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Introduction

Obsessive–Compulsive Disorder (OCD) is characterized by obsessions and compulsions. OCD has been believed to be one of the most common psychiatric disorders, with an estimated lifetime prevalence of approximately 2% [1]. Sexual dysfunctions (SD) are characterized by psycho–physiological changes associated with the sexual response cycle in men and women [2]. Sexual response cycle in OCD patients can

Research Article

Prevalence of sexual dysfunction in a group of Obsessive-Compulsive Disorder (OCD) patients in Iran

Abstract

Objective: The main goal of this research is the assessment of sexual dysfunction in a group of OCD patients in Iran.

Method: The participants were 36 women and 20 men (between 18 to 50 years old) who suffered from OCD based on both psychiatric interview and DSM-IV questionnaire (SCID). They were referred to Roozbeh Psychiatric Hospital and 3 private clinics in Tehran from 2011 to 2013. The following questionnaires were filled in this descriptive cross-sectional study: FSFI, IIEF, MOCI, OCI-R and a demographic questionnaire.

Results: Sexual dysfunction is reported in 80.6% of female and 25% of male OCD patients. The percentage of disorders according to all subscales of FSFI, consisting of sexual desire, sexual arousal, lubrication, orgasm, satisfaction and sexual pain, were 50%, 58.3%, 36.1%, 44.4%, 41.7% and 52.8%, respectively. Based on the IIEF subscales, another questionnaire, the frequency of sexual desire, erectile disorder, orgasmic disorder and sexual dissatisfaction were 10%, 20%, 25% and 40%, respectively. Moreover, a statistically significant correlation was found between the total score of OCI-R and erectile and satisfaction subscales of IIEF. In addition, the score of washing in OCI-R and sexual satisfaction in IIEF were significantly correlated. According to the findings of this research, there is a relation between sexual satisfaction and OCD.

Conclusion: These findings suggest that certain areas of sexual functioning may be impacted by OCD symptomatology and may in turn have a greater negative impact on quality of life. Therefore the assessment of sexual dysfunction in all OCD patients is suggested.

be affected separately or diffusively in all phases (desire, excitement and orgasm) [3].

Several classical studies report high percentages of sexual dissatisfaction and sexual dysfunction in OCD (54%–73%) [4]. In an interesting study, Kendurkar and Kaur compared sexual dysfunction in drug free outpatients suffering from three different mental disorders: OCD, Major Depressive Disorder (MDD) and Generalized Anxiety Disorder (GAD), as well as in control groups. They found levels of sexual dysfunction in 76% of MDD patients, 64% of GAD patients, 50% of OCD patients and 30% of healthy controls, and orgasmic dysfunction was the most frequently reported complaint in OCD (but comparable with that found in women with GAD and MDD) [5]. Moreover, Van Minnen and Kampman [6], found that 57% of the females with OCD and 24% of the females with panic disorder reported that their anxiety symptoms negatively affected their sexual functioning. In this study, sexual satisfaction was found to be negatively correlated to anxiety. Both women with OCD and

their husbands reported lower levels of sexual satisfaction than controls [6]. In an earlier study, Warwick & Salkovskies [7] described two men whose obsessive-compulsive symptoms included intrusive sexual thoughts accompanied by penile erection [7].

However, it seems that relationship between sexual dysfunction and OCD is bidirectional and complex and the casual path is not clear [8]. It has been suggested that Sexual Dysfunction (SD) and OCD may have a common casual pathway. More vulnerability to experience anxiety could play a crucial role in the pathogenesis and maintenance of SD. Anxiety based on behavioral conditioning model has also been considered as an important factor in the etiology of OCD [9].

As has been reported in the literature, some specific symptoms (e.g., obsessions related to contamination, religion, or sexuality) can interfere with sexual function [10]. Avoidance as a common problem in contamination subtype of OCD and disgust which has been described as a central emotion in OCD may induce sexual dysfunction [11]. Additionally, sexual dysfunction in OCD patients may be a result of doubting and checking that is relatively common in these patients [12]. High comorbidity of OCD with depression [13], sexual side effects of pharmacotherapy (like SSRI) in OCD and sexual obsessions are other main influencing factors in this issue [14].

Moreover, difficulties in interpersonal relationships are often associated with OCD [5]. Significant marital problems and distress have been reported in OCD patients [15]. According to Freund and Steketee, many patients do not have a partner (47%) or have not had sexual intercourse for years. Besides social skill deficits, other reasons have been proposed to be involved in trouble establishing and maintaining relationships for OCD patients [5] and sexual dissatisfaction probably has an important role in this regard. Based on an interesting study, when couples report low sexual satisfaction, it contributes to 50%-70% of their overall satisfaction [16].

