Original Research Article

A comparative study of Pattern of male Sexual dysfunction in OCD and Depression, its correlation with serum testosterone level

Dixit Kapil[1*], Tyagi Alok[2], Singh Paramjeet[3], Kumar Sachin[4]

[1]Junior Resident, Dept of Psychiatry, SMS Medical College and Hospital, Jaipur, Rajasthan, India
[2]Sr. Professor& Unit Head, Dept of Psychiatry, SMS Medical College and Hospital, Jaipur, Rajasthan, India
[3]Sr. Professor& HOD, Dept of Psychiatry, SMS Medical College and Hospital, Jaipur, Rajasthan, India
[4]Junior Resident, Dept of Psychiatry, SMS Medical College and Hospital, Jaipur, Rajasthan,India
Received: 28-11-2021 / Revised: 19-12-2021 / Accepted: 02-01-2022

Abstract

Background:-sexual dysfunction is prevalent in mental disorders both in drug naïve or on psychotropics. Sexual dysfunction in drug naïve mental disorders is understudied, sexual dysfunction is associated with low serum testosterone level but correlation in mental disorder is not well studied. **Aim:-** assess and compare the pattern of sexual dysfunction among male OCD and depressive patients attending at psychiatric department ofSMS medical college Jaipur and its correlation with serum testosterone level. **Methods:-** total 80participants in each group of OCD ,Depression and Healthy control , diagnosed by ICD-10 ,participated in the study after informed consent. Arizona sexual experience scale (ASEX) was applied for sexual dysfunction. Serum testosterone level was measured by laboratory test. After data collection,data analyzed by SPSS software. **Results:-** Total 240 responses were recorded. Sexual dysfunction reported in OCD and Depression were 39% and 46% respectively.Decreased sex drive was most common sexual dysfunctions.Depressive patients have slightly higher desire dysfunction.Significant comparison reported on comparing severity of disease in between patients with or without sexual dysfunction. Mean serum testosterone level was slightly lower in both OCD and depression than control. Serum testosterone significantly negatively correlated with sexual dysfunction in both OCD and Depression group. **Conclusion:-** our study concluded that sexually dysfunctions is frequently seen in drug naïve OCD and Depression patients. Our study also show significant negative correlation of sexual dysfunction with serum testosterone level in OCD and Depression, though correlation was not strong.

Keywords: Pattern,sexual,dysfunction

This is an Open Access article that uses a funding model which does not charge readers or their institutions for access and distributed under the terms of the Creative Commons Attribution License (http://creativecommons.org/licenses/by/4.0) and the Budapest Open Access Initiative (http://www.budapestopenaccessinitiative.org/read), which permit unrestricted use, distribution, and reproduction in any medium, provided original work is properly credited.

Introduction

Despite the suggestion of a link between the unconscious sexual desires and consequent development of anxiety disorders such as OCD and depression by psychoanalysis almost a century ago, sexuality and sexual functioning in anxiety disorders has largely been overlooked throughout the 20th century.

Sexuality is defined by the World Health Organization as follows: A central aspect of being human throughout life encompasses sex, gender identities and roles, sexual orientation, eroticism, pleasure, intimacy and reproduction. Sexuality is experienced and expressed in thoughts, fantasies, desires, beliefs, attitudes, values, behaviors, practices, roles and relationships. While sexuality can include all of these dimensions, not all of them are always experienced or expressed. Sexuality is influenced by the interaction of biological, psychological, social, economic, political, cultural, legal, historical, religious and spiritual factors. It is one of the important aspects of human life, and sexual health determines the overall quality of human life[1].

Sexual dysfunctions (SD) are characterized by psycho-physiological changes associated with the sexual response cycle in men and women[3]. Sexual response cycle in OCD patients can be affected separately or diffusion ally in all phases (desire, excitement and orgasm)[4]. Healthy sexual functioning is an integral part of a happy life. 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%[2].

