A Study of Psychiatric Comorbidity and Fear of Corona Virus in Patients With Obsessive Compulsive Disorder During COVID-19 Pandemic

Bandana Gupta, Teena Bansal, Shweta Singh, Anil Nischal

Department of Psychiatry, King George's Medical University, Lucknow, Uttar Pradesh, India

Abstract

Background and objective: The WHO declared the chinese outbreak of COVID-19 to be health risk of national and international concern from 30th January 2020. This has significant implications on mental health , especially for patients of OCD in various ways. This study was aimed to study psychiatric comorbidity and Fear of Corona virus in patients with obsessive-compulsive disorder (OCD) during COVID-19 pandemic and compare socio-demographic & clinical variables between patients of OCD with or without psychiatric comorbidity during COVID-19 pandemic.

Method: In person interview including 96 old and new symptomatic patients of OCD diagnosed as per ICD 10-DCR, who had onset of illness prior to COVID-19 (march 2020), between the age of 18-60 years was conducted. The disease severity was recorded on D-YBOCS, HAM-A and HAM-D. The two groups of OCD, with comorbidity and without comorbidity were compared. Fear of COVID-19 Scale was used to analyse fear of corona virus.

Results: Depression was the most common psychiatric comorbidity. The fear of coronavirus in 59.4% OCD patients was observed to be mild in severity and the mean FCV-19S score to be 14.42 ± 4.19. Positive correlation was found between FCV-19S score and the YBOCS obsession subtotal score, YBOCS compulsion subtotal score, YBOCS total score, HAM-D score and HAM-A score. FCV-19S score also had a statistically significant positive correlation with D-YBOCS severity score for contamination and cleaning, severity score for hoarding and collecting, severity score for symmetry and severity score for aggression. Among the OCD patients with comorbidity, a statistically significant higher YBOCS score, D-YBOCS severity score for Contamination and Cleaning and FCV-19S score were observed when compared to OCD patients without comorbidity.

Conclusions: Fear of corona virus was seen in majority of the OCD patients and was associated with increased severity of disease. The OCD patients with comorbidity had significantly higher Y-BOCS score mainly for Contamination and Cleaning.

INTRODUCTION

As per World Health Organization (WHO), Obsessive Compulsive Disorder (OCD) is the sixth most disabling psychiatric disorder with a lifetime prevalence of 1.9–3.3%.[1,2] Early Global Burden of disease data indicated that OCD was

one of the most disabling of all mental disorders.[1,3,4] In India, its lifetime prevalence rate is about 0.76%, with the current prevalence being 0.32%.[5]

In addition, a majority of patients with OCD are at high risk of having one or more comorbid (co-existing) psychiatric illnesses. The most common concurrent psychiatric disorders were major depression (30–55%), social phobia (11–23%), generalized anxiety disorder (GAD) (18–20%), simple phobia (7–21%), panic disorder (6–12%), eating disorder (8–15%), tic disorders (5–8%) and Tourette's syndrome (5%). The Cross-National Epidemiological Study also found high rates of anxiety disorders (24–70%), and depression (12–60%).[2,6,7]

Various conditions have shared features with OCD. These disorders are frequently described as obsessive-compulsive spectrum disorders (OCSD). They include hypochondriasis, body dysmorphic disorder (BDD), anorexia nervosa, Tourette syndrome (TS), trichotillomania, binge eating, compulsive buying, kleptomania, pathological gambling, and sexual compulsions.[2,8]

On 30th January 2020, the WHO declared the Chinese outbreak of COVID-19 to be a Public Health Emergency of International Concern posing a high risk to countries with vulnerable health systems. Although originated from CHINA, COVID-19 soon took the whole world into its clutches. India was also badly affected by the pandemic In order to break the transmission chain, the major strategies recommended by the WHO and the Centre for Disease Control and Prevention (CDC) are social distancing, hand hygiene and respiratory hygiene by wearing masks. Handwashing by soap or by alcohol-based sanitiser as a preventive measure of contamination is being extensively campaigned from the beginning.

