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Examining the Relationship Between Behçet's Disease and Depression, Anxiety, and Sexual Dysfunctions

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ABSTRACT

Objective: People with Behçet's Disease, as many individuals with chronic diseases, often face depression, anxiety, poor quality of life and sexual problems. In this study, it was aimed to evaluate depression, anxiety, and sexual dysfuntions in people with Behcet's Disease.

Method: A total of 100 participants, 50 patients (29 female) and 50 healthy volunteers (28 female), participated in the study. Beck Depression Inventory (BDI), Beck Anxiety Inventory (BAI), Female Sexual Function Index (FSFI), and International Index of Erectile Function (IIEF) were administered to the participants.

Results: Depression and sexual dysfunctions were significantly related with Behçet's Disease. In our study, all female participants with Behçet's Disease had problems in sexual functions. Erectile dysfunction was more frequent in participants with Behcet's. The results also showed that there is a significant relationship between depression and orgasmic function (p=0.004), sexual desire (p=0.028), sexual satisfaction (p=0.023), and general satisfaction (p=0.028). There was a significant difference between people with Behçet's Disease (10.54±6.45) and healthy group (7.36 ±6.13) in depression scores (p=0.009). Patients with systemic involvement and those with mucocutaneous involvement were found to be similar in terms of BDI and BAI scores (p>0.05).

Conclusion: Behçet's Disease was found to be a risk factor for depression and sexual dysfunctions.

Keywords: Behçet's Disease, Sexual Function, Depression

INTRODUCTION

Behcet's disease is a chronic systemic disorder of unknown etiology, characterized by recurrent attacks of acute inflammation along with mucocutaneous, ocular, vascular, articular, gastrointestinal, pulmonary, and neurological involvements (Özdemir et al. 2010, Talarico et al. 2020).

Behcet's disease, which typically affects young adults aged 20 to 40 years, is most prevalent in Turkey. Numerous studies from past to present have reported a prevalence rate of 20-420 out of 100,000 person for the disease in Turkey (Alpsoy 2016). It has been reported that early-onset is associated with a poor prognosis and the disease has a more severe course in males (Bang et al. 2001). The goal of the treatment is to relieve symptoms and to control inflammation at an early stage in a way that does not cause permanent damage. Colchicine, azathioprine, steroids and immunosuppressive agents are used for this purpose (Yurdakul et al. 2001).

In addition to physical symptoms, patients with Behcet's disease may develop many mood, thought, and behavioral symptoms such as euphoria, dysphoria, disinhibition, psychomotor agitation or retardation, paranoid attitude, obsession, anxiety, and depressive mood (Siva et al. 2004). Cognitive problems, personality changes, psychosis, disinhibition, or apathy have been reported in patients followed up with a diagnosis of Neuro-Behcet's disease (Öktem-Tanör et al. 1999, Tütüncü et al. 2021).

It has been reported that 48% of patients with Behcet's disease present with psychiatric symptoms, which are associated with steroid use and organic pathology, as well as severe and chronic disease processes. It has been revealed that patients are uncomfortable with their bodies, experience

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difficulty in social adaptation, and have high levels of anxiety (Bagheri et al. 2013). Anxiety disorders have been reported to be the most common mental health condition (35.6%) accompanying Behcet's disease, followed by mood disorders (21.9%) (Dursun et al. 2007). Various studies conducted in our country have reported a depression prevalence of 23% to 66% in patients with Behcet's disease, with lower quality of life compared to the control group (Dursun et al. 2007, Havlucu et al. 2011). It is known that conditions such as pain and sensitivity to pain can lead to emotional stress and sleep disturbances, especially in patients with joint involvement (Goldberg 2010). Symptoms such as oral ulcers, genital ulcers, arthritis, diffuse pain, insomnia, and fatigue play a role in the low quality of life of patients with Behcet's disease (Canpolat and Yurtsever 2011). Behcet's disease reduces the quality of life of patients both because of its systemic involvement and effect on social functionality, leading to decreased interaction of patients with their environment due to restricted activities of daily life (Bernabé et al. 2010, Kırbaş 2017). Blackford et al. (1997) showed the negative effect of oral and genital ulcers on the personal relationships of patients.

