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RESEARCH ARTICLE

Level of selective serotonin reuptake inhibitor-related sexual dysfunction in men and women

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ABSTRACT

Objective: Up to 80% of selective serotonin reuptake inhibitor (SSRI) users experience a kind of sexual dysfunction related to antidepressant treatment, which may cause discontinuation of the medication. This study aims to determine the level of reported sexual dysfunction of SSRI users and evaluate factors related to sexual dysfunction.

Method: Sexual dysfunction, demographic variables, and depression level of 40 men and 40 women were evaluated by demographic data form, Beck Depression Inventory, and Psychotropic-Related Sexual Dysfunction Questionnaire.

Results: According to the results of this study, there was no significant difference in the level of psychotropic-related sexual dysfunction for genders and marital status ($p>0.05$). There was no correlation level of sexual dysfunction and age or depression levels ($p>0.05$).

Conclusion: Both men and women (young or older and single or married) may experience sexual dysfunction-related SSRIs. All SSRI users should be questioned and monitored for sexual dysfunction.

Keywords: Depression, selective serotonin reuptake inhibitors, sexual dysfunctions

INTRODUCTION

Selective serotonin reuptake inhibitors (SSRIs) are commonly prescribed for managing different disorders, including depression (1). It has been reported that 1 in 8 people have utilized one of the SSRIs in the past 10 years. SSRIs replaced older antidepressants with similar efficacy, simple titration manner, better tolerability, and safer overdose effects (2).

Between 50% and 70% of people with depression have sexual dysfunction. Sometimes, sexual dysfunction itself can lead to depression. Common sexual dysfunction related to depression is low sex drive and disorders of arousal, orgasm, and ejaculation (3,4).

Many people experience a kind of sexual dysfunction related to antidepressants (5). SSRI-induced sexual dysfunction may be up to 80% (2). Sexual dysfunctions are important as they are the leading cause of medical treatment nonadherence and one of the most underreported adverse effects (4). Sexual side effects of SSRIs are related to patients' quality of life. Sexual dysfunction negatively affects the quality of life, self-esteem, mood, and relationships with partners. Sexual functioning may also affect nonsexual aspects of a relationship, and people in sexually inactive marriages have lower marital happiness (6,7).

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Sexual dysfunction with antidepressants can affect all phases of sexual activity, including desire, arousal, and orgasm, in both men and women. Women taking antidepressants report problems with sexual desire, sexual arousal, and orgasm. Men report issues of desire and orgasm especially. Sexual dysfunction may persist even after the discontinuation of SSRIs (1,4,8). In a study with 1022 participants, men have a higher incidence of sexual dysfunction (62.4%) than women (56.9%). But women experienced a higher level of decreased libido, delayed orgasm, and anorgasmia (9).

The complex mechanism of sexual dysfunction is not fully understood. Serotonin may be the primary neurotransmitter that has adverse effects on sexual function. The activation of the postsynaptic serotonin (5-HT) 2A receptor is suggested to be a significant contributor to antidepressant-related sexual dysfunction (4). Paroxetine showed a higher risk for sexual dysfunction compared with other SSRIs (5,8,9).

SSRIs and serotonin noradrenaline reuptake inhibitors with strong serotonergic activity have a higher risk of sexual dysfunction than other antidepressants, such as tricyclic antidepressants (except clomipramine), monoamine oxidase inhibitors, vortioxetine, mirtazapine, and bupropion (2–4).

Probably, the report of sexual dysfunction is lower than in real situations. Because patients and clinicians may be attributed sexual dysfunction associated with a drug to other reasons, such as linking these effects to relationship problems related to psychopathology rather than the drug itself. However, spontaneous reporting seems more difficult than expressing it after questioning because reporting sexual side effects may be considered shameful (2,6). Another study, which included 344 patients being treated with SSRIs, found a significantly higher incidence of sexual dysfunction when physicians asked the patients direct questions (58%) than patients spontaneously reporting sexual dysfunction (10). Therefore, it is essential that clinicians actively monitor for sexual dysfunction (4).

This study aims to determine the level of reported sexual dysfunction and the relationship between sexual dysfunction level, gender, age, depression level, and type of SSRI used in people using SSRIs. The main hypothesis of this study is that according to the observations, there is no difference between the level of SSRI-related sexual dysfunction between women and men. Also, there is no difference between the level of SSRI-related sexual dysfunction between single and married people. The second hypothesis is that there is no relationship between age and the level of SSRI-related sexual dysfunction.

METHOD

The methods of this study continued in accordance with the Helsinki Declaration. The study protocol was approved by the Alanya Alaaddin Keykubat University Clinical Research Ethical Committee (date: 05.10.2022, number: 09-01). Informed consent was obtained from all participants.

