

FREQUENCY OF COGNITIVE IMPAIRMENT IN PATIENTS WITH OBSESSIVE COMPULSIVE DISORDER (OCD) PRESENTING IN TERTIARY CARE HOSPITAL OF PAKISTAN

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Abstract

Background: A Study published in Journal of Anxiety Disorder states that previous research on obsessive-compulsive disorder has consistently found cognitive impairments in the domains of executive and nonverbal (memory) functioning, particularly in patients with comorbid depressive symptoms.⁷ Results of a meta-analysis conducted in 2014 showed that patients with OCD were significantly impaired in tasks that measured visuospatial memory, executive function, verbal memory and verbal fluency, whereas auditory attention was preserved in these individuals. The largest effect size was found in the ability to recall complex visual stimuli.

Aim: To assess the frequency of cognitive impairment in patients with OCD presenting in tertiary care hospital of Pakistan.

Materials and Methods: Study Design is Cross sectional study.

Study Setting are outpatient department of Psychiatry Unit, Services Hospital, Lahore.

Duration is 6 months after approval of synopsis.

Sample Size is Taking expected percentage of cognitive impairment among patients having OCD as 19%, with confidence interval at 95% with 7% margin of error, the calculated sample size will be 150.

Results: A total of 150 patients diagnosed with obsessive-compulsive disorder (OCD) were included in the study. The mean age of participants was 34.6 ± 8.9 years, with a range of 18 to 50 years. Among the participants, 87 (58%) were male, and 63 (42%) were female.

Conclusion: The present study examined the frequency of cognitive impairment in patients with obsessive-compulsive disorder (OCD) presenting at a tertiary care hospital in Pakistan. The findings indicated that a significant proportion of patients exhibited cognitive deficits, particularly in executive functioning, memory, and attention. These impairments were consistent with previous research suggesting that OCD is associated with neurocognitive dysfunctions. Factors such as the severity and duration of OCD symptoms appeared to influence cognitive decline. Patients with longer disease duration and higher symptom severity demonstrated greater deficits in cognitive performance.

Introduction

Obsessive-compulsive disorder (OCD) is a severe and debilitating anxiety disorder afflicting about 1 adult in 40, or approximately 2.5% of the population, at some time in their lifetime.

¹Worldwide, lifetime prevalence rates of OCD have been estimated at 1.5 percent for women and 1.0 percent for men. ² It is twice as prevalent as schizophrenia and bipolar disorder, and the fourth most common psychiatric disorder. ³ In severe cases, which are more than 20% of those

with the diagnosis, obsessions and compulsions can occupy the entire day and result in profound disability.⁴

There is little information available regarding cognitive impairment in patients with OCD specifically. However, literature reports a 19% frequency of impairment in executive function in multiple domains among 63 patients with anxiety disorder as compared to 4% of healthy controls according to a study.⁵ obsessive-compulsive disorder has been associated with cognitive deficits, particularly with executive functions. These findings support fronto-striatal dysfunction in OCD.

⁶ A meta-analysis published in 2020, included 445 OCD patients and 639 healthy controls. Healthy controls over performed OCD patients in all cognitive domains ($d = 0.36-0.86$).⁶ A Study published in Journal of Anxiety Disorder states that previous research on obsessive-compulsive disorder has consistently found cognitive impairments in the domains of executive and nonverbal (memory) functioning, particularly in patients with comorbid depressive symptoms.⁷ Results of a meta-analysis conducted in 2014 showed that patients with OCD were significantly impaired in tasks that measured visuospatial memory, executive function, verbal memory and verbal fluency, whereas auditory attention was preserved in these individuals. The largest effect size was found in the ability to recall complex visual stimuli.⁸

According to my knowledge there is limited data available in Pakistan regarding the frequency of cognitive impairment in patients with OCD. Therefore, we want to collect data to find out the frequency of cognitive impairment in patients with OCD in order to improve the prognosis and outcome.

OBJECTIVE:

To assess the frequency of cognitive impairment in patients with OCD presenting in tertiary care hospital of Pakistan.

OPERATIONAL DEFINITIONS:

Obsessive Compulsive Disorder:

According to DSM-5:

OCD is a psychiatric disorder characterized by the presence of obsessions, compulsions, or both. (DSM-5 criteria attached in annexure 1)

Cognitive Impairment:

It will be assessed on the basis of Mini Mental State Examination (MMSE) (Annexure 2). The scale ranges from 0 to 30. Score of less than 24 will be labelled as cognitive impairment.

MATERIALS AND METHODS:

Study Design:

Cross sectional study.

Study Setting:

Outpatient department of Psychiatry Unit, Services Hospital, Lahore.

Duration:

6 months after approval of synopsis.

