Altered Affective Temperaments in Women With Vaginismus

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ABSTRACT

Objective: Vaginismus is one of the most frequently occurring genito-pelvic pain disorders in women. Sexual dysfunction commonly presents with comorbid psychiatric disorders, and many patients suffering from the former exhibit the latter. The objective of this study was to investigate the affective temperaments of women with vaginismus compared to healthy controls.

Methods: Forty-eight women with vaginismus and 42 age-matched healthy women were recruited and compared in terms of their scores on the Temperament Evaluation of Memphis, Pisa, Paris, and San Diego Autoquestionnaire and a sociodemographic instrument.

Results: Except for the scores for hyperthymic temperament, those for depressive, cyclothymic, irritable, and anxious temperaments were significantly higher in the vaginismus group than in the healthy controls ($P < .05$). The analysis of covariance indicated that the anxious temperament was significantly associated with covariants.

Conclusions: On the basis of the preliminary results, women with vaginismus may be candidates for bipolar disorder. This population should therefore be screened more carefully in terms of the development of the disorder. Bipolar disorder should also be considered when treatments for comorbid psychiatric disorders are needed.

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Vaginismus is a frequently occurring genito-pelvic pain disorder in women. It is described as a penetration disorder in the *Diagnostic and Statistical Manual of Mental Disorders*, Fifth Edition (*DSM-5*), and patients with this condition cannot have intercourse because of the excessive pain that accompanies attempts at penetration.[1] Patients with vaginismus experience recurrent pelvic pain and anticipation of pelvic pain during vaginal penetration attempts.[2] The estimated frequency of vaginismus among women who are admitted to outpatient clinics for sexual dysfunction is about 25% in Western countries,[3] but incidence has been reported to be as high as 41% and 75% in Eastern nations.[4–6] Sexual dysfunction commonly presents with comorbid psychiatric disorders, and 57% of patients suffering from the former exhibit the latter.[7] Among this patient group, the most common psychiatric comorbidities are mood, anxiety, and personality disorders. Psychiatric disorders can complicate the treatment process for sexual dysfunction.[7]

Affective temperaments are regarded as antecedents of mood disorders,[8] which have been considered as part of the affective disorder spectrum on the basis of accumulating evidence. The depressive temperament is associated with depressive disorder, whereas hyperthymic and irritable temperaments are related to bipolar disorder.[8] Clinical biological studies have demonstrated that associations between affective temperaments and affective disorders as well as other psychiatric disorders are complex.[9] Although studies have investigated comorbid psychiatric disorders in relation to sexual dysfunction, no research has been devoted to affective temperaments in patients with vaginismus. The present study therefore inquired into this issue, guided by the hypothesis that women with vaginismus differ from healthy women with respect to affective temperaments.

METHODS

Participants and Settings

This study was conducted in the Department of Psychiatry of the Faculty of Medicine of Tekirdag Namık Kemal University. The research protocol was approved by the Non-Invasive Clinic Research Ethical Committee of the same university (Tekirdağ Namık Kemal University Non-Invasive Clinic Research Ethical Committee; date: May 30, 2019; approval no. 2019.99.06.20). The present study was conducted between January 1, 2020, and March 1, 2020 and was designed as a convenience study.

Patients who were diagnosed as having vaginismus in accordance with *DSM-5* criteria were enrolled in the

Clinical Points

- Vaginismus is a common genito-pelvic pain disorder in women.
- Comorbid mood disorders are insufficiently investigated in vaginismus.
- Women with vaginismus demonstrate distinct temperaments.
- Women with vaginismus are susceptible to developing bipolar disorder.

