https://doi.org/10.29309/TPMJ/2022.29.10.7175

The Professional Medical Journal
www.theprofesional.com
2022, Volume, 29 Issue, 10

ORIGINAL ARTICLE

Impact of COVID-19 epidemic in prevalence of obsessive-compulsive disorder.

Naeem Ullah Leghari[1], Hafiz Shafique Ahmad[2], Khizra Iqbal[3], Bushra Akram[4]

Article Citation: Leghari N, Amad HS, Iqbal K, Akram B. Impact of COVID-19 epidemic in prevalence of obsessive-compulsive disorder. Professional Med J 2022; 29(10):1526-1532. https://doi.org/10.29309/TPMJ/2022.29.09.7175

ABSTRACT… Objectives: To find out the impact of the COVID-19 epidemic in the prevalence of obsessive-compulsive disorder and differences in sociodemographic factors. **Study Design:** Descriptive study. **Setting:** Department of Psychiatry and Behavioral Sciences, Nishtar Hospital Multan. **Period:** January to March 2022. **Material & Methods:** The sample consisted of 50 OCD patients (Male=34, Females=16). Convenient sampling method was used to approach participants. Yale Brown Obsessive Compulsive scale was used along with Sociodemographic variables. Results were analyzed by using SPSS-21. **Results:** Findings of the study showed that Obsession with ideas of contamination and compulsion related to cleaning and washing rituals were more prevalent during Epidemic. It was also explored that there was significant increase in Incidence and prevalence of OCD during and after epidemic. Male population were more affected by OCD during Epidemic as compared to females. Residents of urban areas were more vulnerable for developing OCD. The incidents of developing OCD during the epidemic was higher in young population especially students. **Conclusion:** It is concluded that prevalence and incidents of OCD increased due to epidemic of COVID-19 Furthermore, it was further observed certain obsessions (obsession of contamination) and specific compulsions (cleaning and washing) was significantly higher than other types of OCD.

Key words: COVID-19 Epidemic, Incidence, Obsessive Compulsive Disorder, Prevalence, Type.

INTRODUCTION

The outbreak of the new coronavirus, discovered in 2019 (COVID- 19), was characterized as a pandemic by the World Health Organization in March.[1] Due to the rapid spread of the infection and paucity of available medical resources, the entire world was affected within a short time. Apart from causing serious damage to the human body, infectious diseases tend to influence mental health. Obsessive-compulsive symptoms during COVID-19 may exacerbate due to increased fear of contamination, and nonspecific factors that increase stress. As epidemic lead to Quarantine and restricted social activities which increased isolation. Recent study in Italy indicated that after 6 weeks of isolation, OCD cases had a higher Y-BOCS score, indicating possible alterations in OCD severity.[2]

People with OCD tend to attribute personal meaning to viruses and germs.[3] This could enhance the development and exacerbation of cleaning/washing compulsions and fear of contamination obsessions, as the virus could be perceived as a threat to an individual's identity. These characteristics could conceivably lead to prolonged distress and anxiety during the current COVID-19 outbreak, especially since the strategies against being infected involve rituals such as increased hand washing. People of all ages with OCD demonstrate impaired goal-directed control and cognitive inflexibility.[4]

Various researches looked at OCD in during COVID-19 timeframe. Varying levels of symptoms exacerbation were documented among people with OCD in examinations of the first phase of the COVID-19 pandemic: 6%[5], 13%[6], and 36%.[7] Furthermore, in a big tertiary hospital in Turkey, 54 percent of young population diagnosed

1. MBBS, DPM, FCPS, Associate Professor & Chairperson Psychiatry, Nishtar Medical University, Multan.
2. MBBS, FCPS (Psych), Assistant Professor Psychiatry & Behavioral Sciences, Nishtar Medical University and Hospital, Multan.
3. MSc, M.Phil, Clinical Psychologist Psychiatry & Behavioral Sciences, Nishtar Medical Hospital, Multan.
4. MSc, ADCP, M.Phil, Ph.D (Scholar), Senior Clinical Psychologist Psychiatry & Behavioral Sciences, Nishtar Medical Hospital, Multan.