*Correspondence
Dr. Dixit Kapil
Junior Resident, Dept of Psychiatry, SMS Medical College and Hospital, Jaipur, Rajasthan, India
E-mail: kapildixit1993.kd@gmail.com

Amongst all psychiatric disorders, OCD is recognized as one of the most serious causes of disability and impaired quality of life in family and social relationships[4-8], and it is associated with considerable economic costs to the individual, healthcare services, and informal caregivers[9]. Problems in sexual functioning are commonly seen in cases of depression[10]. The clinical features of depression have been known to impair sexual functioning. For instance, anhedonia, or the inability to experience pleasure, the easy fatigability seen in patients with depression, and the poor self-esteem that patients with depression often suffer from can predictably affect normal sexual functioning[11,12]. The hypothalamic-pituitary-adrenal (HPA) axis, the major stress response system of the body, is known to be involved in the susceptibility to develop psychiatric disorders and physical conditions such as infectious diseases, cardiovascular problems, autoimmune processes, chronic fatigue syndrome, and rheumatoid arthritis. Stressful life events and dysregulations of the HPA axis are thought to play a role in the pathogenesis of the OCD and other anxiety disorders .Testosterone is the hormone believed to be connected with libido in both men and women. In men, stress is inversely correlated with testosterone blood concentration. Other factors, such as sleep, mood, and lifestyle, influence circulating levels of the hormone. The release of testosterone in men is under the control of the hypothalamic–gonadal– pituitary axis. The hormone is secreted in a pulsatile manner and in a diurnal rhythm, with the highest levels occurring in the morning and the lowest levels in the evening. Normal concentrations range from 270 to 1,100 ng/dL.

Sreenivas V. R. et al 2019[13] conducted a study on Prevalence of Sexual Dysfunction among Newly Diagnosed (Schizophrenia, Depression, Obsessive Compulsive Disorder and Panic Disorder) Drug-Naive Patients Attending Psychiatric Outpatient Department resulted than psychiatric illness had more prevalence of sexual dysfunction. Dissatisfaction with Orgasm (17%) and reduced desire to involve in sex (16%) were the two domains which were reported

more frequently by the subjects. Reduced sexual desire (24%) and Arousal difficulties were reported more frequently in depression.**Thakur desai A et al 2018[14]** conducted a study on A prospective study on sexual dysfunctions in depressed males and the response to treatment resulted as Most of the patients had mild-to-moderate grades of depression. Sexual dysfunctions were seen in 62.5% of the patient group. Significant differences were seen with decreased sexual desire, orgasmic problems, and overall dissatisfaction in the patient group. Depression was found to be significantly associated with sexual functioning.**LaleGonenirErbay et al(2015)[15]** conducted a study on Neurosteroid Levels in Patients with Obsessive-Compulsive Disorder resulted cortisol levels were significantly higher in patients with OCD than the control In contrast, cortisol levels in male patients were higher than the control group, while testosterone levels were lower. The increased cortisol and decreased testosterone levels in male patients likely involves the hypothalamic-pituitary-gonadal (HPG) axis.**Manohar S J (2017)[16]** conducted a study as Review Article on Sexual Dysfunctions in Depressionconcluded as Sexual dysfunction is one of the common symptoms seen in depression. Presentations include decreased libido, erectile dysfunction, arousal difficulties and orgasm related dysfunctions.**Kendurkar A , kaur B et al (2008)**[17] conducted a study on Major depressive disorder , obsessive compulsive disorder and generalized anxiety disorder ; do the sexual function differ concluded as persons with MDD have more sexual dysfunction than OCD and GAD.**Kheirkhah F, Hosseini SR, Hosseini SF, et al (2014)[18]** conducted a study on Relationship between testosterone levels and depressive symptoms resulted as The mean serum testosterone level in men without symptoms of depression and was higher than in those with such symptoms.

