

## PATTERN OF DISTRIBUTION OF OBSESSIVE AND COMPULSIVE SYMPTOMS AMONG MALE AND FEMALE GENDERS IN BENGALI POPULATION WITH OBSESSIVE COMPULSIVE DISORDER

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### Abstract

**Background:** Obsessive compulsive disorder (OCD) is a major mental illness characterized by intrusive thoughts that produce uneasiness, apprehension, fear, worry and repetitive behaviours driven to aim at reducing the associated distress. Symptoms of obsession and compulsion are often observed to be quite different among male and female genders as per socio-cultural norms and social role of the community. This study intended to examine the pattern of distribution of obsessive and compulsive symptoms among two genders in Bengali population with obsessive compulsive disorder. **Materials and Methods:** It was cross sectional observational study. Among in new patients attending to the Psychiatry OPD of a tertiary care hospital, 50 male and 50 female consented Bengali patient with obsessive compulsive disorder fulfilling the selection criteria during the study period (1 year) had been recruited for the current study. We applied Yale-Brown obsessive Compulsive Scale (Y-BOCS) to measure the pattern and severity of obsessive and compulsive symptoms. **Result:** Mean age of the whole sample between 20-40 years whereas males were 32.82 years (SD 9.47) and females were 31.16 years (SD 7.16). Majority of both male and female were single, from Hindu nuclear rural family background, semiskilled worker by occupation. Majority of male had average education up to high school but female had slightly lower education, up to middle school. Mean total Y-BOCS obsession, compulsion and total scores for males was 13.08 (SD 3.02), 11.60 (SD 3.82), 24.68 (SD 5.84), for females was 14.14 (SD 2.72), 11.82 (SD 4.73), 25.96 (SD 5.63) and for whole sample was 13.61 (SD 2.72), 11.71 (SD 4.28), 25.32 (SD 5.74) respectively. **Conclusion:** This study reveals some consistent differences in distribution of the obsessive and compulsive symptomatology between male and female genders. Further phenotypical, epidemiological, genetic, family, neuroimaging, neuropsychological studies may add to understand further the gender differences of the OCD symptomatology.

## INTRODUCTION

Obsessive compulsive disorder (OCD) is a major mental illness characterized by intrusive thoughts that produce uneasiness, apprehension, fear, worry and repetitive behaviours driven to aim at reducing the associated distress.

Structural and functional changes within the brain have long been implicated in the pathophysiology of OCD. Cortical and sub-cortical brain regions comprise a series of functionally relatively segregated circuits, that may play different roles in

thoughts and behaviours.<sup>[1]</sup> One approach is being used more recently to explore brain structure in OCD, to pool structural neuroimaging scans from many diverse group case-control studies, a technique referred to as ‘mega-analyses’. This approach has found that OCD is associated with smaller hippocampal volumes and larger pallidum volumes, versus controls, but failed to find any significant differences in the caudate or putamen.<sup>[2]</sup> Neuroimaging work in OCD has commonly identified structural and functional abnormalities, most typically involving the orbitofrontal cortices

and basal ganglia (caudate nucleus), known as the 'orbitofrontal circuit' (for recent reviews see.<sup>[3]</sup> These findings support the classical model that OCD can be considered a disorder of maladaptive habit circuitry,<sup>[4]</sup> a model that has gained traction and evolved into more recent conceptualizations focusing on habit,<sup>[5]</sup> and loss of top-down control by cortically-mediated inhibitory mechanisms (referred to as 'disinhibition').<sup>[6]</sup> In recent years, it has become apparent that OCD involves changes across a broad range of cortico-striato-thalamo-cortical loop circuits (CSTC),<sup>[7]</sup> though abnormalities of the orbitofrontal cortices and basal ganglia have commonly been reported. OCD has typically been associated with grey matter volume increases in sub-cortical structures (such as the putamen and globus pallidus), and with grey matter reductions in the cortex (especially ventral and dorsal medial cortex, and inferior frontal cortex).<sup>[8]</sup> In terms of measures of cortical thickness (a proxy for the number of neurons in a particular brain region), more widespread reductions have been typically observed, including not only in the frontal but also in the parietal and temporal parts of the brain. Another common finding reported in OCD has been reduced fractional anisotropy (a measure of fibre density, axonal diameter, and myelination in white matter) in anterior midline tracts (including parts of the corpus callosum and cingulate bundle).<sup>[8]</sup> Collectively, these neuroimaging data suggests that OCD is associated with distributed changes across anatomically different brain structures, both in terms of grey matter and white matter tracts. Furthermore, OCD was associated with decreased cortical thickness in various frontal, parietal, and temporal cortical regions, versus controls.<sup>[9]</sup>