Correspondence Address:
Dr. Naeem Ullah Leghari
Department of Psychiatry
Nishtar Medical University, Multan.
naleghari@live.com

Article received on: 18/06/2022
Accepted for publication: 25/08/2022

from OCD reported an exacerbation in OCS, primarily cleaning/washing compulsions and contamination obsessions.[8] Cleaning/washing was the most common compulsion in these trials. The dread of contamination was the most common obsession. One exception is a group of people with OCD[9] who had the most aggressive (harm/violence) obsessions.

Patients may experience the worsening of OCD symptoms in different dimensions during COVID pandemic. Patients who have never presented with symptoms of OCD may experience their onset in the context of this major environmental change. This may lead to increase in psychiatric morbidity worsening quality of life and increased disease burden. However, Purpose of the current study was to investigate prevalence, incidents and types of OCD due to epidemic of COVID-19 in Pakistan as there are only limited researches which has been conducted to explore psychiatric problems which elevated due to epidemic.

MATERIAL & METHODS

The study was conducted in Department of Psychiatry and Behavioral Sciences, Nishtar Medical University & Hospital Multan after obtaining ethical approval Order No:1165 Dated:22-01-2022 from ethical committee of university. Patients were approached from both in-patient and out-patient treatments services.

Fifty OCD patients were included in the study, Male=34, Female=16 of Obsessive Compulsive Disorder with age range of 18-60 years, from January to March, 2022. Patients who fulfilled the diagnostic criteria of OCD according to DSM-5 were selected for the study and all the participants were have ability to understand the content of questionnaires. Patients with OCD comorbid with other psychiatric disorder as well as those who did not met the inclusion criteria were excluded. A Descriptive research design and Convenient from non-probability sampling technique were used to collect data. Written informed consent was taken from the patients. Information was recorded on a prescribed Performa. If needed then assistance was provided to fill the performa. Yale Brown Obsessive Compulsive Scale[10] was administered. Patient clinical care was not compromised and confidentiality was also ensured.

The data was analyzed by using Statistical Package for Social Sciences (SPSS-21) for descriptive and inferential both statistics were used to obtain frequency, percentage. Independent sample test was used to assess difference in demographics variables. Level of significance was 0.05.

RESULTS

Table-I shows demographics characteristics of the participants. Out of 50 participants highest frequencies were observed as the majority of the patients, 34(68%) were male and 16(32%) were females, 35(70%) patients were between age range of 18-30 years, 26(52%) were unmarried and 24(48%) were married, 34 (68%) were residents of urban areas, 37(74%) were belong to Nuclear family system, 22(44%) participants were graduates, 22(44%) of them were students and 22(44%) were belong to middle class socioeconomic status.

Table-II shows highest rates 18(36%) of OCD prevalence and incidence for the last two years following epidemic.

Table-III explores contamination type of obsession were 35(70%) in participants.

Table-IV shows Cleaning and washing type of compulsion were 28(56%) in participants.

Table-V shows that there was significance difference in initiation of OCD before and After COVID-19 epidemic. Before the epidemic results showed (M= 27.16, SD= 5.64) and after COVID-19 (M= 31.28, SD=3.81) t (-2.50), $p<0.05$. Prevalence of OCD was increased after epidemic as compared to before the epidemic.

The Table-VI shows that there was significance difference on Prevalence of OCD among male (M= 29.55, SD= 4.76) and females (M= 25.68, SD=6.11) t (2.44), $p<0.05$, during the epidemic of COVID-19. Prevalence and incidents of OCD were more in males as compared to females.

The Table-VII shows that there was significance difference on urban (M= 30.94, SD= 3.64) and rural (M= 27.69, SD=4.90) t (2.60), p<0.05 locality of participants. Prevalence of OCD was more in patients of urban areas as compare to rural areas.