Above studies suggest that there were prevalence of sexual dysfunction among OCD and Depression. S. testosterone level also related to sexual dysfunction and as HPA axis have very significantly involve in both OCD and Depression. Our study aimed towards comparison of male sexual dysfunction and correlation with serum testosterone level in between OCD and Depression.

Aims and objectives

To assess and compare the pattern of sexual dysfunction among male OCD and Depressive patients attending at psychiatric department of sms medical college Jaipur and its correlation with serum testosterone level.

Materials and method

All procedures were approved by the research review board and ethical committee of the institution. An informed written consent was obtained from the patients and informants prior to participation. Patients were recruited as outpatient in department of Psychiatry, SMS Hospital, Jaipur and control participants were taken from general population voluntarily via advertisements.

A total no. of 240 participants included in the study 80 in each group (OCD, Depression and Healthy control). It was a comparative type cross-sectional study done at the psychiatric department of SMS medical college ,Jaipur. Sampling done by convenient sampling method. After taking an written informed consent , a screening Performa including inclusion and exclusion criteria applied for screening.Inclusion criteria were: Patients diagnosed with OCD and depression as per ICD 10 criteria; Healthy control without history of any psychiatric, medical or surgical illness; Age 18 years and above;male sex and Participant to give informed consent. Exclusion criteria were: Disorder of intelligence or language making the interview difficult; History of significant substance abuse in last 3 months excluding nicotine; History of any medical and surgical illness. OCD and Depression patients were diagnosed by ICD-10 and Healthy control were recruited by direct standardization. Severity of illness was assessed by Y-BOCS scale in OCD and by HAM-D scale in Depression.Sexual dysfunction was assessed by ASEX(Asex1. Desire, Asex2. Arousal, Asex3. Penile erection ,Asex 4. Ability to reach orgasm ,Asex 5. Satisfaction from orgasm). scale in all three groups. For S.testosterone level early morning sample was taken . After that data collected and analyzed by SPSS software .

Stasticalanalysis :-statistical analysis was performed with spss version 22.the quantitative data was presented as mean and standard deviation.for two groups student t test was used and for more than 2 groups one way ANOVA used to compare level of significance. probability was considered significant if less than 0.05.

Results

Socio demographic data

The age distribution was almost same among all three groups .mean age respectively in OCD ,depression and control group are 30.83, 30.58 and 31.46 years. Most of participants in all group were Hindu in religion. In OCD group 54 , in depression 53 and in control 62 participant of total 80 were married.

Literacy percentage was 90 % in OCDgroup , 86% in depression group and in control group was 87.5%. Participants were mostly from urban background.

There were 80 participants in each group. In OCD group 39 % show sexual dysfunction. 46 % participants among depression had sexual dysfunction. Only 11 % controls had sexual dysfunction. In both depression and OCD group most common with sexual desire dysfunction, least with orgasmic dysfunction.

Table 1. Prevalence of pattern of sexual dysfunction in OCD, Depression and Healthy controls

Domain of sexual dysfunction	Sexual dysfunction	OCD	Depression	Control
ASEX 1(desire)	Yes	12 (15 %)	15 (19%)	5 (6%)
	No	68 (85%)	65 (81%)	75 (94%)
ASEX 2(Arousal)	Yes	5 (6%)	3 (4%)	0
	No	75 (94%)	77 (96%)	80 (100 %)
ASEX 3(erection)	Yes	7 (9%)	9 (11%)	2 (3%)
	No	73 (91%)	71 (89%)	78 (97%)
ASEX 4(orgasm)	Yes	3 (4 %)	3 (4%)	2 (3%)
	No	77 (96%)	77 (96%)	78 (97%)
ASEX 5(satisfaction with orgasm)	Yes	3 (4%)	4 (5 %)	0
	No	77 (96%)	76 (95%)	80 (100 %)
Sexual dysfunction total	Yes	31 (39%)	37 (46%)	9 (11 %)
	No	49 (61%)	43 (54%)	71 (89 %)

ASEX and Severity of Psychopathology

Severity of psychopathology for OCD had obtained by YBOCS and for depression by HAM-D scale. Two group were made in both OCD and Depression patients , those with sexual dysfunction denoted as yes and without sexual dysfunction denoted as no group. On comparing severity of illness in yes and no group , those with sexual dysfunction reported higher score of disease severity than who don't have sexual dysfunction among both OCD and Depression group.