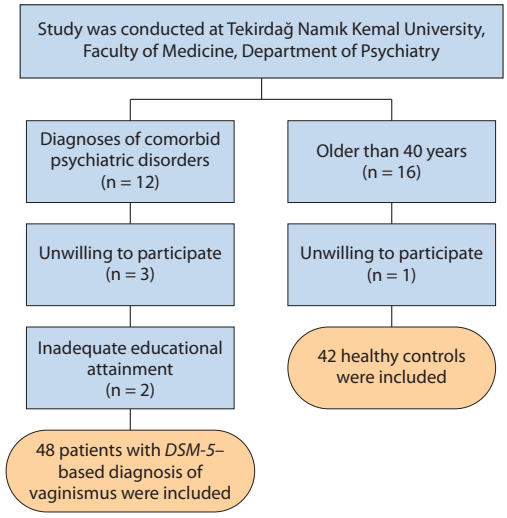
study. The patients were recruited from the Department of Psychiatry of the Faculty of Medicine of Tekirdağ Namık Kemal University. The inclusion criteria were as follows: a *DSM-5*–based diagnosis of vaginismus, no previous or current psychiatric diagnosis, sufficient education to complete the self-assessment tests used in the research, and willingness to participate in the study. Patients who had been diagnosed with a psychiatric disorder or were at the time of screening suffering from such a condition, those with insufficient education to understand the aim of the study and the scales used, and those who refused to take part in the research were excluded. An initial sample of 65 patients was recruited, but 12 were eliminated from the pool because of diagnoses of comorbid psychiatric disorders, 3 were eliminated after they expressed an unwillingness to participate, and 2 were excluded for inadequate educational attainment. Thus, the final sample comprised 48 patients. Additionally, 42 age-matched healthy women were recruited on the basis of the following inclusion criteria: aged 18 to 40 years and willing to participate after being given detailed information about the objective of the research. Figure 1 describes the selection criteria. The control group was selected from the female staff of the same hospital. All patients and healthy controls completed the Temperament Evaluation of Memphis, Pisa, Paris, and San Diego Autoquestionnaire (TEMPS-A) and a sociodemographic form. This study was performed according to the standards for biomedical research on human subjects according to the Declaration of Helsinki. All study participants provided written informed consent.

Assessment Tools

Sociodemographic form. We created the sociodemographic form, with the literature as reference. The form comprises questions regarding age, spousal age, years of education, occupation, place of residence, marital status, number of marriages, age of entry into marriage, and marital condition.

Temperament Evaluation of Memphis, Pisa, Paris, and San Diego Autoquestionnaire. The TEMPS-A is a scale originally designed by Akiskal et al[10] and adapted into Turkish by Vahip et al.[11] In the present study, this scale was used to evaluate the scores of the participants with regard to the subdimensions of the instrument, namely, depressive, cyclothymic, hyperthymic, irritable, and anxious

Figure 1. Selection Criteria for the Study Participants



temperaments. The TEMPS-A is a self-assessment scale featuring true-or-false statements that ask about the moods and temperaments experienced over the entire life course of an individual.

