



**AN EPIDEMIOLOGICAL STUDY AND SEVERITY ASSESSMENT OF OBSESSIVE-COMPULSIVE DISORDER IN WARANGAL REGION, INDIA**

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**ABSTRACT**

**Objective:** The objective of this study was to clinically evaluate the prevalence and assess the severity of obsessive compulsive disorder (OCD) in Warangal region, India. **Materials and Methods:** A prospective observational study was carried out for a period of 6 months from July to December 2013 at various Neuropsychiatric Centers in Warangal region. A total of 113 patients (male: 65, female: 48) were screened using specially designed data collection form to collect and record demographic data. Structured interviews were conducted to obtain Yale Brown Obsessive- Compulsive Scale (YBOCS) scores. All the data were analyzed by ANOVA and Chi Square test using Statistical Package for Social Sciences (SPSS) software version by dividing the patients into age groups of decades from 11 to 60. **Results:** Obsessive compulsive disorder was more prevalent among subjects between the age of 21 and 30 years (46%), and of the patients were literates (98.2%). More patients were married (61.6%) than single (38%). The most prevalent obsession was fear of harming (81.25%) while of the most prevalent compulsions was repeating (76.1%). Based on YBOC scale, OCD severity was categorized into subclinical (2.7%), mild (23.9%), moderate (41.6%), severe (23%) and extreme (8.9%). **Conclusion:** The prevalence of OCD condition was more among the age group of 21 to 30 years and among literates. Sociodemographic factors like age, socioeconomic status and urban were risk factors in assessing the severity of OCD.

**KEYWORDS:** obsessive-compulsive disorder, epidemiology, prevalence, YBOC Scale.

**INTRODUCTION**

Obsessive-compulsive disorder (OCD) is a chronic, heterogeneous, neuropsychiatric anxiety disorder, characterized by the presence of either obsessions, compulsive rituals or more commonly both. <sup>[1]</sup> The OCD was once considered a relatively rare condition until about two decades ago, but is now viewed as not only one of the most prevalent psychiatric disorder <sup>[2]</sup> but also one of the most disabling medical disorders. <sup>[3]</sup> The OCD was estimated to be the 11<sup>th</sup> leading cause of non –fatal burden in the world in 1990, accounting for 2.2% of total years lived with disability (YLD) approximately the same as schizophrenia. <sup>[4]</sup> The Epidemiologic Catchment Area (ECA) study provided the first epidemiological data for Obsessive- compulsive disorder that was based a nationally representative sample and reliable diagnostic criteria. <sup>[5]</sup> Obsessive compulsive disorder was the fourth most prevalent psychiatric disorder, with a lifetime prevalence of 2.5% <sup>[5]</sup> Compared to the people with other anxiety disorder or unipolar mood disorders, those with OCD are less likely to be married, more likely to be unemployed, and more likely to report impaired social and occupational functioning. <sup>[6]</sup> This disorder has a lifetime rate of 2-3% in the global population. <sup>[6, 7]</sup> There

is only one epidemiological study from India <sup>[8]</sup> which showed lifetime prevalence of 0.6% which is considerably lower than the 2-3% rate reported in the Europe and North America <sup>[5, 9]</sup> but, similar to rates of 0.5-0.9% was reported in Taiwan. <sup>[10]</sup> Because the rate of OCD varies from country to country. The objective of this study was to investigate and document the OCD patients, the prevalence, predominant symptoms and assess its severity in patients attending Neuropsychiatry clinics in Warangal region.

**MATERIALS AND METHODS**

**Study sites**

The study was conducted at the three neuropsychiatric hospitals in the Warangal region: Jagruthi Neuro Psychiatric Hospital, Jayakrishna Psychiatric Care and Counseling Center, and Swasthik Samalochana Hospital after approval from the Institutional Ethics Committee of St. Peter's Institute of Pharmaceutical Sciences, Warangal.