While all this is being done with the best of intentions to contain the spread of this viral disease, there is doubt how this will affect those people who already have OCD, especially those having an obsession with contamination and compulsion of washing.[9]

Also there is a generalised fear of corona virus and patients with OCD are vulnerable to disease exacerbation in response to this fear. Thus this study was planned to study fear of corona virus in OCD patients with and without comorbidity and its association with disease severity and symptoms.

Materials and Methods

This was a non-interventional, cross-sectional study conducted at Department of Psychiatry, from a tertiary care centre in North India and approved by the Institutional Ethics Committee. In person interview including 96 old and new symptomatic patients of OCD diagnosed as per ICD 10-DCR (ICD-10 is freely available on the internet at web address www.who.int/classifications/icd/en/GRNBOOK.pdf), who had onset of illness prior to COVID-19 (March 2020), between the age of 18–60 years was conducted. The patients were screened on MINI 6.0.010 for psychiatric comorbidity, after taking written informed consent. Those patients who were uncooperative for assessment, had mental sub normality as per clinical assessment, having active substance use except for nicotine and any significant medical/surgical illness requiring priority management were excluded.

Socio-demographic and clinical details including a checklist of other psychiatric disorders which are not covered under MINI 6.0.0, example- Somatization disorder, skin picking disorder, Chronic motor/vocal tics, Body dysmorphic disorder, hypochondriasis, trichotillomania, Tourette's disorder etc. Patients were assessed on Yale –Brown Obsessive Compulsive Scale (Y-BOCS) for the severity of OCD11. HAM-D (17 – item)12 & HAM-A13 applied to all patients to assess and rate sub-syndromal as well as diagnosable depression and anxiety symptoms respectively. Fear of COVID-19 scale was used to assess fear of corona virus.[14] Data obtained was analysed statistically by using appropriate methods on SPSS Version 24. Non –parametric statistical tests were used as data did not follow normal distribution. Correlational analysis was also done using Pearson's correlation coefficient to see the correlation between Fear of COVID-19 Scale score and variables such as YBOCS score, HAM-D and HAM-A score and symptom severity scores (D-YBOCS).[15] The Mann-Whitney U test is used to compare differences of the variables

between two groups of OCD i.e., with comorbidity and without comorbidity.

Observation and Results

Socio-demographic and Clinical Variables

A total of 131 patients were screened, out of which 28 patients were screen failed and 7 patients did not qualify selection criteria. Finally 98 patients formed the sample of the study.

The mean age recorded was 31.17 ± 8.8 years. Among them 63.5% were females, 81.3% were Hindus, 45% were graduates, 70.8% were unemployed (including housewife), 38.5% were with an income in the range of more than Rs. 20,000 Per Month and 70.8% belonging to a nuclear family. The study sample was almost equal in marital and domicile wise distribution. The mean duration of illness was 4.38 ± 3.48, mean age of onset of illness 26.59 ± 8.72. Out the total sample, 43 (44.8%) patients had one or more psychiatric comorbidity details of which are provided in Table 1. The patients with a family history of psychiatric illness were 10 (10.4%) out of which 3 (30%) had OCD, 3 had depression 2 (20%) had psychosis and 2 (20%) bipolar affective disorder. Out of the total patients, 71 were already on treatment at the time of assessment and 96.87% patient had mixed type of OCD, 3.13% had pure obsession, and no patient was found to be having compulsions only.