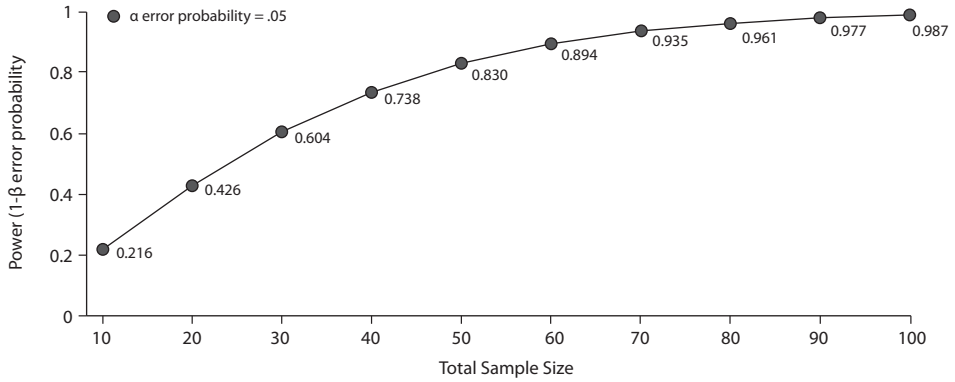
Statistical Analyses

Statistical analyses were performed using R software version 3.5.3 (The R Foundation, Vienna, Austria), SPSS version 23.0 (IBM, Armonk, New York), and G*Power version 3.1.[12] Power analysis eliminates the most important complexity in sampling and was therefore adopted in this work. Descriptive statistics, such as mean values, medians, and percentages, were calculated. The dimensions of the TEMPS-A and distribution in the groups were examined graphically and through the use of Shapiro-Wilks statistics. Pearson χ^2 test and Fisher exact test were performed to examine differences in categorical variables between the patient and control groups. The Mann-Whitney U test was conducted to assess variances in continuous variables between the groups. This test was conducted for 2 independent samples on the basis of the normality test results. For statistically significant associations, we also investigated which variables contributed to the differences via an analysis of covariance (ANCOVA). We went without a multivariate normality test because none of the data on the TEMPS-A dimensions were normally distributed. Instead, we carried out rank-based ANCOVA under the non-normality assumption. Figure 2 shows that the analysis does not readily enable normality as a single variable. Therefore, the assumption is unlikely to be achieved. To address this matter, we used the rank-based ANCOVA proposed by Kloke and McKean[13] (Figure 2).

Power Analysis

The Mann-Whitney U test was performed as a statistical test in the power analysis. The effect size was 0.86, and the 2-sample size ratio was 0.875. These values were used to

Figure 2. Power (1-β) and Total Sample Size (power analysis) Results[a,b]



[a]*t* tests/means: Mann-Whitney U test (2 groups).
[b]2-tail, normal parent distribution, effect size = .864575, allocation ratio N2/N1 = .875, α error probability = .05.

calculate the power of the test. With N = 80, the power of the test is indicated as reaching 96% (Figure 2). The sample size appropriate for the study was thus determined as 90, and the statistical power derived was more than the expected value.

RESULTS

The results showed significant *P* values. Table 1 presents the results of the Pearson χ^2 test, which reflected a statistically significant association between occupation and group type. The findings acquired via Fisher exact test indicated statistically significant relationships between the following: place of residence and group type, marital status and group type, number of marriages and group type, and marital condition and group type. According to the Mann-Whitney U test, the vaginismus and control groups differed in terms of spousal age and years of education. The difference was statistically significant.

The depressive, cyclothymic, hyperthymic, irritable, and anxious temperament scores were significantly higher in the vaginismus group compared with the control group (Table 2).

In addition, ANCOVA analysis was performed only for the patient and control groups, who showed statistically significant differences. The variables contributing to TEMPS-A dimensions were statistically significant only with respect to the anxious temperament (Figure 3). Accordingly, as covariates, spousal age and years of education significantly contribute to the differentiation in the anxious temperament scores of the patient and control groups (Table 3). The fixed-factor group variable and the rank-based ANCOVA model were also statistically significant. The model explains 28% of the variance in the anxious temperament scores.

Table 1. Descriptive and Test Statistic Results According to Group

Variable	Patients (n = 48)	Controls (n = 42)	*P* Value
Age, mean (SD) [median], y	29.13 (5.793) [29.00]	28.77 (3.369) [29.13]	.06
Spouse age, mean (SD) [median], y	32.38 (4.941) [32.00]	27.95 (5.146) [27.00]	**.000**[a,*]
Education, mean (SD) [median], y	12.83 (1.928) [12.00]	17.43 (1.192) [18.00]	**.000**[a,*]
Employed, n (%)			
Yes	22 (45.8)	30 (71.4)	**.004**[b,*]
No	20 (41.7)	12 (28.6)	
Housewife	6 (12.5)	0	
Median	2.00	1.00	
Place of residence, n (%)			
Urban	22 (45.8)	42 (100.0)	**.000**[c,*]
Rural	26 (54.2)	0	
Median	2.00	1.00	
Marital status, n (%)			
Married	44 (91.7)	6 (14.3)	**.000**[c,*]
Single	4 (8.3)	36 (85.7)	
Median	1.00	2.00	
No. of marriages, n (%)			
1	46 (95.8)	4 (9.5)	**.000**[c,*]
2	2 (4.2)	2 (4.8)	
Partner	0	36 (85.7)	
Median	1.00	.00	
Years married, mean (SD) [median]	24.17 (3.663) [24.00]	25.00 (3.464) [.00]	.729[a]
Arranged marriage, n (%)			
No	48 (100.0)	6 (14.3)	**.000**[c,*]
Yes	0	36 (85.7)	