**Patient data collection form**

A specially designed patient data collection form was prepared to meet the study requirements for both in-

patients and out-patients by referring to various standard text books and journals<sup>[1,6]</sup>, which included demographic details of the patient educational qualification, marital status, occupation, family annual income; obsessions and compulsion symptoms, social habits, family history and medication history, Yale-Brown Obsessive-Compulsive Scale (Y-BOCS) score and treatment chart along with follow-up.

#### Severity assessment questionnaire

A standard YBOCS, was designed to rate the severity and type of symptoms in the patients with OCD, obtained from the patient's report; but the final rating was based on the answers to the questions on (Y-BOCS).

#### Study procedure

The study was initiated in the above mentioned psychiatric hospitals by selecting the patients based on inclusion and exclusion criteria for the study. The inclusion criteria for the study were patients of either sex, between age group 15-65 years, under cognitive behavioral therapy and drug therapy with or without comorbid conditions with a diagnosis of OCD. The exclusion criteria were the patients whose demographic details were not obtained and who refused to participate in the study. A total of 113 (males: 65, females: 48; age group 15 – 60 years) cases of OCD was identified in a period of 6 months at the psychiatric hospitals, Warangal region. The study was briefly explained to the patients, and then written informed consent was obtained from them. All the participants were interviewed personally, the details were recorded, and severity was rated using YBOC Scale.

#### Data analysis

Data were analyzed using Statistical Package for Social Sciences (SPSS) software version-17, Hyderabad, India, to estimate the prevalence of OCD, Chi Square test, ANOVA analysis of variance and 95% confidence intervals (CIs) were applied. Data are reported as mean  $\pm$  standard deviation. The significance level was set at  $p < 0.05$ .

## RESULTS

#### Socio-demographic characteristics

The mean age of the 113 patients diagnosed as OCD was  $31.06 \pm 9.8$  years while those of male and female were  $30.51 \pm 9.89$ ,  $31.81 \pm 9.83$  years respectively and the difference was not statistically significant ( $p=0.41$ ). A summary detail of age distribution of the OCD patients is shown in table 1. Eleven (11.97%) few patients were under the age of 20 years and 4 (3.5%) above the age of 50 years. Ninety eight of the patients 98 (86.7%) were in between 21-50 years in age group, of which 21-30 years age group constitute 52# (46%), Of them in every age group, male patients were more in number than females and there was a highly significant difference in age distribution among the OCD patients ( $\chi^2=11.28$ ;  $df = 3$ ;  $p < 0.01$ ).

#### Correlates

Of the 113 patients, 105(92.23%) were literates. The distribution of OCD patients based on the educational status is given in Fig.1 and similarly the distribution of patients based on occupation is shown in Fig.2. One was divorced and 69(61.06%) patients were married, compared with 43(38.05%) that were not married. Annual family income is considered in the study, as many of the patients were students and housewives and they do not have any personal income. Of the patients with annual family income of less than 2 lakh rupees (3,000 \$). Nearly 58 (51.3%) were from urban areas, and 28(24.8%) from rural ( $n=28$ , 24.8%), while the remaining 27(23.9%) were from semi urban localities. Positive family history was the major risk factor for the OCD, in the study 27 subjects (23.89%) had the positive family history. Among the 27 samples 20 subjects (74%) had the positive family history in first degree relatives and the remaining 7 subjects (26%) had the positive family history in second degree relatives. In considering the social habits, 43 subjects (38.05%) are alcoholics and 23 subjects are smokers (20.35%). Although comorbidities are very common in the OCD patients, a structured assessment of comorbidities was not done in this study.