Chronic diseases also affect sexuality, which is the whole of thoughts, feelings, and fantasies that can be learned and shaped by age, gender, culture, religious beliefs, social relations, and life-long experiences. It is not possible for individuals with chronic diseases to participate in sexual intercourse as they desire, causing the occurrence of various sexual dysfunctions in men and women (Sungur and Gündüz 2014).

Studies have indicated sexual reluctance, decreased frequency of sexual intercourse, painful sexual intercourse, and erectile dysfunction as the most common sexual problems experienced by patients with Behcet's disease (Özdemir et al. 2001, Talarico et al. 2020, Saur et al. 2022).

A recent review study reported a high frequency of sexual dysfunctions in patients with Behcet's disease, with an association between sexual dysfunctions and depression, emphasizing the small number of studies on sexual functions in this patient group (Talarico et al. 2020). This study set out to test the hypothesis that patients with Behcet's disease would score higher on the Beck Depression Inventory (BDI) and the Beck Anxiety Inventory (BAI) compared to the control group and that sexual dysfunction would be more frequent in patients with Behcet's disease according to DSM-5. The aim of this study was to evaluate patients with Behcet's disease, who were followed up regularly in the Behcet outpatient clinics of the Dermatology and Rheumatology Departments of a university hospital, in terms of anxiety, depression, and sexual dysfunctions, to compare the data with the healthy control group, and to contribute to the literature from our country, where the disease is endemic.

METHODS

The study was conducted by recruiting 50 (29 female and 21 male) patients between the ages of 18-50 who were followed up with a diagnosis of Behcet's disease in the Behcet outpatient clinics of Uludag University Dermatology and Rheumatology Departments between 30 July 2018 and 30 November 2018, who were in remission, had an active sexual life, and agreed to participate in the study. The control group consisted of 50 (28 female and 22 male) volunteers between the ages of 18-50 who were hospital employees or their relatives, did not have a medical or mental illness, and had an active sexual life. Those with diabetes, uncontrolled hypertension, thyroid disease or neurological involvement, postmenopausal individuals, and those in the active phase of Behcet's disease were not included in the study as they could affect sexual functions and psychiatric symptoms.

Each patient and volunteer who agreed to participate in the study were both verbally informed about the purpose of the study and provided with written material (an "Informed Consent Form" approved by the Ethics Committee of Uludag University Faculty of Medicine). The ethics committee approval for the study was obtained on 10 July 2018 with decision number 2018-13/25.

A Sociodemographic Data Form prepared by the researchers was used to collect data on age, sex, marital status, educational level, and income level of the participants, to question the presence of systemic or psychiatric disease and their habits, and to determine the drugs used by patients, disease duration, and the type of involvement of the disease.

The Beck Depression Inventory (BDI), which was developed to determine the level of depression, is a self-rating scale that includes 21 symptom categories. The maximum score is 63, with higher total scores indicating higher severity levels of depression. The Turkish validity and reliability study of BDI was performed by Hisli (1989). The Beck Anxiety Inventory (BAI), which was developed to measure the frequency and severity of anxiety symptoms, is a 21-item likert-type self-rating scale scored between 0 and 3. A high total score indicates a high level of anxiety experienced by the individual. The validity and reliability study of BAI in our country was performed by Ulusoy et al. (1998). The Female Sexual Function Index (FSFI), which was developed to assess sexual functions in women, is a 19-item multidimensional scale that evaluates 6 six domains, including sexual desire, sexual arousal, lubrication, orgasm, satisfaction, and pain/discomfort. An FSFI score below the cut-off point of 26.55 was defined to denote sexual dysfunction. The Turkish validity and reliability studies of FSFI were conducted by Aygin and Aslan (2005). The International Index of Erectile Function (IIEF), which was developed by Rosen et al. (1997), consists of a total of 15 items to assess the relevant domains of male sexual function, including erectile function (six items),

orgasmic function (two items), sexual desire (two items), sexual satisfaction (three items) and general satisfaction (two items) over the last four weeks. IIEF was adapted into Turkish by the Turkish Society of Andrology.