Demographic Variables	Frequency (Percentage)
Gender	
Male	34(68%)
Female	16(32%)
Age	
18-30 years	35(70%)
31-45 years	12(24%)
45-60 years	3(6%)
Locality	
Urban	34(68%)
Rural	16(32%)
Marital Status	
Married	24(48%)
Unmarried	26(52%)
Family System	
Joint	13(26%)
Nuclear	37(74%)
Education	
Illiterate	0(0%)
Middle	4(8%)
Matric	5(10%)
Inter	8(16%)
Graduation	22(44%)
Post-Graduation	11(22%)
Occupation	
Employee	6(12%)
Unemployed	19(38%)
House Wife	3(6%)
Students	22(44%)
Monthly Income	
10000-20000	7(14%)
21000-30000	3(6%)
31000-40000	6(12%)
41000-50000	6(12%)
50000 -1 lac	22(44%)
Above 1 Lac	6(12%)
Initiation of OCD	
Before Covid-19	36(72%)
After Covid-19	14(28%)

Table-I. Demographic characteristics of the participants (N=50)

Table-VIII shows the analysis of Prevalence and incidents of OCD during Epidemic on four groups of occupation. It indicates that p value is > 0.05 so the result shows that there is no significant difference among four categories of OCD prevalence during and after epidemic**.**

Duration of Illness	Frequency (Percentage)
1 Year	4(8%)
2 Years	18(36%)
3 Years	1(2%)
4 Years	11(22%)
5 Years	5(10%)
6 Years	8(16%)
9 Years	2(4%)
11Years	1(2%)

Table-II. Duration of prevalence and onset of OCD among patients

Type of Obsession	Frequency (Percentage)
Contamination	35(70%)
Aggressive	4(8%)
Somatic	5(10%)
Hoarding	0(0%)
Religious	6(12%)
Any other	0(05%)

Table-III. Nature of obsessions during COVID-19 epidemic (N=50)

Type of Compulsion	Frequency (Percentage)
Cleaning/Washing	28(56%)
Counting	2(4%)
Checking	6(12%)
Ordering/Arranging	4(8%)
Repeating	10(20%)
Any Other	0(0%)

Table-IV. Prevalence of type of compulsions during COVID-19 epidemic (N=50)

Variable	Initiation of OCD	N	M±SD	T	P
OCD	Before COVID-19 epidemic	36	27.16±5.64	-2.50	.005
	After COVID-19 epidemic	14	31.28±3.81		

Table-V. Mean, Standard Deviation, t-value and p value of initiation of OCD before and after COVID-19 Epidemic (N = 50). Note. N=number of patients; M= mean; SD=standard deviation; df = 48 p< 0.05

Variable	Gender	N	M±SD	T	P
OCD	Male	34	29.55±4.76	2.44	.018
	Female	16	25.68±6.11		

Table-VI. Mean, Standard Deviation, t-value and p value of gender on Prevalence of OCD (N = 50). Note. N=number of patients; M= mean; SD=standard deviation; df = 48 p< 0.05

Variable	Locality	N	M±SD	T	P
OCD	Urban	34	30.94±3.64	2.60	.011
	Rural	16	27.69±4.90		

Table-VII. Mean, Standard Deviation, t-value and p value of OCD on basis of locality during COVID-19 Epidemic (N = 50). Note. N=number of patients; M= mean; SD=standard deviation; df = 48 p< 0.05

OCD	Sum of Square	Df	Mean Square	F	Sig
Between Groups	195.938	3	65.313	2.349	.085
Within Groups	1278.942	46	27.803		
Total	1474.880	49			

Table-VIII. One-way analysis of variance on the four groups of occupation Note: P>0.05

Multiple Comparisons						
LSD						
(I) Occupation	(J) Occupation	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Unemployed	Student	4.530	3.245	.169	-2.00	11.06
	Housewife	1.667	3.728	.657	-5.84	9.17
	Employed	.404	3.276	.903	-6.19	7.00
Student	Unemployed	-4.530	3.245	.169	-11.06	2.00
	Housewife	-2.864	2.429	.244	-7.75	2.02
	Employed	-4.127*	1.651	.016	-7.45	-.80
Housewife	unemployed	-1.667	3.728	.657	-9.17	5.84
	Student	2.864	2.429	.244	-2.02	7.75
	Employed	-1.263	2.469	.611	-6.23	3.71
Employed	unemployed	-.404	3.276	.903	-7.00	6.19
	Student	4.127*	1.651	.016	.80	7.45
	Housewife	1.263	2.469	.611	-3.71	6.23

*. The mean difference is significant at the 0.05 level.
Post hoc Analysis shows that significant difference between two categories, students hare more vulnerable to OCD as compare to employees.

