

## ORIGINAL ARTICLE

# Prevalence of Obsessive-Compulsive Symptoms in an Outpatient Sample of Patients with Schizophrenia

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## ABSTRACT

**Objective:** To assess the prevalence of clinically significant obsessive compulsive symptoms (OCS) in an outpatient sample of patients with schizophrenia and investigate the correlates of this association in the study subjects.

**Study Design:** Descriptive, cross sectional study.

**Place and Duration of Study:** The study was conducted at the outpatients' clinic of the Department of Psychiatry, Pakistan Railways Teaching Hospital, Rawalpindi from 05<sup>th</sup> October 2016 to 10<sup>th</sup> March 2017.

**Materials and Methods:** Fifty consecutively presenting schizophrenic cases were assessed by Yale-Brown Obsessive Compulsive Scale to determine the presence and severity OCS. Positive and Negative Symptoms Scale was used to study the positive and negative symptoms of schizophrenia and Hamilton Rating Scale for depression was administered to evaluate depressive symptoms. A demographic checklist was used to obtain general information. Data was analyzed by SPSS version 22 and descriptive statistics were employed.

**Results:** The mean age of the study participants was  $31.1 \pm 9.9$  years, and the mean duration of schizophrenia was  $8.8 \pm 5.9$  years. Forty percent of the patients had significant OCS and 16% had DSM-5 diagnosis of OCD. The overall score on Y-BOCS was significantly correlated with the total score on PANSS, PANSS-Positive score, PANSS-General score, and the total score on HRSD.

**Conclusion:** More than 1/3 of the sample had OCS and this was significantly correlated with positive psychotic symptoms and overall psychopathology. Moreover, OCS were associated with more depressive symptoms in the schizophrenic subjects studied. These results warrant further investigation of obsessive compulsive comorbidity in schizophrenia.

**Key Words:** Dopamine, Obsessive Compulsive Symptoms, Positive and Negative Symptoms Scale, Schizophrenia, Schizo-Obsessive Disorder, Serotonin.

## Introduction

The description of obsessive-compulsive symptoms (OCS) in psychotic disorders was first given more than 80 years ago, yet their true prevalence in schizophrenia is only now being systematically explored.<sup>1</sup> An increasing amount of literature alludes to the fact that OCS may occur in many more patients than initially assumed. Many recently published reports have investigated this issue in both inpatient and outpatient settings and have consistently shown

frequent comorbidity of both full blown obsessive compulsive disorder (OCD) and OCS in patients with schizophrenia spectrum disorders.<sup>2</sup> Different studies have reported a wide range in the frequency of OCS/OCD in schizophrenia, varying from 8% to 42%.<sup>3</sup> Data also suggest that the presence of obsessions and compulsions among persons with schizophrenia is of considerable clinical significance and a Turkish study is helpful in assessing the impact on the overall disease trajectory. According to this study by Gulec et al., schizophrenia with OCS may be a specific subtype which does not have more severe psychotic symptoms, but greater depression and anxiety, and the latter are related to severer impairment in psychosocial functioning.<sup>4</sup> Another study conducted in the USA with a cross-sectional design demonstrated that about 1/3 of patients with schizophrenia or schizoaffective disorder had noteworthy OCS; however, these did not of themselves influence the clinical outcome of the

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patients. In this sample, the OCS began concurrently or after the occurrence of psychotic symptoms in the majority of patients, and further studies were required to delineate the relevance and pathological basis for the co-existence of OCS in non-affective psychoses.<sup>5</sup> While the existing literature is suggestive of high co-occurrence of OCS/OCD in schizophrenia, whether this comorbidity implies the presence of a separate diagnostic entity, i.e. that of schizo-obsessive disorder is an open question. Nonetheless, recent comprehensive meta-analyses have shed light on this relationship and show that OCS are more often encountered in those cases who have long-standing schizophrenia, and that these symptoms negatively affect cognitive and executive functioning in the latter patients.<sup>6</sup>

In the present study, we investigated the rate of OCS and OCD among patients who were primarily diagnosed with schizophrenia. We also examined the relationship of OCS to schizophrenic symptoms to provide a clinical description of OCS in the schizo-obsessive subgroup of chronic schizophrenic patients.