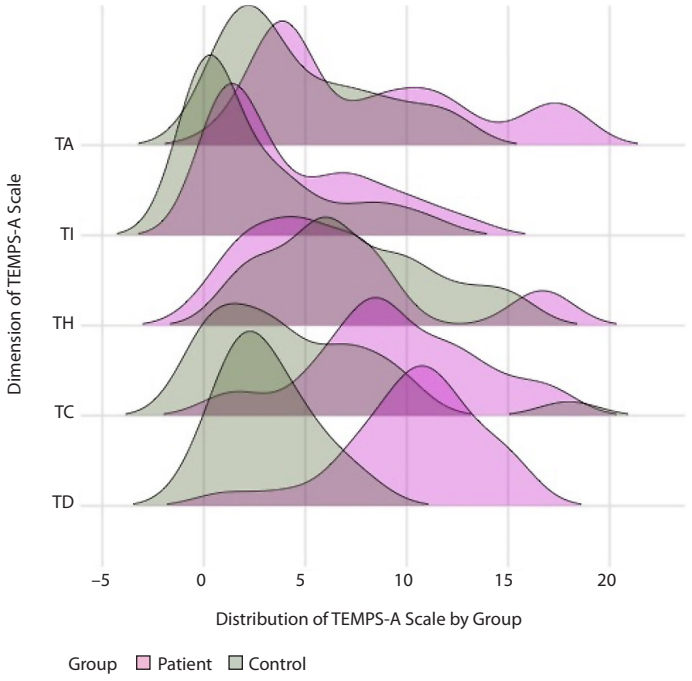
[a]Mann-Whitney U.
[b]Pearson χ^2.
[c]Fisher exact test.
*$P < .01$; bolded values indicate statistical significance.

Table 2. Comparison of Temperament Types According to the TEMPS-A Scale

Temperament	Group	n	Mean Rank	Sum of Ranks	Mann-Whitney U	*P* Value
Depressive	Patients	48	64.13	3,078.00	114.000	**.000***
	Controls	42	24.21	1,017.00		
Cyclothymic	Patients	48	58.42	2,804.00	388.000	**.000***
	Controls	42	30.74	1,291.00		
Hyperthymic	Patients	48	40.71	1,954.00	778.000	.061
	Controls	42	50.98	2,141.00		
Irritable	Patients	48	54.21	2,602.00	590.000	**.001***
	Controls	42	35.55	1,493.00		
Anxious	Patients	48	54.58	2,620.00	572.000	**.000***
	Controls	42	35.12	1,475.00		

*$P < .01$; bolded values indicate statistical significance.
Abbreviation: TEMPS-A = Temperament Evaluation of Memphis, Pisa, Paris, and San Diego Autoquestionnaire.

Figure 3. Distributions of TEMPS-A Scale Dimensions by Group



Abbreviations: TA = anxious temperament, TC = cyclothymic temperament, TD = depressive temperament, TEMPS-A = Temperament Evaluation of Memphis, Pisa, Paris, and San Diego Autoquestionnaire, TH = hyperthymic temperament, TI = irritable temperament.