DISCUSSION

COVID-19 epidemic has not only affected the physical health but also adverse consequences on mental health of individuals and resulted in psychiatric illness. Findings of our study in Table-I shows sociodemographic characteristics of our participants, proportion of Male participants with OCD was 34(68%) and females were 16(32%) which were suffering from obsessive compulsive disorder. It is observed that in our demographics, frequency of patients with age range of 18 to 30 years 35(70%) were more as compared to other age groups such as participants with age range 31-45 years were 12(24%) and 45-60 years were 3(6%). In this study, frequency of unmarried individuals was higher 26(52%) as compared to patients who were married 24(48%). Furthermore, 34 (68%) were residents of urban areas and 16(32%) were from rural areas. Among them frequency of patients from nuclear family system was more 37(74%) as compared to joint family system 13(26%), majority of patients were educated and their level of education was graduation 22(44%), by occupation highest frequency 22(44%) of

OCD patients were students. As for as 36(72%) of OCD patients' onset of symptoms were before epidemic and 14(28%) patients were those who experienced symptoms of OCD due to epidemic.

Table-II depicted duration of onset of OCD in which maximum frequency observed for the patients with duration of illness for last two years 18(36%). Duration of OCD onset is coinciding with the findings of Zhang et al[11] that after lifting the restricted activities and quarantine in Wuhan city it was observed that percentage of OCD patients was increased 17.93% after three months following the pandemic.

As for the comparison related to nature of obsessions and compulsions in Table-III and Table-IV revealed that percentage of contamination type of obsession was higher 35(70%) in participants as compare to other types of obsessions. It also depicted that percentage of cleaning and washing type of compulsion were 28(56%) in participants. This is in keeping with the study findings of Davide et al[2] that obsessions with content of contamination and compulsions such as cleaning and hand washing are of the most widespread furthermore, patients with history of psychiatric illness started to relapse during epidemic. Another study conducted by Zheng et al[12] also reported that Cleanliness and hygiene rituals has been increased during COVID epidemic. Moreover, study results conducted by Khosravni et al[13] also supports with our results that percentage of obsessions was 10.5% for pre-COVID-19 and during COVID-19 it increased to 14.6% as well as percentage of Compulsions was 9.1% before epidemic and increased during epidemic to 14.1% respectively. Furthermore in same study it was also explored that contamination type of OCD was 9.5% before epidemic and 14.4% was during COVID-19 epidemic.

Results of Table-V showed significant difference for prevalence and incidents of OCD before and after COVID-19 epidemic. Prevalence of OCD cases increased after COVID-19 epidemic 31.2±3.81 as compared to before epidemic 27.1±5.64. This is in keeping with study findings by Abba-Aji et al[14] that the prevalence of OCD symptoms increased during the COVID-19 pandemic, frequency was significantly higher than pre-pandemic incidents. Similarly another study[13] showed consistency with our findings that percentage of patients with OCD before epidemic were 19.6±9.1 and during epidemic it was increased 28.7±8.2. Furthermore, another study of Jelinek et al[15] was similar to our findings that after pandemic 72% of patients reported with OCD or increased intensity in symptoms of OCD. Research by Grant et al[16] also similar to our findings and reported comparison of OCD prevalence before and during epidemic of COVID-19, as mean score was significantly increased from 16.0% to 20.5% on YBOCS.

The results of Table-VI explored the gender differences that there was significant variation observed on prevalence of OCD among male and females. Prevalence and incidents of OCD were more in males 29.5±4.76 as compared to females 25.6±6.11. Our findings are in consistent with a study conducted by Saleem & Gul[17] as they explored that larger number of male participants reported OCD as compared to female. Another study conducted by Mathis et al[18] indicated larger proportion of males (57.4%) with OCD as compared to (42.6%) females.