Statistical Analysis

Descriptive statistics of the study were presented as frequency, percentage, mean, standard deviation (SD) and median, minimum (min), maximum (max). In the evaluation of the groups, the t-test and one-way analysis of variance (ANOVA) were used for normally distributed variables and Mann-Whitney U and Kruskal-Wallis tests for non-normally distributed variables. To evaluate the correlation between BDI, BAI, IIEF, and FSFI, Pearson's correlation test was used for normally distributed variables and Spearman's correlation test for non-normally distributed variables. A p-value less than 0.05 was considered statistically significant in the study. The statistical analyses of all data were carried out using SPSS version 24.0 software package.

RESULTS

Sociodemographic Results

The patient and control groups were similar in terms of age, sex, marital status, parental status, smoking, and alcohol use; however, there was a significant difference between the groups in terms of educational and income levels. The educational and income levels of the control group were higher than those of the patient group. While no additional systemic disease was observed in 82% (n=41) of patients with Behcet's disease, 6 (70%) of 9 (18%) patients with systemic disease had hypertension. In the Behcet's disease group, 11 (22%) patients had a diagnosis of anxiety disorder and 8 (16%) had a diagnosis of depression. Of the patients, 72% (n=36) had systemic involvement and 28% had mucocutaneous involvement. The mean duration of Behcet's disease was 9.88±7.0 years, with the shortest disease duration being 1 year and the longest disease duration being 30 years. Table 1 shows the sociodemographic characteristics of the patient and control groups.

Results of Scale Scores and Correlation Analysis

The mean BDI and BAI scores of the patient group were 10.54±6.45 and 28.32±7.02, respectively. The mean BDI and BAI scores of the healthy control group were 7.36±6.13 and 26.78±6.55, respectively. There was a significant difference between the groups in terms of BDI scores (p=0.009), while the BAI scores of the groups were similar (p=0.05). There was no significant correlation between the variables of age, marital status, number of children, educational and income levels, and BDI and BAI scores (p>0.05). Patients with systemic

Table 1. Comparison of Patient and Control Groups in Terms of Sociodemographic Characteristics

Variables	Patient (n=50)	Control (n=50)	χ^2	z	p
Age	38.28 ± 9.21	39.34 ± 7.23		0.228	0.82
Gender			0.041		0.84
Female	29 (%58)	28 (%56)			
Male	21 (%42)	22 (%44)			
Marital Status			0.409		0.52
Married	43 (%86)	46 (%92)			
Single	7 (%14)	4 (%8)			
Number of Children	1.60 ±1.03	1.72 ±1.17		0.398	0.69
Education			28.132		0.00
Elementary	22 (%44)	3 (%6)			
Middle	6 (%12)	4 (%8)			
High	15 (%30)	16 (%32)			
University	7 (%14)	20 (%40)			
Master and doctorate		7 (%14)			
Employment Status			39.897		.00
Officials	3 (%6)	28 (%56)			
Employee	22 (%44)	20 (%40)			
Retired	2 (%4)				
Unemployed	23 (%46)	2 (%4)			
Income			13.801		.00
Low	20 (%40)	5 (%10)			
Medium	27 (%54)	35 (%70)			
High	3 (%6)	10 (%20)			
Habits			2.148		0.34
No	38 (%76)	34 (%68)			
Smoking	11 (%22)	16 (%32)			
Smoking+Alcohol	1 (%2)				