#### Frequency OC symptoms

Among 113 patients, almost every patient shows obsessive symptoms ( $n=112$ , 99.11%) except one female patient of 21 years age, as she presented with only compulsive symptoms. But the compulsive symptoms were shown 92.9% ( $n=105$ ) of the total patients. The individual OC symptoms and their frequency were shown in Figure 3 and Figure 4. The frequency of various OC symptoms in the figure denotes that under the obsessions, the fear of harming and unreasonable fear occupied the highest rate, then the other subgroups like contamination, somatic, symmetry, religious, sexual, unwanted urges, and hoarding followed. Other than OCD symptoms, subjects, mainly shown depression symptoms like the headache, sleeplessness, anxiety and suicidal ideation. Considering compulsions, the symptoms like repeating, cleaning, washing, and checking were found in higher rates, followed by ordering, counting, collecting, and subgroups. The mental rituals are present in a negligible number of patients and miscellaneous include unusual repeating behavior. There were more than one OC symptoms reported in every subject, and most of the subjects were having around two or three obsessions and compulsions respectively.

#### Assessment of severity

Using DSM-IV criteria and OC symptoms the OCD can be diagnosed and the severity of this disease was mainly assessed by using YBOC scale. Based on the obsessions and compulsions scoring in the YBOC scale, the OCD can be categorized into sub-clinical, mild, moderate, severe, and extreme. The YBOC scale consists of 10 questions, 5 for obsessions and 5 for compulsions and each question carries a score of 0 to 4. The YBOC Scale

score range, the OCD categories, and number of patients in various stages of OCD were shown in the Table 2.

To assess the relation between the risk factors and the severity of the OCD in the subjects, a comparative table was made. Table 3 shows the correlation of the various socio-demographic variables with severity of disease. Among the socio-demographic characteristic only few factors had shown statistically significant in the severity assessment of the OCD. The age wise distribution

showed the significance in the severity of the OCD ( $F=2.76$ ,  $*p<0.05$ ), gender had no significance ( $\chi^2=5.1$ ,  $p>0.05$ ) and marital status also had no significance ( $\chi^2=1.57$ ,  $p>0.05$ ). Urbanization in the study region had significance in the severity assessment of OCD ( $\chi^2=15.9$ ,  $*p<0.05$ ) and family income also shown significance ( $F=2.76$ ,  $*p<0.05$ ). Family history, alcohol and smoking habits did not show any significance in the severity of the disease.

**Table 1: The age distribution of the patients with obsessive-compulsive disorder**

Sr.No.	Age in years	No. of males n=65(%)	No. of females n=48(%)	Total N=113(%)
1	11-20	8(7.1)	3(2.6)	11(9.7)
2	21-30	32(28.3)	20(17.7)	52(46.0)
3	31-40	13(11.5)	16(14.2)	29(25.7)
4	41-50	9(7.9)	8(7.1)	17(15)
5	51-60	3(2.6)	1(0.9)	4(3.5)

$P<0.01$  statistically very significant

**Table 2: The YBOCS score range, the Obsessive-Compulsive Disorder categories, and number of patients in various stages of OCD.**

Sr.No	YBOCS score ranges	OCD stages	Number of patient's n (%)
1	0-7	Sub-clinical	03 (2.65)
2	8-15	Mild	27 (23.89)
3	16-23	Moderate	47 (41.59)
4	24-31	Severe	26 (23)
5	32-40	Extreme	10 (8.87)

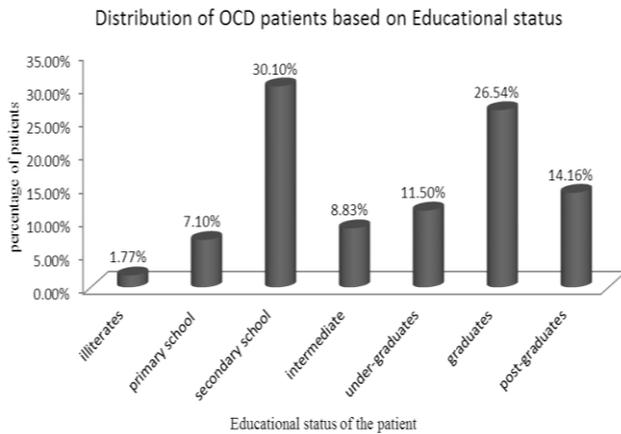
Note. YBOCS:-Yale-Brown Obsessive Compulsive Scale