Participants

The nonrandom convenience sampling method has been used due to time benefits. Forty men and 40 women included in the study with a diagnosis of depression and were using SSRIs, applied to the Psychiatry Outpatient Clinic of a hospital in Turkiye between October 2021 and November 2021, were still using SSRIs monotherapy for at least 1 month and volunteered to participate in research. The 80 people in total were informed about the study, and they filled out the demographic form, Beck Depression Inventory (BDI), and Psychotropic-Related Sexual Dysfunction Questionnaire (PRSexDQ).

Psychometric Measurements Tools

Demographic Data Form

The self-report form was developed by researchers for this study, which includes questions about the age, gender, education, and life histories of the participants.

Beck Depression Inventory

The scale is a 21-item self-report questionnaire developed to measure symptoms of depression. The participants rate symptom severity in 21 items on a 4-point Likert scale. Higher scores indicate an increase in depressive mood (11). Turkish validity and reliability study of the scale was conducted by Hisli (12).

Psychotropic-Related Sexual Dysfunction Questionnaire

The 7-item scale is developed to screen for sexual dysfunction due to medication. It is administered directly through a clinical interview. Items 1 and 2 assess whether there was any change in sexual activity. The other five items rate the intensity or frequency of changes in sexual function by scoring from 0 (less intensity or probable frequency) to 3 (more intensity or probable frequency). Items 3–7: decreased libido, delay in orgasm-ejaculation, lack of orgasm-ejaculation, erectile dysfunction in men, impaired vaginal lubrication in women, and patient's sexual dysfunction tolerability are evaluated by scoring from 0 (less intensity or possible frequency) to

Table 1: Relationship between the answers given to the first two questions, gender, marital status, and current medication

	Positive answers for the first question of PRSexDQ		Differences for the first question of PRSexDQ	Positive answers for the second question of PRSexDQ		Differences for the second question of PRSexDQ
	n	%		n	%	
Gender			0.491[a]			0.245[a]
Male	23	57.5		17	42.5	
Female	26	60		12	30	
Marital status			0.341[a]			0.571[a]
Single	7	50		6	42.9	
Married	42	63.6		23	34.8	
SSRI			0.449[b]			0.319[b]
Fluoxetine	9	56.3		16	20	
Sertraline	15	53.6		28	35	
Paroxetine	4	50		10	12.5	
Citalopram	7	70		10	12.5	
Escitalopram	14	77.8		18	22.5	

PRSexDQ: Psychotropic-Related Sexual Dysfunction Questionnaire; SSRI: Selective serotonin reuptake inhibitor; a: Chi-squared test; b: Fisher's exact test.

3 (more intensity or possible frequency). The final scale total score can be obtained by summing the scores of items 3–7 (13). It was chosen for this study because it is short, easily applicable compared with similar scales, and focuses only on sexual side effects. It was adapted to Turkish by Kurt Kaya et al. (14).

Statistical Analysis

The data were statistically analyzed by Jamovi (version 2.0.0.0). The demographic and clinical characteristics were presented descriptively using the mean and standard deviation for continuous variables and the frequency and percentage for categorical variables. The normal distribution was evaluated using a histogram and the Shapiro–Wilk test. Relations among continuous variables were examined by Spearman's rank order correlation analysis. Differences between groups were evaluated using the Mann–Whitney U test and the Kruskal–Wallis test.

RESULTS

Descriptive Statistics for Demographic and Clinical Data

The ages of the participants ranged from 20 to 59 years (mean=36.0, SD=9.54). There is no significant difference between the mean age of men and women on the independent samples t-test (mean=36.5, SD=10.4; mean=35.4, SD=8.63; p=0.577). Of the participants, 14 (17.5%) were single, and 66 (82.5%) were married. There is no difference in marital status between women and men in the Chi-squared test (p=0.236). Among the participants, 16 were using fluoxetine (20%), 28 were using sertraline (35%), 8 (10%) were using paroxetine, 10 (12.5%) were using citalopram, and 18 (22.5%) were using escitalopram.

Statistics of the First Two Questions of PRSexDQ

Forty-nine (61.3%) participants answered positively to the first question (Have you observed any type of change in your sexual activity since you began taking the treatment?). Twenty-nine (36.3%) participants spontaneously reported an alteration not necessary to expressly question to discover the sexual dysfunction. The relationship between the answers given to the first two questions, gender, marital status, and current medication, is given in Table 1. There was no significant difference in mean ages for both the first and second questions of PRSexDQ with the Mann–Whitney U test (p=0.072, p=0.477). There was a significant difference in mean scores for BDI with the Mann–Whitney U test for both the first and second questions of PRSexDQ (p<0.001). Those who answered positively to both questions had lower BDI scores. The mean BDI score of those who answered positively to the first question was 5.41 (SD=4.33), and the average of those who answered negatively was 15.6 (SD=8.51). The mean BDI score of those who answered positively to the second question was 5.51 (SD=4.00), and the average of those who answered negatively was 11.7 (SD=8.74).