Though generalization of the present study finding may be difficult because of small sample size, single center exposure, and tertiary care level coverage, random patient sampling method, Objective data are put on the scales used to assess gender difference, phenomenology and comorbidities of OCD in Bengali population; it is the first study to explore these issues; and findings of the study will help our health professionals to address the symptom pattern of OCD, its severity, and comorbid conditions

among OCD patients in west Bengal. It will increase the space and will help creating an information baseline to carry out further study in this field in future. Further, large-scale, multicentric study can be conducted to explore the OCD symptoms, severity, any gender difference, comorbidity adequately and necessary policies can be formulated based on the study result.

## MATERIALS AND METHODS

It was cross sectional observational study. Among all new patients with diagnosis of OCD (as per ICD-10, DCR), attending the Psychiatry OPD of a tertiary care hospital, the first male case and first female case of OCD of every week, fulfilling the study selection criteria (consented, 18-59 years, Bengali) was selected i.e., 50 cases of male and 50 cases of female, after taking their informed consent, were recruited for the current study. One-time assessment (of total individual assessment time of approximately 1 hour) of the patients was done at the Psychiatry OPD on Socio-demographic and clinical data sheet to take record on their socio-demographic and clinical data and on Yale-Brown Obsessive Compulsive Scale (Y-BOCS) to measure the pattern and severity of obsessive and compulsive symptoms. Data was analyzed by appropriate statistical methods. Research proposal was approved by the Institutional Ethics Committee (IEC) of the institution.

### Study inclusion Criteria

1. Age group between 18-59 years
2. Both male and female gender
3. With diagnosis of OCD as per ICD-10, DCR
4. Residing in west Bengal for last 2 generations with Bengali as a vernacular language
5. Giving informed consent for participating in the study

### Study Exclusion Criteria

1. With mental retardation
2. With known organic disorder
3. Chronic major physical illness

## RESULTS

**Socio-demographic profile of the study population:** Mean age of the whole sample between 20-40 years whereas males were 32.82 years (SD 9.47) and females were 31.16 years (SD 7.16). Majority of both male and female were single, from Hindu nuclear rural family background, semiskilled worker by occupation. Majority of male had average education up to high school but female had slightly lower education, up to middle school.

### 1) Distribution of Y-BOCS sores in male, female and the whole study population:

**1A) Distribution of Y-BOCS Obsession sores (Table 1A):** Mean total Y-BOCS obsession item score for male respondents was 13.08 (SD 3.02), for female respondents was 14.14 (SD 2.72) and for whole sample was 13.61 (SD 2.72).

**Table 1A: Distribution of Y-BOCS Obsession scores**

Y-BOCS Obsession items	Male (n=50)		Female (n=50)		Total (N=100)	
	Mean	SD	Mean	SD	Mean	SD
Item-1	2.52	±0.99	2.76	±0.79	2.64	±0.90
Item-2	2.30	±0.83	2.28	±0.45	2.29	±0.67
Item-3	2.50	±0.61	2.82	±0.52	2.60	±0.58
Item-4	2.94	±0.71	3.28	±0.67	3.11	±0.70
Item-5	2.88	±0.62	3.00	±0.63	2.94	±0.63
Total Score	13.08	±3.02	14.14	±2.30	13.61	±2.72

**1B) Distribution of Y-BOCS Compulsion scores (Table 1B):** Mean total Y-BOCS compulsion item score for male respondents was 11.60 (SD 3.82), for female respondents was 11.82 (SD 4.73) and for whole sample was 11.71 (SD 4.28).