The Table-VII showed significant difference on locality in our findings. Prevalence of OCD was more in urban areas 30.9±43.64 as compare to rural areas 27.69±4.90. Our findings are in accordance with the study conducted by Rintala, Chudal & Sourander[19] that in Urban Areas 66.9% rates of OCD was significantly elevated as compared to those who were residents of rural areas 17.0%. Our findings were also consistent with another study by Mohammedi et al[20] that significant difference was found in prevalence of OCD, as in rural prevalence was less comparatively than urban areas during epidemic of COVID-19.

Table-VIII of Post hoc Analysis showed that there was no significant difference in categories of occupation except students and employees. Students were at higher risk for developing OCD as compare to employees. These results were somewhat comparable with the findings of Zhang et al[11] that students had 2.10-time risk for

developing OCD than other population. In another study by Fawcett et al[9] there was also a trend toward younger population especially students were more likely to experience OCD in their lifetime than older adults. Another study by Ji et al[21] is coinciding with our findings that prevalence rate of OCD was 29.2% in students and for other population it was 15.1% respectively. Moreover, similar study conducted by Rodin et al[22] revealed that about 92% of students were active on social media as well as extensive coverage of epidemic by mass media. This might be the cause of more prevalence of OCD in the epidemics in students.

CONCLUSION

It is concluded that the COVID-19 epidemic is strongly contributes to deterioration in mental health. Study explored significant increase in the incidence and prevalence of OCD cases following epidemic. Obsessions with thought of contamination and compulsions related to with cleaning and washing rituals were more prevailing. Male population were highly affected by OCD during Epidemic as compared to females. Residents of urban areas were highly vulnerable for developing OCD due to their accessibility and active coverage of pandemic by electronic media. Young population were at high risk for developing OCD due to epidemic. Therefore, early recognition of symptoms and awareness may help to intervene in OCD.

LIMITATIONS & RECOMMENDATIONS

Despite several findings mentioned above, there were some limitations. It was difficult to figure out causal relationship between factors and OCD due to limited sample size. Participants were approached from only one tertiary care hospital. Sample size should be increased to get reliable findings with internal and external validity. The study should be conducted with other samples such as front-line workers as doctor, nurses and other medical staff in epidemic. Intervention based studies may also be conducted to manage OCD symptoms. Same research should be carried on to explore different level of OCD severity such as (mild, moderate and severe).

REFERENCES

1. Silva RM, Shavitt RG, Costa DL. **Obsessive-compulsive disorder during the COVID-19 pandemic.** Braz J Psychiatry. 2021; 43(1):108.

2. 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 Res. 2020; 291(9):1132-13.

3. Aardema F. **COVID-19, obsessive-compulsive disorder and invisible life forms that threaten the self.** J Obsessive Compuls Relat Disord. 2020; 26(7):100558.

4. Gottwald J, de Wit S, Apergis-Schoute AM, Morein-Zamir S, Kaser M, Cormack F, Sule A, Limmer W, Morris AC, Robbins TW, Sahakian BJ. **Impaired cognitive plasticity and goal-directed control in adolescent obsessive-compulsive disorder.** Psychol Med. 2018 Aug; 48(11):1900-1908.

5. Sharma LP, Balachander S, Thamby A, Bhattacharya M, Kishore C, Shanbhag V, Sekharan JT, Narayanaswamy JC, Arumugham SS, Reddy JYC. **Impact of the COVID-19 Pandemic on the Short-Term Course of Obsessive-Compulsive Disorder.** J Nerv Ment Dis. 2021; 209(4):256-264.

6. Rajkumar RP. **Contamination and infection: What the coronavirus pandemic could reveal about the evolutionary origins of obsessive-compulsive disorder.** Psychiatry Research. 2021; 289:113062.

7. Benatti B, Albert U, Maina G, Fiorillo A, Celebre L, Girone N, Fineberg N, Bramante S, Rigardetto S, Dell'Osso B. **What happened to patients with obsessive compulsive disorder during the COVID-19 Pandemic?** A Multicentre Report from Tertiary Clinics in Northern Italy. Front Psychiatry. 2020; 11(7): 720.