**Table 3: Significance of Socio-demographic features in the severity of Obsessive-Compulsive Disorder.**

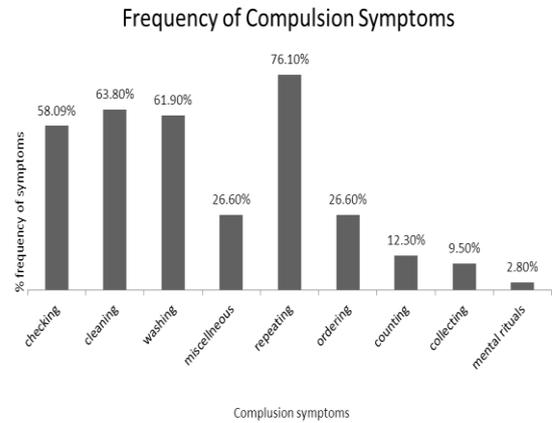
Sr. no	Socio-demo Graphics	Sub-clinical n (%)	Mild n (%)	Moderate n (%)	Severe n (%)	Extreme n (%)	Total n (%)	Stastical test	p-value
1	<b>Age:</b>							F=3.13	0.037 $p^*$
	11-20	0 (0)	3 (2.7)	3 (2.7)	1 (0.9)	4 (3.5)	11 (9.7)		
	21-30	2 (1.8)	8 (7.1)	24 (21.2)	14(12.4)	4 (3.5)	52 (46)		
	31-40	0 (0)	9 (7.9)	10 (8.9)	8 (7.1)	2 (1.8)	29(25.7)		
	41-50	1 (0.9)	5 (4.4)	8 (7.1)	3 (2.7)	0 (0)	17 (15)		
51-60	0 (0)	2 (1.8)	2 (1.8)	0 (0)	0 (0)	4 (3.5)			
2	<b>Gender:</b>							$\chi^2=5.1$	0.277
	Males	1 (0.9)	14(12.4)	30(26.5)	12(10.6)	8 (7.1)	65(57.5)		
	Females	2(1.77)	13(11.5)	17(15)	14(12.4)	2(1.8)	48(42.5)		
3	<b>Marital status:</b>							$\chi^2=1.57$	0.991
	Single	1 (0.9)	11(9.7)	17 (15)	10 (8.9)	4 (3.5)	43 (38)		
	Married	2 (1.8)	16(14.2)	29 (25.7)	16(14.2)	6 (5.3)	69(61.1)		
	Divorced	0 (0)	0 (0)	1 (0.9)	0 (0)	0 (0)	1 (0.9)		
4	<b>Area of living:</b>							$\chi^2=15.9$	0.044 $p^*$
	Rural	0 (0)	6 (5.3)	9 (7.9)	8 (7.1)	5 (4.4)	28(24.8)		
	Suburban	1 (0.9)	6 (5.3)	7 (6.2)	11 (9.7)	2 (1.8)	27(23.9)		
	Urban	2 (1.8)	15(13.3)	31 (27.4)	7 (6.2)	3 (2.7)	58(51.3)		
5	<b>Income:</b>							F=2.76	0.05 $p^*$
	<50000	0 (0)	4 (3.5)	16(14.2)	10 (8.9)	6 (5.3)	36(31.9)		
	0.5-1lakh	1 (0.9)	5 (4.4)	5 (4.4)	5 (4.4)	0 (0)	16(14.2)		
	1-2 lakh	2 (1.8)	14(12.4)	17 (15)	9 (7.9)	2 (1.8)	44(38.9)		
	2-3 lakh	0 (0)	3 (2.7)	4 (3.5)	2 (1.8)	0 (0)	9 (7.9)		
>3 lakhs	0 (0)	1 (0.9)	5 (4.4)	0 (0)	2 (1.8)	8 (7.1)			
6	<b>Family</b>								