Table 3. Results of Rank-Based Analysis of Covariance (dependent variable: anxious temperament)

Source	Sum of Squares	*df*	*F*	*P* Value
Intercept	33,204	1	68.4770	.000*
Spouse age	4,689	1	9.6704	.002*
Education year	7,940	1	16.3737	.000*
Group	14,718	1	30.3535	.000*
Residuals	41,216	85		

*$P < .01$.

DISCUSSION

We found that the TEMPS-A dimensions of depressive, cyclothymic, irritable, and anxious temperaments were significantly higher in the women with vaginismus than among the healthy women. Although a number of covariants were incorporated into the comparison, the findings revealed that the anxious temperament was associated only with spousal age and years of education. Comorbid psychiatric disorders have been established as accompanying vaginismus.[14] An earlier study[15] reported that 79.9% of women who have lifetime vaginismus are diagnosed with at least 1 anxiety disorder or major depression comorbidity. The authors[15] found that 13% of these women suffer from a mood disorder. Recent research[7] demonstrated that at least 1 comorbid anxiety disorder and/or depression are found in 79.86% of patients with vaginismus. The most common comorbidity was phobia (63.9%), followed by major depression (35.4%), social anxiety disorder (13%), panic disorder (10%), obsessive-compulsive disorder (5%), and generalized anxiety disorder (2%).[7] However, no conclusive results have been derived specifically with respect to comorbid bipolar disorder and affective temperaments in patients with vaginismus.

Temperaments are stable behavioral tendencies with strong affective reactivity and are linked to the biological background aspects of personality, such as activity levels, rhythms, moods, and cognition, as well as variability in these attributes. Affective temperaments factor importantly in the development of affective disorders.[16,17] Akiskal et al[16] created the modern concept of affective temperaments to identify all spectra of affective situations, from healthy reactions to major affective disorders. Several clinical studies reported that the depressive temperament is more common among patients with major depressive disorder, whereas hyperthymic and cyclothymic temperaments are specific to bipolar disorder.[18] Nevertheless, the associations between affective temperaments and other psychiatric disorders are complex.

Dolenc et al[19] evaluated patients with euthymia in terms of affective temperaments and found that affective temperaments can be assessed in 2 subclasses: the first is characterized by high depressive, irritable, anxious, and cyclothymic incidences, which can cause emotional instability, and the second is characterized by protuberant emotional and mood intensities (hyperthymic profile). In the present study, the higher scores of the vaginismus patients in the depressive, cyclothymic, irritable, and anxious dimensions suggest that women with vaginismus tend to be emotionally unstable. Such scores also led us to conclude that women with vaginismus may be candidates for bipolar disorder. Furthermore, even when the covariants could have confounded the assessment of affective temperaments, we found that only the anxious temperament was associated with these covariants and that depressive, cyclothymic, and irritable temperaments remained significantly higher in the vaginismus group. We suggest that our results also highlight an important issue in daily clinical settings. Our preliminary results indicate that women with vaginismus tend to develop mood disorders more than women without vaginismus. Regarding the importance of diagnosing some mood disorders from the patient's history and retrospectively,[20] clinicians should be aware of mood disorder symptoms during the assessment of women with vaginismus.

Only 2 studies have investigated personality traits in women with vaginismus. One study[21] reported that women with vaginismus had significantly higher histrionic-hysterical symptoms and traits compared with subjects with other sexual complaints. Konkan and colleagues[22]

reported that statistically significant higher scores were found in the vaginismus group compared with the control group only for emotionality item scores of the reward dependence subscale.

The present study has several limitations. First, although we performed a power analysis, the sample size can be considered insufficient for drawing general conclusions. Second, the vaginismus and control groups differed in terms of urban/rural similarity and educational status, which may account for some of the differences in temperaments. Finally, the single-site nature of the study can be considered a limitation.

In conclusion, we suggest that women with vaginismus are susceptible to developing bipolar disorder on the basis of our preliminary results. This population should thus be screened more carefully in terms of disease development, and bipolar disorder should be kept in mind when treatment of comorbid psychiatric disorders is warranted.

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