Table 2. Comparison of severity in group of sexual dysfunction and without sexual dysfunction in both OCD and depression group

Sexual dysfunction in OCD	Number of OCD Cases (n=80)	Mean	SD	P value	tvalue
Yes	31	25.35	5.18	0.001(S)	-3.108
No	49	11.39	2.32		
Sexual dysfunction in depression	Number of Cases (n=80)	Mean	SD	P value	t value
Yes	37	23.70	4.82	0.001(S)	-3.004
No	43	13.58	2.82		

Serum testosterone level was lower in both depression (417ng/dl) and OCD(424 ng/dl) than control group(493 ng/dl).On comparing serum testosterone level in OCD patients among yes and no groups , yes group show significant low level.In depression group significant difference were noted among yes and no group of serum testosterone level. Difference were not significant with control group.

Table 3. Comparison of ASEX total and severity of psychopathology between study groups

S. No.	Factors	N	Mean	SD	F ratio	Sig. (p)
A	ASEX Total Score					
	1. OCD	80	15.03	4.92	12.52	**0.001** (S)
	2. Depression	80	16.04	4.40		
	3. Control	80	5.16	3.46		
B.	SPP Score				1.083	
	1. OCD	80	19.48	7.72		0.280 (NS)
	2. Depression	80	18.26	6.38		

Significant difference were seen on comparison of total asex score in study groups. There were significant difference were noted in severity of OCD and depression group.

Table 4. comparison of S. Testosterone level among sexual dysfunction and without sexual dysfunction group in OCD , Depression and control group.

Sexual dysfunction in OCD	Number of Cases (n=80)	Mean	SD	P value	t value
Yes	31	401.57	124.34	**0.009(S)**	-3.012
No	49	548.74	99.30		
Sexual dysfunction in **Depression**	Number of Cases (n=80)	Mean	SD	P value	t value
Yes	37	391.75	138.19	**0.043(S)**	-3.547
No	43	502.86	128.22		
Sexual dysfunction in **control group**	Number of Cases (n=80)	Mean	SD	P value	t value
Yes	9	435.12	80.1	0.069(NS)	-0.864
No	71	551.67	104.46		

Table 5. Correlation sexual dysfunction with serum testosterone level in all three groups

Group	Variables	Bioendocrinal Markers	Pearson correlation coefficient	significance
OCD	Total ASEX	S. Testosterone	(-)0.307	**0.04***
DEPRESSION	Total ASEX	S. Testosterone	(-) 0.474	**0.045***
CONTROL	Total ASEX	S. Testosterone	(-) 0.077	0.498

Significant negative correlation were noted of serum testosterone with total ASEX scores in both OCD and depression group , not in control group.