Table 1: Distribution of sample according to presence of various psychiatric comorbidities(n=96)

Psychiatric comorbidity	Number of cases * (%)
Major depressive disorder	30 (31.25%)
Anxiety disorder unspecified	21 (21.85%)
Dysthymia	8 (8.3%)
GAD	2 (2.08%)
Somatization disorder	2 (2.08%)
Panic disorder	1 (1.04%)
Hypochondriasis	1 (1.04%)
Social anxiety disorder	1 (1.04%)

*Data is not mutually exclusive

Table 2: Mean of subscale and total score of Y-BOCS, HAM-D and HAM-A (N=94)

YBOCS score	Mean ± SD	Range
Obsession subtotal score	13.96 ± 2.07	10-18
Compulsion subtotal score	13.14 ± 2.05	9-18
Total YBOCS	27.13 ± 3.73	21-36
HAM D	6.52 ± 8.77	0-25
HAM A	14.49 ± 4.01	7-25

Symptomatology and Severity of OCD and Comorbid Depression and Anxiety

The mean Y-BOCS and subscale scores of the sample is provided in Table 2. The observed range was 21-36. 69.8% of the sample belonged to the severe category, 17 (17.7%) to the moderate category and 12 (12.5%) to the extremely severe category.

Fear of Coronavirus

On assessing the fear of coronavirus as per the Fear of COVID-19 Scale (FCV-19S), more than half (59.4%) of the patients belonged to the category of mild fear of COVID-19, 38.5% had moderate fear and only 2.1% scored severe fear of COVID-19 [Table 3]. The Pearson's correlation between FCV-19S and the Y-BOCS scores, obsession subtotal score, compulsion subtotal score, the HAM-D score and HAM-A score was statistically significant and positive Table 4. Also the correlation between FCV-19S and symptom severity scores on (D-YBOCS) in the dimension of contamination and cleaning, hoarding and collecting, symmetry, aggression was statistically significant and positive Table 5.

Table 3: Distribution of sample with respect to severity on Fear of COVID-19 Scale scores (FCV-19S)

Fear of COVID-19 Scale scores	No. (N=96) (%)
7–15 (Mild)	57 (59.4)
16–25 (Moderate)	37 (38.5)
26–35 (Severe)	2 (2.1)
Mean ± SD	14.42 ± 4.19
Range	7–32

Table 4: Correlation between Fear of COVID-19 Scale score and YBOCS score, HAM-D and HAM-A score

Pearson's Correlation		YBOCS score	Obsession subtotal score	Compulsion subtotal score	HAM-D score	HAM-A score
Fear of COVID-19 scale score	r- value	.702	.667	.631	.311	.511
	p-value	.000*	.000*	.000*	.002*	.000*

(*Significant at p <0.05)

Table 5: Correlation between Fear of COVID-19 Scale score and symptom severity scores (D-YBOCS) in various dimensions

Correlation		*Contami-nation and cleaning*	*Symmetry, ordering, counting and arranging*	*Miscella-neous*	*Aggre-ssive*	*Sexual and religious*	*Hoarding and collecting*
Fear of COVID-19 scale score	r- value	.541	.556	.147	.589	.364	.801
	p-value	.000*	.002*	.422	.004*	.096	.030*

(*Significant at p <0.05)

Table 6 : Comparison of the variables between two groups of OCD (with and without comorbidity)

Variable	With comorbidity (n=43)		Without comorbidity (n=53)		Test of significance (Mann Whitney Test)	
	Mean	*SD*	*Mean*	*SD*	*z-value*	*p-value*
Total Y-BOCS Score	28.45	3.79	25.88	3.28	-3.27	0.001 *
Obsession subtotal	14.55	2.17	13.39	1.82	-2.54	0.011 *
Compulsion subtotal	13.83	2.14	12.47	1.73	-3.29	0.001 *
Contamination and Cleaning	10.54	2.13	9.54	1.76	-2.22	0.026 *
Symmetry, ordering, counting and arranging	8.44	1.39	7.92	0.90	-0.97	0.333
Miscellaneous	8.47	1.97	8.40	1.50	0.00	1.000
Aggressive obsessions and related compulsions	8.60	0.55	8.76	1.35	-0.12	0.903
Hoarding and collecting	5.67	0.58	4.75	0.96	-1.31	0.190
Sexual and religious obsessions and compulsions	10.43	1.28	10.13	1.13	-0.53	0.593
Fear of COVID 19 Scale	15.30	3.65	13.57	4.52	-2.46	*

(*Significant at p <0.05)

The comparison of the YBOCS, D-YBOCS, FCV-19S scores between the two groups of OCD with comorbidities and without comorbidities was done using was Mann Whitney Test. The YBOCS score, D-YBOCS severity score for Contamination and Cleaning and Fear of COVID-19 scale score were found to be statistically higher in OCD with comorbidity group.