Table 2: Demographic variables, clinical variables, differences for PRSexDQ among variables

			Differences for PRSexDQ (p)
Age, Mean (median)	36.0 (34.5)		0.100[a]
Gender, n (%)	Male	40 (50%)	0.308[b]
	Female	40 (50%)	
Marital status, n (%)	Single	14 (17.5%)	0.890[b]
	Married	66 (82.5%)	
SSRI, n (%)	Fluoxetine	16 (20%)	0.319[c]
	Sertraline	28 (35%)	
	Paroxetine	10 (12.5%)	
	Citalopram	10 (12.5%)	
	Escitalopram	18 (22.5%)	
BDI Mean (median, cut point for the 25th percentile, cut point for the 75th percentile, minimum value, maximum value)	9.38 (7, 3.75, 7, 0, 38)		**0.004**[a]
PRSexDQ Mean (median, put point for the 25th percentile, cut point for the 75th percentile, minimum value, maximum value)	6.09 (5, 2, 10, 0, 15)		

BDI: Beck Depression Inventory; SSRI: Selective serotonin reuptake inhibitor; PRSexDQ: Psychotropic-Related Sexual Dysfunction Questionnaire; a: Spearman's rank order correlation; b: Mann–Whitney U test; c: Kruskal–Wallis test.

Comparison of Groups for Sexual Dysfunction Levels

For PRSexDQ, age, and BDI, the Shapiro–Wilk test and histogram analysis showed no normal distribution ($p<0.05$). Therefore, the Mann–Whitney U test was conducted to compare the sexual dysfunction levels measured by PRSexDQ between males and females and between married and single. There was no significant difference in scores of PRSexDQ for genders (men: mean=5.45, median=5; women: mean=6.72, SD=6; p=0.308). Also, there was no significant difference in scores of PRSexDQ for marital status (married: mean=6.12, median=5; single: mean=5.93, median=4.5; p=0.934). Due to the result of the Shapiro–Wilk test (p=0.003) and the low sample size in the groups, a Kruskal–Wallis test was conducted to compare the sexual dysfunction levels measured via PRSexDQ for different SSRIs. There was no significant difference in scores of PRSexDQ between groups (p=0.319). There was no significant relationship between scores of PRSexDQ and age (p=0.100). There was a significant relationship between scores of PRSexDQ and BDI (p=0.004) (Table 2).

DISCUSSION

According to the results of this study, there was no significant difference in spontaneous self-reporting and the level of psychotropic-related sexual dysfunction for genders and marital status. In a study that included more than one thousand participants, which measured sexual problems with PRSexDQ, it was stated that men had more sexual problems than women. However, it has not been determined whether this difference is statistically significant (9). In another study, gender was not a factor that predicted the presence or level of sexual dysfunction (15,16). According to this result, both men and women should be evaluated equally regarding sexual adverse effects without stigmatizing ideas such as "sexual side effects are men's problems" or "women's problems of sexual experience are not that important." Sexual dysfunction has been underrecognized and underreported among women (16). Still, antidepressant-related sexual dysfunction in women has less impact on tolerability and is less self-reported (15). In this study, the frequency of reporting medication-related sexual side effects stated by the first two questions of PrSexDQ was between women and men. Although levels of psychotropic-related sexual dysfunction in women and men are similar, they may be less reported in women because of some methodological limitations of previous studies. In this study, reporting these similar results for both the measured and reported levels of psychotropic-related sexual dysfunction may indicate the adequacy of the study methodology and the measuring power of PrSexDQ. Careful monitoring of a side effect that may impair medical treatment adherence can be

recommended in both genders. In addition, differences in sexual physiology and, therefore, sexual problems between gender also make it difficult to compare. Both women and men have different sexual experiences and sexual physiology.

Regarding marital status, single people may ignore sexual side effects compared with married people. Both single patients and clinicians may find it shameful to talk about sexual dysfunction. Also, clinicians may think that single people "already" do not have sexual dysfunction because they will not have apparent partners. But, the results of this study also show that single people also experience sexual problems, and their level of sexual dysfunction may not differ from married ones. In addition, this study's results showed that the frequency of spontaneous reporting of psychotropic-related sexual dysfunction in single people was not different from married people when appropriate tools were used. Accordingly, it may be necessary to question and follow up on sexual adverse effects in single people not to impair their quality of life and decrease medical treatment compliance.