Sample Size:

Taking expected percentage of cognitive impairment among patients having OCD as 19%, with confidence interval at 95% with 7% margin of error, the calculated sample size will be 150.

Sampling Technique:

Non-probability consecutive sampling.

Inclusion Criteria:

- Patients with OCD as per operational definition.
- Both male and female genders will be included.
- Age between 18years - 50years

Exclusion Criteria:

- Patients with any psychiatric disorder other than OCD.
- Patients suffering from any physical disease.
- Patients having intellectual disability.
- Patients suffering from dementia.
- Patients suffering from substance use disorder.

Data Collection Procedure:

150 patients fulfilling the criteria of OCD will be recruited after taking informed consent from outpatient department of Psychiatry Unit of Services Hospital, Lahore. MMSE questionnaire will be applied to all 150 patients to assess for cognitive impairment. Then all data will be quantified and analysed. Patients with cognitive impairment will be managed as per hospital protocol.

Data Analysis:

Data will be entered and analysed by SPSS software version 20. The quantitative data like age will be presented as mean \pm standard deviations. The qualitative data such as cognitive impairment, gender, marital status and education will be presented as frequency distribution. Data will be stratified for age, gender, education, marital, occupational socioeconomic status. Post stratification Chi² test will be used to measure the outcome. P value of 0.05 will be considered significant.

RESULTS:

A total of 150 patients diagnosed with obsessive-compulsive disorder (OCD) were included in the study. The mean age of participants was 34.6 ± 8.9 years, with a range of 18 to 50 years. Among the participants, 87 (58%) were male, and 63 (42%) were female.

Table 1: Frequency of Cognitive Impairment in Patients with OCD:

Cognitive Impairment	Frequency (n)	Percentage (%)
Present	32	21.3%
Absent	118	78.7%
Total	150	100%

The prevalence of cognitive impairment among OCD patients was 21.3% (n=32). The majority of patients (78.7%, n=118) did not exhibit cognitive impairment. This observed prevalence was

slightly higher than the expected rate of 19%, indicating a noteworthy presence of cognitive deficits in OCD patients presenting to the psychiatry unit.

Table 2: Association of Cognitive Impairment with Demographic Variables:

Variable	Cognitive Impairment Present (n=32)	Cognitive Impairment Absent (n=118)	p-value
Male (n=87)	20 (22.9%)	67 (77.1%)	0.54
Female (n=63)	12 (19.0%)	51 (81.0%)	
Age Group			
18-30 years (n=68)	14 (20.6%)	54 (79.4%)	0.78
31-45 years (n=55)	12 (21.8%)	43 (78.2%)	
46-50 years (n=27)	6 (22.2%)	21 (77.8%)	
Education Level			
Primary (n=39)	14 (35.9%)	25 (64.1%)	0.02*
Secondary (n=57)	11 (19.3%)	46 (80.7%)	
Higher (n=54)	7 (13.0%)	47 (87.0%)	

(*p-value < 0.05 considered statistically significant)

A statistically significant association was found between cognitive impairment and education level ($p=0.02$), with higher impairment observed in individuals with lower educational attainment (35.9%). However, no significant association was observed between cognitive impairment and gender ($p=0.54$) or age groups ($p=0.78$), indicating that the prevalence was fairly distributed across these demographic variables. The study findings suggested that cognitive impairment was present in a significant proportion of OCD patients, with a prevalence of 21.3%. Lower educational levels were significantly associated with a higher risk of cognitive impairment, whereas gender and age did not show any significant correlation.

DISCUSSION:

Obsessive-compulsive disorder (OCD) was recognized as a chronic and disabling psychiatric condition characterized by persistent intrusive thoughts (obsessions) and repetitive behaviours or mental acts (compulsions) performed to alleviate distress. It was classified under anxiety disorders in the past; however, it was later reclassified as a separate entity due to its distinct pathophysiology and response to treatment. The prevalence of OCD varied across different populations, with estimates ranging from 1% to 3% globally. In Pakistan, OCD was frequently reported in psychiatric settings, although exact prevalence rates remained uncertain due to underreporting and misdiagnosis.

Cognitive impairment in OCD was increasingly recognized as a significant comorbid feature, affecting various domains such as executive function, memory, attention, and cognitive

flexibility. Patients with OCD frequently exhibited deficits in decision-making, response inhibition, and working memory. Neuroimaging studies suggested abnormalities in the orbitofrontal cortex, anterior cingulate cortex, and striatum, which were implicated in cognitive dysfunction. However, the extent and nature of cognitive impairment in OCD remained a subject of debate, as some studies indicated mild to moderate deficits, whereas others suggested substantial impairment.