	<b>history :</b>								
	Yes	1 (0.9)	9 (7.9)	8 (7.1)	6 (5.3)	2 (1.8)	26(23)	$\chi^2=2.79$	0.59
	No	2 (1.8)	18(15.9)	39(34.5)	20(18)	8 (7.1)	87(77)		
<b>7</b>	<b>Alcoholic:</b>							$\chi^2=4.5$	0.34
	Yes	1 (0.9)	10 (8.9)	23(20.1)	8 (7.1)	1 (0.9)	43(38.1)		
	No	2 (1.8)	17 (15)	24(21.2)	18(15.9)	9 (7.9)	70(61.9)		
<b>8</b>	<b>Smoking:</b>							$\chi^2=2.58$	0.63
	Yes	0 (0)	7 (6.2)	11(9.7)	4 (3.5)	1(0.9)	23(20.1)		
	No	3(2.7)	20(18)	36 (31.9)	22(19.5)	9 (7.9)	90(79.9)		

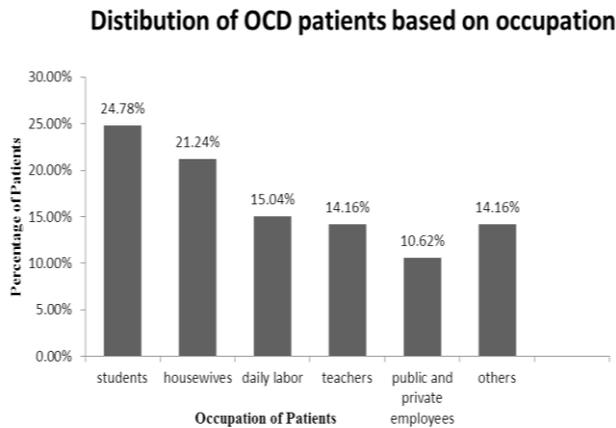
n=113, F- anova one-tailed test,  $\chi^2$ - chi-square test, p\*-statistically significant.



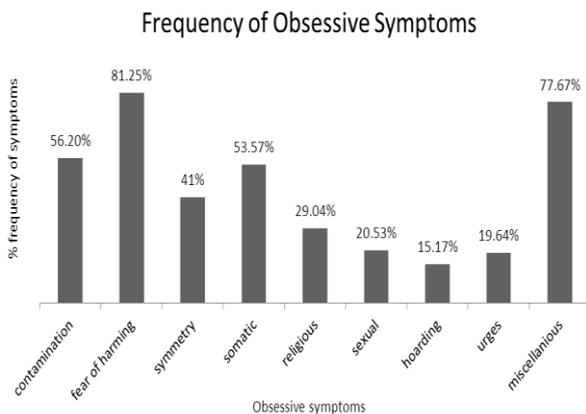
**Fig.1: Distribution of Obsessive-Compulsive Disorder patients based on educational status**



**Fig.4: Frequency of Compulsion symptoms**



**Fig.2: Distribution of Obsessive-Compulsive Disorder patients based on occupation**



**Fig.3: Frequency of Obsession symptoms**

**DISCUSSION**

In this study the prevalence of OCD was mostly of the young adults of age 21 to 30 years. Differences between genders were slight, with men scoring higher than women. OCD was more prevalent in literates than illiterates and higher rates were observed among the individuals like housewives, students and teachers. Most of the patients suffering with OCD belong to the higher socioeconomic background and were living in the urban regions. Every subject with OCD had more than one OC symptoms, the most prevalent obsessions were fear of harming followed by contamination, somatic and symmetry, and the most prevalent compulsion were repeating and cleaning. The influence of sociodemographic on the severity of OCD did not show much significance.