**Table 1B: Distribution of Y-BOCS Compulsion scores**

Y-BOCS Compulsion items	Male (n=50)		Female (n=50)		Total (N=100)	
	Mean	SD	Mean	SD	Mean	SD
Item-1	1.94	±0.54	2.14	±0.75	2.04	±0.66
Item-2	2.28	±0.85	2.44	±0.76	2.36	±0.81
Item-3	2.20	±0.78	2.28	±1.06	2.24	±0.93
Item-4	2.62	±1.08	2.78	±1.25	2.70	±1.16
Item-5	2.56	±1.09	2.18	±1.28	2.37	±1.20
Total Score	11.60	±3.82	11.82	±4.73	11.71	±4.28

**1C) Distribution of Y-BOCS total (Obsession & Compulsion) scores (Table 1C):** Y-BOCS total score for male respondents was 24.68 (SD 5.84), for female respondents was 25.96 (SD 5.63) and for whole sample was 25.32 (SD 5.74).

**Table 1C: Distribution of Y-BOCS total (Obsession & Compulsion) scores**

Y-BOCS total score	Male (n=50)		Female (n=50)		Total (N=100)	
	Mean	SD	Mean	SD	Mean	SD
Total Score	24.68	±5.84	25.96	±5.63	25.32	±5.74

**1D) Distribution of Y-BOCS severity (Table 1D):** Majority of the male and female respondents were suffering from severe OCD as per Y-BOCS scores.

**Table 1D: Distribution of Y-BOCS severity**

Y-BOCS Severity	Male (n=50)		Female (n=50)		Total (N=100)	
	No	%	No	%	No	%
Mild (8-15)	03	6.0	00	0.0	03	3.0
Moderate (16-23)	08	16.0	18	36.0	26	26.0
Severe (24-31)	34	68.0	20	40.0	54	54.0
Extreme (32-40)	05	10.0	12	24.0	17	17.0
Total	50	100.0	50	100.0	100	100.0

## DISCUSSION

In the present study, mean scores of YBOCS Obsession, compulsion and total (obsession + compulsion) scores for male, female and the whole sample were 13.08±3.02, 14.14±2.72, 13.61±2.72 and 11.60±3.82, 11.82±4.73, 11.71±4.73 and 24.68±5.84, 25.96±5.63, 25.32±5.74 respectively. Similarly, near results also came in Anish V. Cherian et al,<sup>[15]</sup> study. They showed that YBOCS Obsession, compulsion and total scores for male and female were 12.25 (±3.80), 10.52 (±4.17), 22.73 (±7.78) and 12.81 (±4.71), 11.38 (±5.47), 24.21 (±8.75) respectively. Nearly similar result is also reflecting in Ashish Khandelwal et al,<sup>[16]</sup> study,

which showed that YBOCS Obsession, compulsion and total scores for male, female were 13.6 (±2.73), 11.9 (±2.82), 25.58 (±5.02) and 14.1 (±2.99), 13.02 (±2.87), 27.20 (±5.42) respectively. Similarly, Guha thakurta et al. (44) in a study at Kolkata west Bengal on OCD, found that YBOCS total score for male, female and whole sample were 22.28(±8.48), 22.72(±7.84), 23.52(±6.6) respectively. But a different kind of data found from Adarsh Tripathi et al,<sup>[17]</sup> study, which shows that YBOCS total score for male, female and whole sample were 15.73 (±8.62), 17.41 (±8.74), 16.41 (±8.71) respectively.

## CONCLUSION

This study reveals some consistent differences in distribution of the obsessive and compulsive symptomatology between male and female genders which can be mostly explained by bio-psycho-social approach. This understanding may add further direction on OCD etiological mechanisms and possibly also to the development of more specific and effective therapeutic approaches.

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