Discussion

The present study was a cross-sectional, non-interventional study done to study the fear of corona virus and comorbidities in patients with OCD during the COVID-19 pandemic. The previous studies done on psychiatric comorbidities in OCD state that major depression was the most common comorbid disorder present in 30–55% of the sample and followed by unspecified anxiety disorders in 22% and dysthymia in 11% of patients 2, 6, 16 and so was the finding in our study, with total 44.8% patients with psychiatric comorbidity, depression was the most common followed by anxiety. However, the OCSD observed in our study were less than as reported in the study by Jaisoorya *et al.*[17]

The presence of moderate severity of OCD symptoms in more than two thirds in our sample assessed as per YBOCS, is consistent with the finding of a study conducted by Khosravani *et al.* (2021),[18] with the aim to study the impact of COVID-19 pandemic on symptom dimensions and severity in patients with OCD. In their study a group of patients (n=270) with a diagnosis of OCD visiting their clinics were assessed during the pandemic, either in person or by phone or through online survey. They observed a mean total YBOCS score of 28.7 ± 8.2. However, our finding is in contrast with few other studies such as the case control study conducted by Sharma *et al.* (2021),[19] (cases n=240; historical control n=207) to assess impact of the coronavirus pandemic on short term course of OCD. They found a mean total YBOCS score of 12.80 ± 9.95 in their pandemic cohort. Another cohort study conducted to assess phenomenology and severity of OCD symptoms after COVID-19 done by Nandhini *et al.* (2021)[20] (n=30), found that the mean YBOCS score to be 15.03. An Italian study by Prestia Davide *et al.* (2020),[21] aimed to

study COVID 19 pandemic impact on OCD patients, observed their mean YBOCS score during quarantine (i.e., 6 weeks since the beginning of complete lockdown) as 20.46 ± 8 .45. An aspect noteworthy is that these studies had either excluded the patients with psychiatric comorbidities as in study by Sharma *et al.*[19] or had very few patients with psychiatric comorbidities as in study by Prestia Davide *et al.*[21] whereas, Khosravani *et al.*,[18] had 44.4% patients with psychiatric comorbidities which is comparable to our study. The presence of these comorbidities could worsen the severity of OCD symptoms.[6]

Another relevant entity in the context of the current pandemic was the coronavirus fear, assessed as per the Fear of COVID-19 scale (FCV-19S). Most patient in our study experienced mild fear. Our score were lower as compared to the following studies. In the study by Doshi *et al.*,[22] carried out with a total of 1499 participants from the general Indian population, the mean FCV-19S score was 18.00 ± 5.68. In another study conducted by Sathe *et al.*,[23] (n=530), found a mean score of 15.73 ± 5.22. In the former study, significantly higher scores were reported by females and health care workers and in the later female gender, lower level of education, caretakers of COVID 19 patients and poor perceived physical health were significantly associated with higher FCV-19S scores. This could probably explain our finding of the lower mean FCV-19S score, as our study included only OCD patients and included no health care workers or caretaker of COVID 19 patient. Also, large number of patients were graduates. In our study, a large proportion (59.4%) of the patient-reported mild fear of COVID-19, which is in line with the finding from the above-mentioned study with the former study showing a significantly large number of study samples reporting low fear and about half of the respondents reporting mild fear in the later.