X±SD: Mean ± Standard Deviation, Z: Mann Whitney U Test, χ^2 Chi-square (categorical variables)

Table 2. Total and Mean Domain Subgroup Scores of FSFI of Patient and Control Groups

	Patient (n=29)			Control (n=28)			
	min	**max**	***Mean ± *SD**	**min**	**max**	***Mean± *SD**	**p**
Total	12.40	25.00	20.00±2.99	12.30	30.10	22.22±3.41	**0.008**
Desire	1.20	4.80	2.97±0.85	2.40	6.00	3.60±0.93	**0.047**
Arousal	1.20	5.40	3.21±0.93	1.50	6.00	4.29±1.20	**0.001**
Lubrication	2.70	4.80	3.43±0.60	1.20	5.10	3.61±0.79	0.106
Orgasm	2.80	4.80	3.51±0.52	1.20	5.20	3.74±0.75	0.050
Satisfaction	1.20	6.00	4.37±1.10	2.40	6.00	4.84±0.88	0.178
Pain	1.20	4.80	2.48±1.03	1.20	4.40	2.12±1.01	0.211

X±SD: Mean ± Standard Deviation, FSFI: Female Sexual Function Index

Table 3. Comparison of Mean FSFI Total Scores of Patient and Control Groups in Terms of BDI, BAI, and Sociodemographic Variables

Variables	**Patient**			**Control**		
	χ^2	**z**	**p**	χ^2	**z**	**p**
BDI			0.468			**0.034**
BAI			0.848			**0.005**
Age			0.068			0.883
Marital Status				0.863		0.353
Number of Children			0.242			0.991
Education	8.675		**0.034**	8.341		0.080
Employment Status	1.008		0.604	5.441		0.066
Income	2.824		0.093	2.248		0.325
Habits	3.137		0.077	0.020		0.889
Psychiatric Diagnosis		2.172	**0.030**			
Form of involvement of Behcet's disease		1.034	0.301			
Duration of Behcet's Disease			0.539			

Z: Mann Whitney U test (two categorical variables), χ^2 : Kruskal Wallis Test (Three and more categorical variables)
FSFI: Female Sexual Function Index, BDI: Beck Depression Inventory, BAI: Beck Anxiety Inventory

involvement and those with mucocutaneous involvement were similar in terms of BDI and BAI scores (p>0.05).

The mean FSFI score of the patient group was significantly lower than that of the control group (p=0.008). Given the domain subgroups of FSFI, the desire and arousal scores were lower in the patient group (p=0.047, p=0.001, respectively). Table 2 shows the total and mean domain subgroup scores of FSFI of the patient and control groups.

A significant difference was found between the FSFI scores of Behcet's disease patients with and without a psychiatric diagnosis (p=0.03). There was a significant correlation between the pain levels during sexual intercourse and age in the female patient group (p=0.045). There was also a significant correlation between the educational level and the FSFI scores of the female patient group (p=0.034). Table 3 shows the correlation between BDI, BAI, and sociodemographic characteristics, and the mean FSFI total scores of the patient and control groups.

According to the IIEF scores, 48% (n=10) of the male patients had erectile dysfunction. The mean IIEF scores of the patient and control groups were 23.14±6.98 and 28.63±1.67, respectively. The mean IIEF score of the patient group was significantly lower than that of the control group (p=0.003). The total and mean domain subgroup scores of IIEF of the patient and control groups are shown in Table 4.

A significant correlation was found between the erectile function, orgasmic function, sexual desire, sexual satisfaction, and general satisfaction domain subgroup scores of the patient group and the BDI score (p=0.002, p=0.004, p=0.028, p=0.023, p=0.028, respectively). The IIEF overall satisfaction sub-score of the patient group was found to be significantly lower than that of the control group (p=0.011). The evaluation of the total and domain subgroup scores of IIEF in terms of sociodemographic characteristics revealed no significant difference between the patient and control groups (p>0.05).