There was no significant difference in scores of the level of sexual dysfunction between different kinds of SSRIs. It can be hard to interpret significant variance where the numbers are down to 10 participants for an SSRI in the sample of this study. In previous studies, there were no differences between SSRIs except paroxetine, but the researchers found that paroxetine was related to increased sexual dysfunction, probably due to its higher potent serotonergic effects (5,8). Studies with larger samples may be needed to compare the sexual side effect levels among different SSRIs.

There was no correlation between age and level of sexual dysfunction. It has been reported that the level of sexual dysfunction increases with older age (9,15,17). This study has no results like previous studies. The reason for no relation between age and level of sexual dysfunction in this study may be the relatively low sample size. Another reason is that the age range is narrower and less normally distributed compared with previous studies (9,15). Sexual dysfunction and medical problems that can occur more with age are related (17). The evaluation of this situation in this study may have led to the calculation of the relationship between age and level of psychotropic-related sexual dysfunction. There is a need for further studies that will investigate the age relationship between sexual dysfunction and age, especially in the context of Turkiye. Perhaps, it is necessary to add that those of higher age are likely to experience sexual side effects, as in young people, which may be related to separate clinical problems other than the adverse effects of SSRI treatment. Therefore, adverse sexual effects should be considered during antidepressant treatment for all ages.

There was a correlation between the level of sexual dysfunction and depression levels measured by BDI scores. Depression has a close relationship with sexual problems. Maybe more than 50% of people with depression have sexual problems. Findings suggest a bidirectional association between depression and sexual dysfunction. It means that sometimes, sexual problems can lead to depression, and sometimes, depression can lead to sexual problems (3,4,9,16). Accurately measuring the incidence of psychotropic-related sexual dysfunction (including both worsening of preexisting problems and the development of new sexual difficulties in previously uneventful patients) during antidepressant treatment seems difficult due to the interplay between depression and sexual dysfunction. An international study of the prevalence of sexual dysfunction in depressed patients treated with an SSRI or SNRI (explaining both self-reported sexual problems prior to treatment initiation and potential adverse effects of coadministered medications) revealed that 27%–65% of female patients and 26%–57% of male patients reported either worsening of preexisting problems or the emergence of new sexual problems during the first weeks of treatment (18). In this study, depressed people tended to spontaneously report fewer sexual side effects, consistent with previous studies. Relying on spontaneous reports of sexual adverse events in depressed patients significantly underestimates sexual problems in depressed patients (19). This may be related to the hopelessness and social isolation accompanying depression. People with these and similar symptoms may express their symptoms about sexual dysfunction less. The decrease in spontaneous reporting of psychotropic-related sexual dysfunction also indicates the need for detailed observation of sexual side effects and screening scales in depressed people using psychotropic drugs.

Limitations

The main limitation of this study is a relatively low sample size. Maybe some significant results will be shown by further statistical analyses with a larger sample size. The lack of a control group can also be noted as a limitation. Another limitation is the

possible relation between doses of SSRIs and sexual dysfunction cannot be analyzed because of a lack of data. Not examining the levels of sexual dysfunction before SSRI treatment is also a limitation. Lack of data about the duration of the current drug treatment, previous treatment history, and the duration of the depression diagnosis are other limitations of this study. The cross-sectional nature of the study did not reveal a change in the direction of increase or decrease in sexual side effects.

CONCLUSION

Considering the prevalence of depression and SSRI use, SSRI-related sexual dysfunction is almost a public health problem. Sexual dysfunction adversely impacts self-esteem, quality of life, mood, and quality of relationships with sexual partners (7). One of the most important reasons for highlighting sexual dysfunction in people using SSRIs is that it reduces drug compliance. Both women and men stop treatment because they think they have a sexual adverse effect (2). People who experience sexual adverse effects from the medication state that they do not talk about them with their doctors (4). The patients avoid talking about their sexual problems, and their questioning is not adequately questioned by clinicians. It may be important to emphasize the necessity of using a scale that questions the psychotropic-related sexual dysfunction by physicians in their routine practice. For this very reason, sexual dysfunction should be questioned in patients who use drugs with frequent sexual side effects, such as SSRIs, and should be followed up during the treatment process. This study is one of the few studies examining SSRI-related sexual dysfunction in Turkiye. It can be said that the data obtained can contribute to the literature in this context. Future studies should investigate the frequency of sexual dysfunction related to SSRI use in Turkiye.

Contribution Categories		**Author Initials**
Category 1	Concept/Design	H.S.B., T.K.
	Data acquisition	H.S.B., T.K.
	Data analysis/Interpretation	H.S.B., T.K.
Category 2	Drafting manuscript	H.S.B., T.K.
	Critical revision of manuscript	H.S.B., T.K.
Category 3	Final approval and accountability	H.S.B., T.K.
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