In general, we may conclude that sexual dysfunction is prevalent among psychiatric patients and it may be related to both the psychopathology and the pharmacotherapy. Despite of the high prevalence of sexual dysfunction in OCD patients and its importance on quality of life and marital satisfaction, most sufferers do not seek help either because of feeling of embarrassment or lack of knowledge about the problem. Awareness of the prevalence and hypothesized mechanisms of sexual dysfunctions in psychiatric patients would improve the attitude of the health care providers towards sexual difficulties in those patients and result in increased compliance with treatment. For the purpose of providing answers to some of these questions and problems, this study was undertaken to assess sexual dysfunction in Iranian OCD patients. This is a study for the first time in our country.

Methods

Subjects: The study sample consists of 56 (36 female, 20 male) married OCD patients between 18 and 50 years old who were referred to the outpatient clinic of Roozbeh Psychiatric Hospital and 3 private clinics in Tehran from 2011 to 2013. OCD

was diagnosed in all patients according to both interviews by a psychiatrist and semi structural interview based on DSM-IV (SCID) performed by a clinical psychologist. Patients who were on pharmacotherapy were excluded in this research (all patients had been off psychotropic medications for at least 3 months before the interview). Other exclusion criteria included: substance dependency, psychosis, antisocial and borderline personality disorder, a serious medical condition, any suicidal risk, pregnancy and breast feeding (as mentioned in the interview session).

Written informed consent was obtained from all participants. This research was confirmed by the Research Ethic Committee of Tehran University of Medical Sciences. All patients received a small gift after completing the questionnaires. Sample size calculation was performed with the aim of the assessment of any type of sexual function at about 50% with 10% acceptable difference and 5% error. The estimated sample size was about 100, but because of limited number of patients, conveniently all patients satisfying inclusion criteria of the study have been enrolled.

Assessments: The following questionnaires were completed by all participants. All questionnaires used in this study have been assessed regarding that validity and reliability and have been adapted to Persian language and Iranian culture based on references mentioned for each questionnaire:

Demographic and clinical questionnaires: All demographic data, relevant information regarding sexual function and OCD (such as age of onset and duration of symptoms) and history of medical conditions which could affect on sexual function were asked in these questionnaires.

Female Sexual Function Index (FSFI): Is one of the tools used to assess female sexual function [17] It has 6 subscales including sexual desire, sexual arousal, vaginal lubrication, orgasm, sexual pain, sexual satisfaction and finally a total score can be obtained. Internal consistency of FSFI was satisfactory ($\alpha = 0.70$) [18].

International Index of Erectile Function (IIEF): Is one of the tools used to assess male sexual function [19]. It evaluates 5 sexual domains including desire, erection, orgasm, satisfaction and overall satisfaction. IIEF has been used in several studies in Iran ($\alpha = 0.70$) [20].

Maudsley Obsessional-Compulsive Inventory (MOCI): Is a 30-item true-false questionnaire for assessment of obsessive and compulsive symptoms, developed by Hodgson and Ranchman [21]. It has five scales including total, checking, washing, slowness-repetition and doubting-conscientious. This test has been used in some of the previous Iranian researches done in Iran [22,23].

Obsessive-Compulsive Inventory-Revised (OCI-R) Is a self-report 18-item questionnaire for assessment of obsessive and compulsive symptoms [24]. It was shown to have an excellent internal consistency ($\alpha = 0.77-0.88$) and test-retest reliability ($r = 0.62-0.76$) [25].

Statistical analysis

Numeric and categorical variables are described by mean, standard deviation and percentage, respectively. Association between numeric variables has been assessed by correlation coefficient. Association between numeric variables and categorical variables has been assessed by independent samples t-test. Normality of distribution of numeric variables in different subgroups of categorical variables has been checked by Kolmogorov-Smirnov test. P-values less than 0.05 were considered as statistically significant.

Results

The socio demographic of the OCD patients are presented in Table 1.

According to FSFI, the frequency of sexual dysfunction is 80.6% in women. Besides, the frequency of disorders in different subscales of FSFI including: sexual desire, sexual arousal, lubrication, orgasm, satisfaction and sexual pain is 50%, 58.3%, 36.1%, 44.4%, 41.7% and 52.8%, respectively (Table 2).

Sexual disorder is reported in 25% of male OCD patients (based on IIEF). Also, subscales' evaluation of IIEF shows low sexual desire in 10%, erectile disorder in 20%, orgasmic disorder in 25%, sexual dissatisfaction in 40% and 50% decreased in the total IIEF score (Table 3).

