaluated vaginismus and dyspareunia in the same category (Derogatis et al. 1981). This relatively high percentage might have arisen from the low number of the patients with vaginismus in the study by Derogatis et al. Depression symptoms among women with vaginismus in Turkey have been reported to be more commonas compared to healthy controls (Karagüzel et al. 2016, Konkan et al. 2012). However, the prevalence of depression was not evaluated by means of a structured diagnostic tool.In addition to the data in the literature, this study showed that the percentage of the comorbidity of clinical major depression was also considerably higher in patients with vaginismus compared to the general population.

Studies conducted in recent years in our countryhave reported that GRISS scores of patients with vaginismus are considerably higher compared to both the general population and the control groups (Doğan and Saraçoğlu 2009, Karagüzel et al. 2016, Konkan et al. 2012). However, there are also studies which have proposed that sexual cycle is not affected in women with vaginismus (Hawton and Catalan 1990, Lamont 1994). In our study, the mean GRISS total scores and all subdimension scores were also found to be higher when compared to the mean general population value found in the Turkish validity study by Tuğrul et al. (1993).Although these findings support the assumption that complaints in vaginismus are not only limited to the problem of inability to perform sexual intercourse, but the stages of desire, arousal and orgasm and sexual communication are also affected to an important degree, it is recommended that this assumption should be evaluated in controlled studies with large samples, because this study did not include a control group.

In addition, it was observed that the mean GRISS total score did not differ between the groups with and without comorbidity. This may be related to the fact that the GRISS scores in the vaginismus patient group were higher compared to the general population as stated above. On the other hand, having a diagnosis of panic disorder was found to be associated with the severity of vaginismus and less sexual communication. Studies comparing sexual functions in women with panic disorder with control groups have reported contradictory results.Van Minnen and Kampman (2000) found that women with panic disorder had lower sexual desire and lower frequency of sexual relation ascompared to the control group. On the other hand, Mercan et al. (2006) observed that diagnosis of panic disorder comorbidity alone did not affect sexual functions adverseley in women. Compared to the patients with panic disorder in these studies, the mean GRISS total and subdimension scores obtained in our study were found to be considerably higher, probably because all of our patients had vaginismus which is a sexual dysfunction disorder.Despitea sample consisting of vaginismus patients only- and high GRISS scores, these findings showed that diagnosis of panic disorder comorbidity was associated with low communication and vagnisimus scores. Further, the patients diagnosed with depression avoided sexual relation with a higher frequency as compared to the ones who did not have depression in this study. Although there is a two-way relationship between depression and many sexual dysfunctions, finding out that only avoidance was associated with the comorbidity

of depression might have arisenagain from investigating a patient group with sexual dysfunction (Atlantis and Sullivan, 2012).Karagüzel et al. (2016),comparing vaginismus patients with a control group, found a relationship between depression and anxiety levels and the GRISS scores.In their study, the sample was limited to 25 patients and GRISS was associated with depression and anxiety by using scale values rather than referring to clinical diagnosis.Given the results of this study, it can be stated that the relationshipsbetween sexual dysfunctions and anxiety disorder and depression comorbidity remains limited to certain areas.

One of the limitations of the study was the absence of a control group and comparison of the assessed incidences of anxiety disorder and depression comorbidities with thosein the general population. In addition, the comorbidities were evaluated only cross-sectionally and the diagnoses of lifelong anxiety disorders and depression were not included in the evaluation. Considering that the women had lifelong vagnismus, it is important to evaluate the lifelong prevalence of the comorbidities. Investigating only the comorbidities of anxiety disorders and depression was another limitation of this study. This was because the study sample was a group who consulted a specialized sexual dysfunction outpatient clinic wherethe stepwise system of approach consisted of diagnostic pre-elimination. Another reason for investigating the incidence of only anxiety disorders and depression was that these disorders had been examined in previous studies both as comorbidities and as aetiology. These comorbidities, although not causing inhibition, should be addressed in the process of therapy.Not evaluating the severity of the comorbid depression and anxiety disorders is another limitation of the study. Not excluding secondary sexual problems which develop in relation to vaginismus may be considered a limitation, but the effects on comorbidity of sexual problems secondary to vaginismus cannot be considered independently from vaginismus. Therefore, it was not regarded as a variable affecting hypothesis testing.

CONCLUSION

The presented study showed that incidences of comorbid depression, specific phobia, social anxiety disorder and panic disorder was significantly high in patients with vaginismus. The adverse effects of these comorbiditieson sexual functions were, however, observed only in limited areas contrary to expectations.In addition, the results suggest that vaginismus is closely associated especially with specific phobia and that a section of vaginismus patients can be evaluated better within the framework of phobia. Similarity of vaginismus treatment (involving targeting confrontation with anxiety caused by looking and touching body regions and avoiding these body regions) with phobia treatment supports this view. Also, both high incidences of anxiety and depression comorbidities in vaginismus cases and the impairment of sexual functionality in all areas emphasize the importance of a holistic approach in clinical evaluation of these patients.

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