To examine the possible psychopathological and socio-demographic characteristics, to predict the subsequent diagnosis of OCD and to assess the severity of the OCD, there have been few studies conducted all over the world and most of these studies have used the community samples. But, this study is a hospital based one and included only the patients who visited the psychiatric clinic. Moreover, we wanted to observe the possible relation between some of the characteristics and severity of OCD. The results of the study provided important evidence that showed clinical implication and the risk factor associated with OCD, either as predictors or related factors, similar to the study carried out by Nauria et al (2012).<sup>[13]</sup>

It is difficult to compare the prevalence rates and age distribution of OCD with these epidemiological samples with the rates from other studies, as most of them included young people aged upto 18 years and below adolescents or a family, school and community, whereas this study included the wide age group range between 15 to 60 years as similar to the study carried out by Jorge and Eduardo (2004) and Joon Suk Lim *et al.*<sup>[14, 15]</sup>

In considering the individual socio-demographic features, this study states that in the clinical samples frequently men had a higher rate than women, the difference was not significant, is consistent with most epidemiological studies carried out by Heyman *et al.* and Fatemeh *et al.*<sup>[16, 17]</sup> Coming to the age-wise distribution mainly population of age 18+ were highly reported. The younger adults are mainly reported in this study the higher rates were present among the age group 21-30. In contrast to the studies of, Flament *et al* and ValleniBasile *et al* (1994) which showed that the OCD was highly prevalent among the age groups 12-18.<sup>[18, 19]</sup>

Our epidemiological study was unable to detect ethnic trend because the samples consisted of homogenous population, unlike the nationwide sample reported in the other studies like Murray *et al* (1997).<sup>[20]</sup> The sample surveyed here shows socio-economic trends for higher rates of OCD in middle-high socioeconomic groups in contrast to the studies of Hanna *et al* (1995) and NuriaMoltar *et al* (2012).<sup>[13, 21]</sup> Educational level and employment status of the patient did not have an impact on OCD occurrence in the study by ErcanAbay *et al* (2010) [please check whether referencing has followed author instructions], in contrast our study suggest OCD was more prevalent in literates than illiterates and also higher rates were observed among housewives, students and teachers.<sup>[22]</sup>

In agreement with Brngska and Wolanczyk (2005) these results found more obsessive symptoms in the OCD patients than compulsive symptoms. The most common obsessions were fear of harming or saying certain things, which can be linked to the obsessive symptomatology, such as magical thoughts, or lucky/unlucky numbers, which are symptoms that can be related to the superstition or the mental compulsion factor. On the other hand, washing, checking, symmetry which is the common manifestations of OCD was also severe symptoms in our study. In addition, our results have also shown that some depression symptoms such as headache, sleeplessness, and suicidal ideation could be a positive prediction of clinical OCD. Similar to the study carried out by Hanna *et al* (1995) our study showed higher prevalence of OCD in the first degree relatives than secondary.<sup>[23]</sup>

Most of the patients visiting psychiatry hospital were with moderate, severe and extreme OCD. The treatment includes the both medication and cognitive behavioral therapy, which was shown a considerable effect in the

management of OCD. Patients were satisfied with the treatment of OCD similar to the study carried out by Himle *et al* (2001).<sup>[24]</sup>

The present study was limited to only few psychiatric hospitals in the Warangal region. These sampling inequities suggest that the true rate of OCD in the community may be higher than our purported estimates. And our sample size of the OCD group was so small; it was not possible to analyze all socio-demographic characteristics influencing the disease. It is possible that the particular diagnostic instrument might have been insensitive to OCD and that our rate might be low as a result. Our study include the focus on past- few month prevalence of OCD, rather than the lifetime prevalence, as well as the exclusive focus on OCD itself, without reference to co-morbidity.

## CONCLUSION

In this study the prevalence of OCD was more in the younger adults of age group 21 to 30. Differences between genders were slight, with men scoring higher than women. OCD was more prevalent in literates than illiterates and higher rates were observed among the individuals like housewives, students and teachers. Most of the patients suffering with OCD belong to the higher socioeconomic background and were living in the urban regions. This hospital based study provides the distribution of OCD patients based on various sociodemographic factors, but it is difficult to find out the overall prevalence of OCD in the Warangal region. However, our study provides further evidence for the study of various neuropsychological and socio-demographic factors associated with OCD. It is suggested that there is a need for more informative studies for the better understanding of severity assessment of OCD. Providing accurate data about the prevalence of mental disorder would help to justify the allocation of score resources and planning of health services.

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