## Materials and Methods

The study was descriptive, cross sectional in design and was conducted in the out-patients clinic of the department of psychiatry, Pakistan Railways Teaching Hospital, an affiliate of Islamic International Medical College, Rawalpindi. The study duration was from 05<sup>th</sup> October 2016 to 10<sup>th</sup> March 2017. The subjects included 50 patients who had an initial or previous diagnosis of schizophrenia and consecutive, non-probability sampling technique was employed. Prior to the start of the study permission was obtained from the Ethical Review Board of the Islamic International Medical College.

Inclusion criteria were:

- i) Diagnosis of schizophrenia according to the criteria of DSM-5,
- ii) Ages between 18–65 years,
- iii) Giving informed consent, and
- iv) Patients who could be evaluated by research scales used in the study, for example having no language barrier.

Exclusion criteria were:

- i) Learning disabilities,
- ii) Presence of neurological or physical diseases, and

- iii) Addiction to substances of abuse.

Diagnosis of schizophrenia was made by history and mental state examination according to DSM-5 and the presence of OCS was ascertained in a similar manner. Obsessions were defined as persistent, repetitive, intrusive and distressing thoughts not related to the patients' delusions; and compulsions as repetitive goal-directed rituals clinically distinguishable from schizophrenic mannerisms. The type and severity of OCS were assessed with the Yale-Brown Obsessive Compulsive Scale (Y-BOCS), including the symptom check-list. A minimum score of 7 on the Y-BOCS and at least 6-month duration of OCS were required for the diagnosis of clinically significant OCD. The schizophrenic symptoms were assessed with Positive and Negative Symptoms Scale (PANSS) and the depressive symptoms were evaluated by Hamilton Rating Scale for Depression (HRSD). The participants were directly interviewed by a consultant psychiatrist and the psychometric instruments were administered by a team of trained doctors and psychologists. The demographic profile was ascertained by a separate proforma.

This was a descriptive study; the data was parametric in nature and was analyzed with Statistical Package for Social Sciences (SPSS) version 23 for Windows. Descriptive statistics were employed that included percentages of schizophrenic subjects with obsessive-compulsive symptoms. All values were presented as mean  $\pm$  standard deviation. Pearson's correlation coefficient was used to assess the possible relationship between OCS and schizophrenic symptoms and *p*-value of 0.01 was considered significant.

## Results

A total of 50 patients (30 men, 20 women) with a DSM-5 diagnosis of schizophrenia were included in the study (Table I). In entirety, 16 of the patients were first diagnosis schizophrenia and 34 had already received this diagnosis. The mean age of the study participants was  $31.1 \pm 9.9$  years, and the mean duration of schizophrenia was  $8.8 \pm 5.9$  years. The mean number of hospitalizations of the patients was  $2.0 \pm 1.0$ . A sum of 20 patients (40%) was found to have OCS and the mean score on the Y-BOCS for these patients was  $10.7 \pm 5.7$ . In total, 8 of these subjects (Y-BOCS total score  $\geq 7$ ) also met the DSM-5 criteria for OCD. The overall score on Y-BOCS was

significantly correlated with the total score on PANSS, PANSS-Positive score, PANSS-General score, and the total score on HRSD (Table III). The Y-BOCS total score was not significantly correlated with negative-PANSS score, duration of illness, number of hospitalizations and use of typical or atypical antipsychotics.

**Table I: Clinical and Demographic Features of Study Participants (n = 50)**

Demographic and Disease Characteristics	Schizophrenia Patients
Sex (M/F)	30/20
1 <sup>st</sup> versus previously diagnosed	16/34
Age of subjects	31.1 ± 9.9
Duration of illness (years)	8.8 ± 5.9
Number of hospitalizations	2.0 ± 1.0
Typical versus atypical antipsychotics	15/35

Results are expressed as mean ± standard deviation

**Table II: Psychometric Scales Scores in Study Subjects**

Study subjects	Score
Cases with OCS	n = 20
Cases with OCD (Y-BOCS score ≥ 7)	n = 8
Y-BOCS total score	10.7 ± 5.7
PANSS total	60.5 ± 14.5
PANSS Positive	15.0 ± 5.5
PANSS Negative	12.2 ± 4.8
PANSS General	33.5 ± 9.5
HRSD total score	18.2 ± 10.6