Discussion

Total three group participated in this study OCD, depression and healthy controls. There were 80 participants in each group. 37(46%) participants out of 80 show sexual dysfunction in depression group, slightly more than OCD group. In OCD group sexual dysfunction was 39% (31 participants out of 80). Control group reported very less (11%) sexual dysfunction compared to two other groups. Prevalence of Sexual dysfunction reported in our study in OCD (39 %) , depression (46 %) and control (11 %) was less than obtained in **kendulkar et al**[19]. Sexual dysfunction was assessed in five areas. In both ocd and depression group sexual dysfunction reported in every area. In case of ocd patients 12 (15 %) reported dysfunction in area of sexual desire maximum in this area. 2nd most in penile erection with 7(9 %) out of 80. Depression group also had more no. in desire area with 15 (19%) out of 80.erection dysfunction reported in 9 patients (11%). Among many patients in both ocd and depression reported sexual dysfunction in more than one domain. The criteria for single domain was 5 score out of 6 ,over all score 19or more and score 4 in at least 3 domain suggestive of sexual dysfunction. So many patients had reported sexual dysfunction with score of 4 in three domains.Among healthy controls only 5 patients reported desire dysfunction .Control group didn't show any dysfunction in orgasmic and arousal domain. most reported area of sexual dysfunction in sexual desire in all three group with highest in depression (19 %) same as **kendulkar et al**. The reported dysfunction in sexual activities may be a result of the reduced self confidence in these mental disorder patients. The other reasons may be the lack of interest or decreased pleasurable experience[93]. Reduced sexual desire was more reported in subjects with depression compared to the other two groups. The reason would be as a result of the illness per se which exhibits loss of interest, reduced energy level, loss of libido and the patients with depression are unable to experience pleasure. However the rates of orgasm dysfunction in depression were not comparable with similar past studies[94].

Total ASEX score was 15 , 16 and 5 respectively in OCD , depression and control group. Severity of psychopathology was measured by HAM -D scale in depression and Y-BOCS scale in OCD. Mean score of severity in OCD and depression were 19 and 18. There were statistically no significant difference in severity on comparison. Total ASEX score recorded in our study in ocd and depression was same as previous study done by **Sreeniwas V R** et al (2019). But sexual sexualdysfuction was in orgasmic dissatifation area contrast to our study and in that there were significant difference in severity of psychopathology among group but in our group there

were no significant difference[20].

In our study S. testosterone was low in OCD comparative to controls same as a previous study done by **Erbay G R et al** (2015)[21]. **Kheirkhah F et al** concluded that depression inversely related with S. testosterone same as with our study. The mean serum testosterone level in men without symptoms of depression was higher than in those with such symptoms[22]. In our study S. testosterone was negatively correlated with sexual dysfunction participants in OCD and depression group contrast to study done by **MARTINEZ M et al**. that study concluded There was no association between total and free testosterone levels and desire.

Our study directed that sexual dysfunction not only due to antidepressant drugs but also in drug naïve patients so this should be kept in mind .

Conclusion

Our study concluded that sexually dysfunctions is frequently seen in drug naïve OCD and Depression patients. Proper workup and psychoeducation is necessary before starting SSRI, because they also causes sexual dysfunctions. Our study also show significant negative correlation of sexual dysfunction with serum testosterone level in OCD and Depression , though correlation was not strong.in our study we included only male patients so findings could not be generalize on whole population though small size of sample also.