As per findings of our study, with an increase in fear of coronavirus, the severity of obsessions, compulsions, the overall illness severity, severity of illness dimensions such as contamination and cleaning, hoarding and collecting, symmetry and aggression increased. Also, the severity of comorbidities i.e., depression and anxiety increased with increasing coronavirus fear. Somewhat similar results were obtained by Wheaton *et al.* (2021),[11] using the

COVID-19 threat scale (CTS; assesses anxiety and fear related to coronavirus) and DOCS found that the OCD severity was significantly associated with CTS score and DASS-21 score for stress, and anxiety but not with depression. To our knowledge, no study with one-to-one comparison between FCS-19S and OCD was found although, there are studies suggesting increased fear of coronavirus increases anxiety, depressive symptoms and psychological distress.[24,25] Murat *et al.*, in their study concluded that perceived fear can significantly increase the risk of engaging in preventive behaviours.[26] Thus, in a disorder like OCD, which has characteristic repetitive behaviour, fear of contamination and a disorder which has evidence to get exacerbated in response to stress,[27] the severity is expected to rise with increasing coronavirus fear.

Another finding from our study was that the presence of comorbidity increased the severity of illness. Similar findings were observed by Tukel *et al.*,[6] that comorbid conditions worsen the severity of obsessions and compulsions. The YBOCS score, D-YBOCS severity score for Contamination and Cleaning and Fear of COVID-19 scale score were found to be statistically higher in OCD with comorbidity group Table 6.

Conclusions

Thus current study has contributed to the information regarding the impact of COVID 19 on patients with OCD. Fear of corona virus was seen in majority of the OCD patients, was mild and associated with increased severity of disease. The OCD patients with comorbidity had significantly higher Y-BOCS score mainly for Contamination and Cleaning and Fear of corona virus.

Limitations

Restriction in the sample size of the study due to the COVID-19 lockdown was one of the limitation. The study did not take into account various other factors including COVID-19 positive status in the past, loss of a family member, relative or colleague due to COVID -19, vaccination status etc which could have confounded the results. Also diagnoses which are not a part of MINI 6.0.0 were assessed clinically and further confirmed on ICD-10 DCR.

Conflicts of interest

Funding Support

References

1. Organization WH. The global burden of disease: 2004 update. World Health Organization; 2008.
2. Khanna S, Reddy YJ. Obsessive compulsive disorder: An Indian perspective. Mumbai: Abbott India Lenbrook Division Publishing 2004;
3. Sadock BJ, Sadock VA. Kaplan & Sadock's comprehensive textbook of psychiatry, Vols. 1-2. lippincott Williams & Wilkins publishers; 2000.
4. Mattiuzzi C, Lippi G. Cancer statistics: a comparison between world health organization (WHO) and global burden of disease (GBD). European journal of public health 2020;30(5):1026–7.
5. Murthy RS. National mental health survey of India 2015–2016. Indian journal of psychiatry 2017;59(1):21.
6. Tükel R, Polat A, Özdemir Ö, Aksüt D, Türksoy N. Comorbid conditions in obsessive-compulsive disorder. Comprehensive psychiatry 2002;43(3):204–9.
7. Quarantini LC, Torres AR, Sampaio AS, Fossaluza V, de Mathis MA, Do Rosário MC, *et al.*. Comorbid major depression in obsessive-compulsive disorder patients. Comprehensive psychiatry 2011;52(4):386–93.
8. Fontenelle LF, Albertella L, Brierley M-E, Thompson EM, Destrée L, Chamberlain SR, *et al.*. Correlates of obsessive-compulsive and related disorders symptom severity during the COVID-19 pandemic. Journal of Psychiatric Research 2021;
9. Kumar A, Somani A. Dealing with Corona virus anxiety and OCD. Asian Journal of Psychiatry 2020;51:102053.
10. Sheehan D. The MINI international neuropsychiatric interview,(Version 7.0. 2) for DSM-5. 2016.
11. Goodman WK, Price LH, Rasmussen SA, Mazure C, Fleischmann RL, Hill CL, *et al.*. The Yale-Brown obsessive compulsive scale: I. Development, use, and reliability. Arch Gen Psychiatry. 1989;46(11):1006–11.
12. Hamilton M. A rating scale for depression. Journal of neurology, neurosurgery, and psychiatry. 1960 Feb;23(1):56.
13. Hamilton MA. The assessment of anxiety states by rating. British journal of medical psychology. 1959;32(1):50–5.
14. horsu DK, Lin C-Y, Imani V, Saffari M, Griffiths MD, Pakpour AH. The fear of COVID-19 scale: development and initial validation. Int J Ment Health Addict. 2020;
15. Rosario-Campos MC, Miguel EC, Quatrano S, Chacon P, Ferrao Y, Findley D, *et al.*. The Dimensional Yale–Brown Obsessive–Compulsive Scale (DY-BOCS): an instrument for assessing obsessive–compulsive symptom dimensions. Mol Psychiatry. 2006;11(5):495–504.