Table 4. Total and Mean Domain Subgroup Scores of IIEF of Patient and Control Groups

	Patient (n=21)			Control (n=22)			
	min	**max**	***Mean± *SD**	**min**	**max**	***Mean± *SD**	**p**
Erectile function	10.00	30.00	23.14±6.98	23.00	30.00	28.63±1.67	0.003
Orgasmic function	0	38.00	9.19±7.31	8.00	10.00	9.68±0.64	0.068
Sexual desire	4.00	10.00	7.19±1.43	6.00	10.00	7.63±1.43	0.441
Sexual satisfaction	0	37.00	9.80±7.70	9.00	14.00	11.63±1.49	0.055
General satisfaction	2	10.00	7.09±2.89	7.00	10.00	9.09±1.01	0.011

X±SD: Mean ± Standard Deviation, IIEF: International Index of Erectile Function

Table 5. Comparison of IIEF Scores of Patient and Control Groups by BDI and BAI

	Group	**BDI p**	**BAI p**
Erectile function	Patient	**0.002**	**0.045**
	Control	0.741	0.374
Orgasmic function	Patient	**0.004**	0.097
	Control	0.783	0.391
Sexual desire	Patient	**0.028**	0.113
	Control	0.891	0.781
Sexual satisfaction	Patient	**0.023**	0.084
	Control	0.133	0.052
General satisfaction	Patient	**0.028**	0.019
	Control	0.470	0.156

IIEF: International Index of Erectile Function, BDI: Beck Depression Inventory, BAI: Beck Anxiety Inventory

DISCUSSION

This study evaluated patients with Behcet's disease in terms of anxiety, depression, and sexual dysfunctions and compared their data with those of the healthy control group. The results revealed that 3 (6%) of 11 (22%) patients in the patient group were followed up with a diagnosis of anxiety disorder and 8 (16%) with a diagnosis of depression. Considering the publications investigating the psychiatric symptoms of patients with Behcet's disease, the frequency of depression in patients ranges from 23% to 66%. Patients with Behcet's disease score higher on depression and anxiety scales compared to the control group, showing that their quality of life is negatively affected (Havlucu et al. 2011, Dursun et al. 2007, Karlıdağ et al. 2003, Uğuz et al. 2006, Atay and Erturan 2020). A recent review also showed high levels of depression and anxiety in patients with Behcet's disease (Fisher 2020). Significantly higher BDI scores of the patient group in this study is consistent with the results of publications. However, in this study, the educational and income levels of the control group were found to be higher than those of the patient group. Since depression and anxiety are known to be associated with low socioeconomic status (Hajebi et al. 2018, Xue et al. 2021), it is believed that the differences in educational and income levels between the groups may affect the results.

Numerous studies have reported that patients with systemic involvement have higher depression and anxiety levels than those with mucocutaneous involvement. It has been stated that systemic involvement is associated with hospitalization and heavy drug treatments, vision loss, joint pain, fatigue and physical restriction, a decrease in functionality and loss of operating power, which result in an increase in depression and anxiety levels (Tanrıverdi et al. 2003, Dursun et al. 2007, Havlucu et al. 2011, Khabbazi et al. 2021). Unlike previous studies, this study demonstrated that patients with systemic involvement and patients with only mucocutaneous involvement were similar in terms of anxiety and depression levels. This result may be due to the small sample size, which is one of the limitations of the study.

Chronic systemic diseases are also known to negatively affect sexual functions (Wright et al. 2021, Sansone et al. 2022). A recent review notes that there is little data on the frequency and characteristics of sexual dysfunction in patients with Behcet's disease. However, the number of studies investigating sexual functions in patients with Behcet's disease is increasing (Talarico et al. 2020). On the other hand, the questioning mental complaints and sexual functions, reviewing the quality of life, and providing psychotherapeutic support, unfortunately, remain in the background in Behcet's disease, as in other organic diseases. Especially in cultures where it is not easy and is considered shameful and prohibited to talk about sexuality, questioning sexual functions is avoided or ignored, even for physicians. This is assumed to be due

to reasons such as regarding talking about sexuality as a shame and sin in our culture, the high prevalence of shame, hesitation, and concealment behaviors, and the insufficient level of sexual knowledge (Kayır 2009, Ceylan et al. 2020).