The scale of FSFI/IIEF which has been made by both FSFI and IIEF scales shows sexual dysfunctions in 55.4% of all subjects (Table 4).

Considering the different sexual instruments in males and females, this scale has been made by using transformed score and calculating Z-score for IIEF and FSFI scores. The OCI-R and MOCI scores do not have significant correlation with the scores of FSFI in female. However, a significant correlation is found between the scores of OCI-R with erectile and sexual satisfaction subscales of IIEF. In addition, the score of washing in OCI-R and sexual satisfaction in IIEF are significantly correlated with each other (Table 5).

Table 1: Demographic characteristic of patients with OCD.

Sex	N	Age (mean±SD)	Age of onset (mean±SD)
Male	36	35.2±5	18.5±6.8
Female	20	33.19±7.71	

Table 2: Frequency and percent of sexual dysfunction in women with OCD by using FSFI questionnaire.

	FSFI-total	FSFI-desire	FSFI-arousal	FSFI-lubrication	FSFI-orgasm	FSFI-satisfaction	FSFI-pain
Cut off point	<=28	<=3.3	<=3.4	<=3.4	<=3.4	<=3.8	<=3.8
	>28	>3.3	>3.4	>3.4	>3.4	>3.8	>3.8
N = 36	29	18	21	13	16	15	19
Percent	80.6	50	58.3	36.1	44.4	41.7	52.8

FSFI= Female Sexual Function Index.

Table 3: Frequency and percentage of sexual dysfunction in men with OCD by using IIEF questionnaire.

	IIEF-Total	IIEF-Erectile	IIEF-Orgasm	IIEF-Desire	IIEF-Satisfaction	IIEF-Overall
Cut off point	<=30	<=12	<=4	<=4	<=6	<=4
	>30	>12	>4	>4	>6	>4
N=20	5	4	5	2	8	10
Percent	25	20	25	10	40	50

IIEF= International Index of Erectile Function.

Table 4: Frequency and percentage of sexual dysfunction by FSF/IIEF.

FSFI/IIEFcat	Frequency	Percent
<=50	31	55.4
>50	25	44.6
Total	56	100.0

FSFI/IIEF= Female Sexual Function Index/ International Index of Erectile Function.

Table 5: Correlations between total score and subscales of OCI-R and IIEF.

	IIEF-Total	IIEF-Erectile	IIEF-Orgasm	IIEF-Desire	IIEF-Satisfaction	IIEF-Overall
OCI-R-check	-0.225	-0.165	-0.199	-0.224	-0.113	-0.413
OCI-R-hoard	-0.166	-0.225	-0.045	-0.031	-0.063	-0.232
OCI-R- neutral	-0.238	-0.311	0.019	0.075	-0.378	-0.112
OCI-R- obsess	-0.237	-0.353	0.113	-0.207	-0.315	0.066
OCI-R-order	-0.195	-0.193	-0.189	-0.312	-0.066	-0.139
OCI-R-wash	-0.302	-0.278	-0.165	-0.012	-.495*	-0.192
OCI-R total	-0.435	-.481*	-0.158	-0.234	-.458*	-0.324
MOCI-check	-0.256	-0.31	0.021	-0.161	-0.314	-0.133
MOCI-wash	0.192	0.133	0.175	0.026	0.285	0.216
MOCI-slow	-0.229	-0.223	-0.087	-0.178	-0.317	-0.099
MOCI-doubts	-0.265	-0.359	0.149	-0.218	-0.324	-0.116
MOCI- total	-0.126	-0.215	0.193	-0.246	-0.108	0.004

P <0.05, OCI-R= Obsessive - Compulsive Inventory- Revised , MOCI= Maudsley Obsessional - Compulsive Inventory ,

FSFI= Female Sexual Function Index , IIEF= International Index of Erectile Function

Discussion

In this study the relatively high prevalence of sexual dysfunction among female OCD patients was found which is consistent with a previous study [26].

Sexual dysfunction in the female OCD patients

In this section, the evaluation of different phases of sexual response cycle among the female OCD patients are discussed.

Sexual desire: The prevalence of low sexual desire in this study was consistent with findings of other studies [3,6], suggesting the possible role of avoidance and disgust (especially to sexual objects) in OCD patients. In addition, sexual desire may be decreased as a consequence of attention deficit to sexual cues in these patients [6].

Sexual arousal: The high frequency of low sexual arousal in female OCD patients in this study, not only might be related to the sexual avoidance, but it may also be induced by the lack of enough relaxation and confidence in OCD patients which is essential during sexual activity [3].