16. Prabhu L, Cherian AV, Viswanath B, Kandavel T, Math SB, Reddy YJ. Symptom dimensions in OCD and their association with clinical characteristics and comorbid disorders. Journal of Obsessive-Compulsive and Related Disorders 2013;2(1):14–21.

17. Jaisoorya TS, Reddy YJ, Srinath S. The relationship of obsessive-compulsive disorder to putative spectrum disorders: results from an Indian study. Comprehensive Psychiatry 2003;44(4):317–23.

18. Khosravani V, Aardema F, Ardestani SMS, Bastan FS. The impact of the coronavirus pandemic on specific symptom dimensions and severity in OCD: A comparison before and during COVID-19 in the context of stress responses. Journal of Obsessive-Compulsive and Related Disorders 2021;29:100626.

19. Sharma LP, Balachander S, Thamby A, Bhattacharya M, Kishore C, Shanbhag V, *et al.*. Impact of the COVID-19 pandemic on the short-term course of obsessive-compulsive disorder. The Journal of nervous and mental disease 2021;209(4):256–64.

20. Foa EB, Huppert JD, Leiberg S, Langner R, Kichic R, Hajcak G, *et al.*. The Obsessive-Compulsive Inventory: development and validation of a short version. Psychological assessment 2002;14(4):485.

21. Davide P, Andrea P, Martina O, Andrea E, Davide D, Mario A. The impact of the COVID-19 pandemic on patients with OCD: effects of contamination symptoms and remission state before the quarantine in a preliminary naturalistic study. Psychiatry Research 2020;113213.

22. Doshi D, Karunakar P, Sukhabogi JR, Prasanna JS, Mahajan SV. Assessing coronavirus fear in Indian population using the fear of COVID-19 scale. International Journal of Mental Health and Addiction 2020;1–9.

23. Sathe HS, Mishra KK, Saraf AS, John S. A cross-sectional study of psychological distress and fear of COVID-19 in the general population of India during lockdown. Annals of Indian Psychiatry 2020;4(2):181.

24. Srivastava A, Bala R, Srivastava AK, Mishra A, Shamim R, Sinha P. Anxiety, obsession and fear from coronavirus in Indian population: a web-based study using COVID-19 specific scales. Int J Community Med Public Health 2020;7(11):4570–7.

25. Fitzpatrick KM, Harris C, Drawve G. Fear of COVID-19 and the mental health consequences in America. Psychological trauma: theory, research, practice, and policy 2020;12(S1):S17.

26. Yıldırım M, Arslan G, Özaslan A. Perceived risk and mental health problems among healthcare professionals during COVID-19 pandemic: exploring the mediating effects of resilience and coronavirus fear. International Journal of Mental Health and Addiction 2020;1–11.

27. Dykshoorn KL. Trauma-related obsessive–compulsive disorder: a review. Health Psychology and Behavioral Medicine: an Open Access Journal 2014;2(1):517–28.