Erturan et al. (2014) found significantly higher levels of sexual dysfunction in patients with Behcet's disease, according to FSFI. Similarly, the results of this study showed that the mean FSFI score of the patient group was lower than that of the control group. Given the domain subgroups of FSFI, the desire and arousal scores were significantly lower in the patient group. Contrary to the study of Erturan et al. (2014), the result of no difference between the two groups in terms of lubrication in this study is believed to be related to non-inclusion of postmenopausal women and older women in the study. Since postmenopausal women may experience vaginal atrophy and pain secondary to inadequate lubrication, women who have gone through natural or surgical menopause were not included in this study (Ortaylı 2001).

Furthermore, the results of this study revealed an association between the variables of education level and age and FSFI scores in the patient group. The result of a significant correlation between the pain levels during sexual intercourse and age in the female patient group is consistent with the results of studies showing an increase in the frequency of sexual dysfunction with increasing age (Günaydın et al. 2019).

Considering the publications, there are few studies investigating sexual functions in male patients with Behcet's disease (Talarico et al. 2020). Studies have reported a high frequency of erectile dysfunction in patients with neurological involvement, but data on erectile dysfunction in patients without neurological involvement are limited (Aksu et al. 2000, Taylan and Birlik 2018, Sorgun et al. 2020). Erdemir et al. (2010) found a 7-times higher frequency of erectile dysfunction in patients with Behcet's disease. However, the fact that nearly half of the patients were smokers and a significant portion of them had systemic diseases such as hypertension, diabetes, hyperlipidemia, and heart disease in the same study might have affected the results (Erdemir et al. 2010). A recent study found an erectile dysfunction frequency of 55% in patients with Behcet's disease (Saur et al. 2022). Consistent with publications, erectile dysfunction was determined in 48% (n=10) of male patients with Behcet's disease in this study, according to IIEF scores.

Many psychological, neurological, vascular, anatomical, and hormonal factors may play a role in the etiology of erectile dysfunction (Kendirci and Kadıoğlu 2001). In the light of both this study and previous studies, we can state that the risk of erectile dysfunction increases with Behcet's disease, as with many diseases involving arteries and veins. However, the significant correlation between IIEF scores and BDI and BAI scores in the patient group is consistent with the results of studies showing that mental symptoms in patients with Behcet's disease also have an effect on sexual dysfunction (Talarico et al. 2020).

This study has limitations in several aspects. The sample size of the study is small, the majority of the sample comprised of married individuals, an adequate number of single individuals with active sexual life could not be reached, only one interview was conducted with patients, levels of prolactin, testosterone, and thyroid hormone, which are known to affect sexual functions, were not examined, and disease severity was not evaluated in the patient group. However, the strengths of the study are the presence of a control group, the exclusion of those with diabetes, uncontrolled hypertension, or thyroid disease, those with neurological involvement, those in the active phase of Behcet's disease, and postmenopausal women.

In Turkey, one of the regions with the highest prevalence of Behcet's disease, it should be kept in mind that Behcet's disease is a chronic disorder characterized by attacks of acute inflammations and remissions, and can present with involvement of various tissues and organs, as well as psychiatric symptoms. Moreover, it can accompany chronic diseases and adversely affect quality of life and sexual functions. It should not be overlooked that a systematic approach to patients, including psychiatric evaluation, can be beneficial. In conclusion, there is a need for multicentered studies with a large sample to investigate psychiatric symptoms and sexual dysfunctions in Behcet's disease in our country, where the disease is endemic.

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