References

1. Sadock B, Ruiz P. Kaplan and Sadock's synopsis of psychiatry: behavioral sciences. Walters Kluwer; 2015
2. Sassano-Higgins SA, Pato MT (2015) Obsessive-Compulsive Disorder: Diagnosis, Epidemiology, Etiology, and Treatment. Focus 13: 129-141.
3. Thakurta RG, Dhar OPSP, Sarkar S, Ray P, Mallick AK (2016) Prevalence and nature of sexual dysfunctions in OCD in a tertiary medical college. Eastern J Psychiatry 17
4. Kirana P, Tripodi F, Reisman Y, Porst H (2013) The EFS and ESSM syllabus of clinical sexology. Amsterdam Medix.
5. Coluccia A et al (2015). Obsessive-compulsive disorder and quality of life outcomes: protocol for a systematic review and meta-analysis of cross-sectional case-control studies. Epidemiology, Biostatistics and. Public Health. 2015;12:2.
6. Coluccia A, Fagiolini A, Ferretti F, Pozza A, Costoloni G, Bolognesi S, et al.Adult obsessive–compulsive disorder and quality of life outcomes: a systematic review and meta-analysis. Asian J Psychiatr. 2016;22:41–52.
7. Moritz S, Rufer M, Fricke S, Karow A, Morfeld M, Jelinek L, et al. Quality of life in obsessive-compulsive disorder before and after treatment.Comprehensive Psychiatry. 2005;46:453–9.
8. Pozza A, Lochner C, Ferretti F, Cuomo A, Coluccia A. Does higher severity really correlate with a worse quality of life in obsessive–compulsive disorder? A meta-regression. Neuropsychiatr Dis Treat. 2018;14:1013.
9. Schwartzman CM, Boisseau CL, Sibrava NJ, Mancebo MC, Eisen JL,Rasmussen SA. Symptom subtype and quality of life in obsessivecompulsive disorder. Psychiatr Res. 2017;249:307–10.
10. Knapp M, Henderson J, Patel A. Costs of obsessive-compulsive disorder: a review. In: Maj M, Sartorius N, Okasha A, Zohar J, editors. Obsessivecompulsive disorder. Chichester: John Wiley & Sons; 2000. p. 253–308.
11. Angst J. Sexual problems in healthy and depressed persons. Int Clin Psychopharmacol 1998;13 Suppl 6:S1-4.
12. Moore TM, Strauss JL, Herman S, Donatucci CF. Erectile dysfunction in early, middle, and late adulthood: Symptom patterns and psychosocial correlates. J Sex Marital Ther2003;29:381-99.
13. Sreenivas V R, Narayanaswamyet al.(2019).Prevalence of Sexual Dysfunction among Newly Diagnosed (Schizophrenia, Depression, Obsessive Compulsive Disorder and Panic Disorder) Drug-Naive Patients Attending Psychiatric Outpatient Department. IOSR Journal of Dental and Medical Sciences .Volume 18, Issue 9 Ser.3 (September. 2019), PP 01-30
14. Thakurdesai A, Sawant N. A prospective study on sexual dysfunctions in depressed males and the response to treatment. *Indian J Psychiatry*. 2018;60(4):472-477.
15. Erbay LG, Kartalci S. Neurosteroid Levels in Patients with Obsessive-Compulsive Disorder. Psychiatry Investig. 2015 Oct;12(4):538-4.
16. Manohar S, Rao S, Chandran S, Maheshwari S, George M, Rao S ,Ahmed F. (2017). Sexual Dysfunctions in Depression. Clinical Depression. 03. 10.4172/2572-0791.1000125
17. Kendurkar A, Kaur B. Major depressive disorder, obsessive-compulsive disorder, and generalized anxiety disorder: do the sexual dysfunctions differ?. *Prim Care Companion J Clin Psychiatry*. 2008;10(4):299-305.
18. Kheirkhah F, Hosseini SR, Hosseini SF, Ghasemi N, Bijani A, G Cumming R. Relationship between testosterone levels and depressive symptoms in older men in Amirkola, Iran. *Caspian J Intern Med*. 2014;5(2):65-70.
19. Kendurkar A, Kaur B. Major depressive disorder, obsessive-compulsive disorder, and generalized anxiety disorder: do the sexual dysfunctions differ? Prim Care Companion J Clin Psychiatry. 2008;10(4):299-305.
20. Sreenivas V R ,Narayanaswamy M A (2019) Prevalence of Sexual Dysfunction among Newly Diagnosed (Schizophrenia, Depression, Obsessive Compulsive Disorder and Panic Disorder) Drug-Naive Patients Attending Psychiatric Outpatient Department. IOSR Journal of Dental and Medical Sciences (IOSR-JDMS) e-ISSN: 2279-0853, p-ISSN: 2279-0861.Volume 18, Issue 9 Ser.3 (September. 2019), PP 01-30.
21. Erbay G L, and Kartalci S .Neurosteroid Levels in Patients with Obsessive-CompulsiveDisorder.PsychiatryInvestig2015;12(4):538-544.
22. Kheirkhah F, Hosseini SR, Hosseini SF, et al. Relationship between testosterone levels and depressive symptoms in older men in Amirkola, Iran. Caspian J Intern Med 2014; 5(2): 65-70

Conflict of Interest: Nil Source of support: Nil