Lubrication: Association between lubrication, sexual desire and sexual arousal is confirmed by some studies [3]. Therefore, decreased lubrication in this study could be related to low sexual desire and low sexual arousal in OCD patients.

Orgasm: The prevalence of orgasmic disorder in this research was relatively consistent with previous studies [14,26]. Because, OCD patients feel the excessive need to control their thoughts whereas orgasm requires precisely the ability to let oneself go out of control, to let go of the need to direct and to lose one's mind [26].

Sexual pain disorder (dyspareunia and veganism): OCD patients are less capable of relaxation and having concentration on sexual activities; as a result, sexual pain may be more prevalent among them which is reported in this study and it is consistent with other studies [3].

Sexual satisfaction: sexual dissatisfaction was found in 42% of the female OCD patients whereas the prevalence was reported 20.8% according to another report in a group of Iranian female general population [27]. It could be related to both high rates of other disorders in sexual response cycle and high prevalence of marital problems in OCD patients [28,29].

Sexual dysfunctions in male OCD patients: The frequency of sexual dysfunction (based on IIEF) in the present study was significantly lower than the female group of this study, which could be partly related to the lower prevalence rate of sexual dysfunction in male general population. Sexual dysfunction is estimated about 10%-25% among males in comparison with 25%-64% among females in general population [30]. Moreover, expressing sexual problems among Iranian men could be very distressful due to an erroneous statement that says "a man without proper sexual performance is not really a man". On the other hand, the mean age of marriage in men is lower than that of women in Iran, and the age of onset of OCD in men is lower than women (estimated 19 in male and 23 in female) [31]. If sexual dysfunction is considered as a consequence of OCD, male sexual function compared with female sexual function may be affected several years earlier and most probably before marriage. Therefore, OCD males who suffer from these disorders may avoid getting married. But we cannot make a judgment on this issue, because this study was undertaken on married OCD patients.

However, we found a significant correlation between the total score of OCI-R in men with the scores of erection and sexual satisfaction subscales of IIEF, and the score of washing in OCI-R with sexual satisfaction in IIEF.

Following, the important results of different sexual phases, based on IIEF, are discussed.

Sexual desire: Consistent with a previous research [32] we found low sexual desire in this study, although the rate was not significantly higher than prevalence in general population [3].

This may be related to the important role of biological factors as compared to the psychological factors in male. The social pressure on men to get married is less than the pressure on females in Iran, Therefore, male OCD patients with low sexual desire might deliberately prefer to be single and be neglected in many studies unintentionally (all participants in this study were married).

Erection: In this study, the relatively high prevalence of erectile disorder was reported. Additionally, a significant correlation between the total score of OCI-R and this score was noted. In a recent study on erectile dysfunction and psychopathology erectile function was significantly correlated with depression, anxiety and obsessive-compulsive symptoms. However, in the multivariate analysis, only the BDI-II total score remained significant. The authors explained that from a clinical perspective anxiety states and obsessive ruminations often co-exist with depressive symptoms and may be masked by them [3].

Orgasm: As has already been mentioned, orgasmic problems are more prevalent in female OCD patients.

Sexual satisfaction: Consistent with a previous research, male OCD patients have reported low sexual dissatisfaction in this study. It might be induced by the negative impact of OCD on relationship building and sexuality [33]. Moreover, we found a significant correlation between the total score and the score of washing subscale in OCI-R and sexual satisfaction subscale in IIEF ($P < 0.05$). Male OCD patients who are obsessed with contamination and suffered from washing compulsion may experience semen as something disgusting and avoid it. As a result, they may not be able to develop proper sexual satisfaction.

Limitation: Possible limitations of this study include small sample size and no inclusion of single subjects and subjects from different cultures. Therefore, it might be difficult to generalize the outcomes of this study. The two sexual dysfunction questionnaires that were employed only ask about the previous month. Also, it is suggested to design a study for evaluation of obsessive-compulsive symptoms/disorders in sexual dysfunction. Moreover, sexual dysfunction may be related to spouses, running another research for assessing sexual dysfunction in couple with OCD could be helpful. Finally, it is recommended that a research be designed such that the casual effects between OCD and sexual dysfunction could be determined. For example, the relation between marital satisfaction and depression.

Conclusion

In this study high prevalence of sexual dysfunctions (according to FSFI) among female OCD patients and significant correlations between several IIEF's subscales and the total score of OCI-R, confirm almost a direct relation between OCD and sexual dysfunctions. Therefore, it may be something expected in all OCD patients. We suggest that specific tailored training for all health care providers including psychologists, psychiatrists and psychiatric nurses is also necessary.

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