Results are expressed as means ± standard deviation

**Table III: Relationship of Y-BOCS to PANSS and HRSD in the Study Subjects**

Pearson's values	PANSS total	PANSS positive	PANSS negative	PANSS general	HRSD total
Y-BOCS total	0.369	0.398	0.765	0.452	0.385
Pearson's Correlation coefficient	0.008	0.003	0.11	0.002	0.007

Statistically significant at 0.01

**Discussion**

In this study, the prevalence of OCS among cases with schizophrenia seen as outpatients is 40%, while that of full criteria OCD is 16%. Moreover, here obsessive-compulsive symptoms are found significantly correlated to total PANSS scores, PANSS-positive symptoms, and depressive symptoms but are not significantly associated with PANSS-negative

symptoms, duration of illness, number of hospitalizations, and type of antipsychotic drug used. This rate is in line with that reported in recently conducted studies, as modern research suggests that the frequency of obsessive-compulsive symptomatology in patients with schizophrenia is between 30 and 60%.<sup>7</sup> This implies the presence of at least two clinically significant OCS in persons suffering from schizophrenia.

A well conducted Indian study in consecutive adult admitted patients showed that 18.5% of the schizophrenic cases had OCD. These patients had higher frequency of OCD in family members, more comorbidity with personality disorders, but comparable clinical profiles with schizophrenic subjects without OCS.<sup>8</sup> Another study carried out in long standing schizophrenia patients reported that OCD and OCS were observed in 14.1% and 51.1% of the cases respectively. In this investigation patients with obsessive compulsive symptomatology had an earlier age of onset and a more severe illness with greater functional impairment.<sup>9</sup> The authors suggested that there were significant differences between the two groups and that patients with OCS represented a specific sub-type of schizophrenia. Another study which was carried out in stable outpatients came up with interesting conclusions. It observed that about 9 % of the sample had DSM-IV OCD, whereas OCS were more highly prevalent. The former group had higher scores on HRSD and positive symptom sub-scale of PANSS, but neuropsychological testing did not reveal more cognitive impairment in clinically stable schizophrenic patients with OCD than their counterparts.<sup>10</sup>

The above mentioned differences in rates of occurrence of OCS/OCD in patients with schizophrenia can be due to a variety reasons. Firstly, the studies were conducted in varied samples, represented by inpatients, outpatients or those transitioning from one status to another. Secondly, the cut-off scores for Y-BOCS employed were discrepant, yielding widely divergent frequencies of OCD. Finally, some studies had a cross-sectional design, while others were prospective in nature. A similar divergence in clinical correlates is also seen which most likely arose from demographic differences in study populations, instruments

applied and study designs. Data indicate that co-existence of OCS is of potential clinical importance and in this respect recent comprehensive reviews and meta-analyses are informative. Accordingly, a study which systematically reviewed the extant literature concluded that the presence of obsessions and compulsions was associated with greater severity of psychosis in schizophrenic subjects, represented by more positive and negative symptoms and psychosocial impairments.<sup>11</sup>

Undoubtedly, OCS occur more frequently than expected in schizophrenia, but the neurobiological basis of this linkage is still not well defined. Neuroimaging studies point to the involvement of same limbic and paralimbic structures, most importantly the prefrontal cortex, basal ganglia and the thalamus. In this regard, the neurotransmitter substrate is also identical with dopaminergic and serotonergic abnormalities being particularly incriminated in the pathogenesis of both disorders. These and other related anomalies may be responsible for very high rates of OCS in schizophrenia spectrum disorders.<sup>12</sup> In future elucidation of cellular and molecular pathophysiologic mechanisms may lead to better insights in this respect and more studies are therefore warranted.

Lastly, there are limitations to this study. The small sample size and the outpatient setting preclude the possibility of a fully representative group of patients. Also, bias in the administration of the psychometric instruments cannot be ruled out. Finally, many patients were new cases of schizophrenia, and studying a more chronic sample may yield different results.

### Conclusion

Although this is a small study in an outpatient sample of consecutive schizophrenic subjects, it does demonstrate the very high frequency of OCS in non-affective psychosis. This has important treatment implications, as both psychotic symptoms and OCS must be managed simultaneously for better outcomes. In the initial phases, combination of anti-obsessive drugs like selective serotonin reuptake inhibitors should be used together with anti-psychotic medications, although established guidelines are not helpful in this matter. However,

the treating physician must be cognizant of the association between OCS and schizophrenia and use empirically proven treatment modalities in the absence of evidence based recommendations.

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