8. Tanir Y, Karayagmurlu A, Kayan A, Kaynar TB, Dambasan BN, et al. **Exacerbation of obsessive compulsive disorder symptoms in children and adolescents during COVID-19 pandemic.** Psychiatry Research, (2020); 293(11): 113363.

9. Fawcett EJ, Power H, Fawcett JM. **Women are at greater risk of OCD Than Men: A Meta-Analytic Review of OCD Prevalence Worldwide.** J Clin Psychiatry. 2020; 81(4):19r13085.

10. Goodman WK, Price LH, Rasmussen SA, Mazure C, Delgado P, Heninger GR, Charney DS. **The Yale-Brown Obsessive Compulsive Scale.** II. Validity. Arch Gen Psychiatry. 1989; 46(11):1012-6.

11. Zhang WR, Wang K, Yin L, Zhao WF, Xue Q, Peng M, et al. **Mental health and psychosocial problems of medical health workers during the COVID-19 epidemic in China.** Psychother Psychosom. 2020; 89:242-50.

12. Zheng Y, Xiao L, Xie Y, Wang H, Wang G. **Prevalence and characteristics of obsessive-compulsive disorder among urban residents in Wuhan during the stage of regular control of coronavirus disease-19 epidemic.** Front Psychiatry. 2020; 11(12):594167.

13. Khosravani V, Aardema F, Ardestani SM, Farangis Sharifi 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.

14. Abba-Aji A, Li D, Hrabok M, Shalaby R, Gusnowski A, Vuong W, Surood S, Nkire N, Li XM, Greenshaw AJ, Agyapong VIO. **COVID-19 Pandemic and Mental Health: Prevalence and correlates of new-onset obsessive-compulsive symptoms in a Canadian province.** Int J Environ Res Public Health. 2020; 17(19):6986.

15. Jelinek L,Moritz S,Miegel F & Voderholzer U. **Obessive-compulsive disorder during COVID-19: Turning a Problem into an oppertinity?** Journal of Anxiety Disorder. 2021; 77:102329.

16. Grant JE,Drummond L, Nicholson TR, Fagan H & Baldwin DS. **Obsesive compulsive symptoms and the COVID-19 pendemic: A rapid scope review.** Neuroscience and Biobehavioral Reviews. 2022.132:1086-1098.

17. Saleem T, Gul S. **Prevalence of obsessions and compulsions among adults of Pakistani community.** Int J Acad Res. 2021; 3:348-53.

18. Mathes BM, Morabito DM, Schmidt NB. **Epidemiological and clinical gender differences in OCD.** Curr Psychiatr Rep. 2019; 21:36. 10.1007/s11920-019-1015-2.

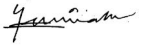
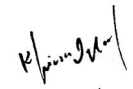
19. Rintala H, Chudal R, Leppämäki S, Leivonen S, Hinkka-Yli-Salomaki S, Sourander A. **Register-based study of the incidence, comorbidities and demographics of obsessive-compulsive disorder in specialist healthcare.** BMC Psychiatry. 2017; 17(1):64.

20. Badrfam R, Zandifar A. **Coronavirus disease 2019 in Iran: The need for more attention to primary health care.** Public Health. 2020; 182:187.

21. Ji G, Wei W, Yue K-C, Li H, Shi L-J, Ma J-D, et al. **Effects of the COVID-19 pandemic on obsessive-compulsive symptoms among university students: Prospective cohort survey study.** J Med Internet Res. 2020; 22(9):e21915.

22. Rodin P, Ghersetti M & Odan T. **Disentangling rhetorical subarenas of public health crisis communication: A study of the 2014-2015 Ebola outbreak in the news media and social media in Sweden.** J Contingencies Crisis Management. 2019; 27(3), 237-246.

AUTHORSHIP AND CONTRIBUTION DECLARATION

No.	Author(s) Full Name	Contribution to the paper	Author(s) Signature
1	Naeem Ullah Leghari	Main script preparation, Supervision, Review of study, Final prof reading, Discussion.	
2	Hafiz Shafique Ahmad	Methodology, Literature review, Critical analysis.	
3	Khizra Iqbal	Method, Data collection, Data entry, Data analysis and Results, Drafting.	
4	Bushra Akram	Data collection, Review, Technical support.