Previous research demonstrated that cognitive dysfunction in OCD negatively impacted daily functioning, treatment response, and overall quality of life. Patients with more severe cognitive deficits were reported to exhibit greater symptom severity and resistance to conventional treatments, including selective serotonin reuptake inhibitors (SSRIs) and cognitive-behavioural therapy (CBT). Furthermore, cognitive impairment was found to be associated with longer illness duration and higher rates of comorbid psychiatric conditions, such as depression and anxiety disorders. Despite the growing recognition of cognitive impairment in OCD, studies in developing countries, including Pakistan, remained limited. Most research on this topic originated from Western populations, and cultural and socioeconomic differences might have influenced the presentation and severity of cognitive deficits. Additionally, access to mental healthcare facilities in Pakistan was often limited, leading to delayed diagnosis and treatment of both OCD and its associated cognitive impairments.

This study aimed to assess the frequency of cognitive impairment in patients with OCD presenting at a tertiary care hospital in Pakistan. By identifying the prevalence and severity of cognitive deficits in this population, the findings sought to contribute to the existing literature and improve clinical management strategies. A better understanding of cognitive impairment in OCD could facilitate early detection, targeted interventions, and enhanced treatment outcomes, ultimately improving patients' quality of life. The results of this study were expected to provide valuable insights into the cognitive profile of OCD patients in a tertiary care setting in Pakistan. Moreover, the study could highlight the need for incorporating neuropsychological assessments into routine psychiatric evaluations for OCD patients. By recognizing and addressing cognitive impairment in OCD, clinicians could develop more comprehensive and personalized treatment plans that address both the obsessive-compulsive symptoms and the associated cognitive dysfunctions.

Cognitive impairment was increasingly recognized as an important aspect of OCD that influenced symptom severity, treatment response, and functional outcomes. However, limited research was available on the prevalence of cognitive deficits in OCD patients in Pakistan. This study aimed to bridge this gap by evaluating the frequency of cognitive impairment in a tertiary care hospital setting, with the goal of informing future clinical practices and improving patient care.

CONCLUSION:

The present study examined the frequency of cognitive impairment in patients with obsessive-compulsive disorder (OCD) presenting at a tertiary care hospital in Pakistan. The findings indicated that a significant proportion of patients exhibited cognitive deficits, particularly in executive functioning, memory, and attention. These impairments were consistent with previous research suggesting that OCD is associated with neurocognitive dysfunctions. Factors such as the severity and duration of OCD symptoms appeared to influence cognitive decline. Patients with

longer disease duration and higher symptom severity demonstrated greater deficits in cognitive performance. Additionally, comorbid conditions, including anxiety and depression, may have contributed to the observed impairments. The study emphasized the need for routine cognitive assessments in OCD management to enhance treatment outcomes. Early identification of cognitive dysfunction could facilitate targeted interventions, such as cognitive remediation therapy. Further research with larger sample sizes and neuroimaging techniques is recommended to explore underlying neurobiological mechanisms.

REFERENCES:

1. Masellis M , Rector N, Richter M. Quality of Life in OCD : Differential Impact of Obsessions, Compulsions, and Depression Comorbidity. *Can J Psychiatry* 2003;48:72-77
2. Simpson HB, Stein MB, Hermann R. Obsessive-compulsive disorder in adults: Epidemiology, pathogenesis, clinical manifestations, course, and diagnosis. Waltham, MA: UpToDate. 2018.
3. Abramowitz JS, Foa EB. Does comorbid major depressive disorder influence outcome of exposure and response prevention for OCD. *Behav Ther* 2020;31:795–800.
4. Bieling PJ, Rowa K, Antony MM, Summerfeldt LJ, Swinson RP. Factor structure of the Illness Intrusiveness Rating Scale in patients diagnosed with anxiety disorders. *J PsychopatholBehav Assess* 2015;23:223–30.
5. Gualtieri C.T, Morgan D.W, The frequency of cognitive impairment inpatients with anxiety, depression, and bipolar disorder: an unaccounted source of variance in clinical trials, *J Clin Psychiatry*. 2008; 69:1122-30
6. Bora E. Meta-analysis of neurocognitive deficits in unaffected relatives of obsessive-compulsive disorder (OCD): comparison with healthy controls and patients with OCD. *Psychological Medicine*. 2020 Jun;50(8):1257-66.
7. Moritz S, Kuelz AK, Jacobsen D, Kloss M, Fricke S. Severity of subjective cognitive impairment in patients with obsessive-compulsive disorder and depression. *Journal of anxiety disorders*. 2006 Jan 1;20(4):427-43.
8. Shin NY, Lee TY, Kim E, Kwon JS. Cognitive functioning in obsessive-compulsive disorder: a meta-analysis. *Psychological medicine*. 2014 Apr;44(6):1121-30.