Gender Differences in Phenomenology of Patients with Obsessive Compulsive Disorder

Ashish Khandelwal, Ashish Aggarwal, Amit Garg, R.C. Jiloha
Department of Psychiatry, G.B. Pant Hospital, New Delhi-110002

Abstract

Previous studies have shown differences in clinical features of obsessive-compulsive disorder (OCD) between men and women, including mean age at onset of obsessive-compulsive symptoms (OCS), types of OCS, comorbid disorders, course, and prognosis. The aim of this study was to compare male and female patients with OCD on several demographic and clinical characteristics. All new patients with OCD (ICD 10, criteria) who sought treatment at the OCD clinic were evaluated. The assessment instruments used were the semi structured pro forma especially designed for the study, Yale-Brown Obsessive-Compulsive Scale and check list to evaluate OCD severity and symptoms, and a semi structured interview along with standard mental-state examination.

Forty seven percent of the patients (n = 31) were males. They had significantly earlier age at onset of OCD and were less likely to be married. They presented significantly more sexual obsessions and females with significantly more contamination obsessions and cleaning and checking compulsions. With regards to comorbidity, we did not find any differences in the frequency of co morbid psychiatric disorders between male and female patients with OCD. No significant differences were observed between sexes concerning family history of OCS or OCD, and global symptoms severity, either in obsession or compulsive subscale or insight point.

The present study confirms the presence of sex-related differences described in other countries and cultures.

The fact that the OCS starts earlier and probably have a worse impact in men can eventually lead to more specific and efficacious treatment approaches for these patients.

Keywords: Obsessive Compulsive Disorder, Gender differences, Phenomenology

Introduction

Obsessive–compulsive disorder (OCD) was initially thought to be a relatively rare disorder. Although questions remain about the validity of lay interviews\(^1\), there is some evidence that OCD is a common psychiatric problem with an estimated lifetime prevalence rate of up to 3.3%\(^2,3\). Significant advances have been made in characterizing the phenomenology and neurobiology of this condition in recent years\(^4,5,6\). It has become clear that OCD is not simply a uniform or homogeneous disorder, but rather a heterogeneous disorder mediated by a range of different factors\(^7\). Gender, for example, may provide a useful window onto the clinical and biological heterogeneity of OCD\(^8\). A number of studies have reported that onset of the disorder is earlier for males, and that early onset male OCD is more likely associated with tics\(^7,9\). However, a cohort of OCD subjects identified in the Epidemiological Catchment Area (ECA) study\(^2\) demonstrated a similar age of onset in men and women, perhaps pointing to differences between clinical and community samples. OCD in males has been characterized as a subtype with a more frequent history of prominent sexual, exactness and symmetry obsessions\(^10,11\), and checking, symmetry and bizarre compulsions\(^10\). Among females with
OCD, washing rituals and contamination fears may be more common\textsuperscript{12,13}. Again however, conflicting data regarding OCD patterns and gender exist, e.g., a higher rate of contamination obsessions was found among males in another study\textsuperscript{14}. Few studies have found no sex difference in phenomenology of OCD\textsuperscript{15}. Further there has been suggested that cultural differences may play a role in the phenomenology of OCD.

In addition to clinical research, studies of the role of gender in genetic studies of OCD have also been undertaken. Some studies of genes involved in monoaminergic neurotransmitter systems have suggested a sexually dimorphic association between OCD and polymorphisms of the catechol-O-methyltransferase gene (COMT) and the monoamine oxidase A gene (MAO-A).\textsuperscript{16,17}

With regards to co morbidity, more than 50\% of patients with OCD have co morbid psychiatric disorders\textsuperscript{18}. Female subjects with OCD tend to have more of eating disorders\textsuperscript{12,19,20} and depression\textsuperscript{12,19} in comparison with males with OCD who showed more of social phobia\textsuperscript{20}, hypomania\textsuperscript{20}, depersonalization\textsuperscript{20}, substance-related disorders\textsuperscript{20}, and alcohol dependence\textsuperscript{19}.

Though studies have shown sex differences in demographics, symptom profile, and co-morbidity in OCD, there are inconsistencies. In addition, there are only few studies from outside Western settings\textsuperscript{15,21}, limiting the generalization of these findings across cultures. In this study, we investigated the sex related differences in subjects with OCD with respect to demographics, symptom profile, and comorbidity.

**Methodology**

The present study was conducted amongst the patients attending OCD clinic of the department of psychiatry of G. B. Pant Hospital and associated Maulana Azad Medical College, New Delhi. The OCD clinic runs once every week.

All the new patients who were registered in the clinic from December 2007 to October 2008 were screened and those who fulfilled the following criteria were taken for the study.

**Inclusion criteria**

1. Patients with OCD according to ICD 10
2. Patients willing to give a written informed consent for the study

**Exclusion criteria**

1. History of any psychiatric illness prior to the onset of OCD
   As a result a total of 66 patients were recruited for the study.

**Assessment**

All the assessments were made once at the time of intake into the study. The patients were evaluated using a semi structured interview and standard mental-state examination for the purpose of diagnosing psychiatric disorder. Psychiatric diagnosis was made by ICD 10 criteria. Data on age, age of onset of OCD, sex, marital status, etc were collected and the findings were recorded on a semi structured proforma especially designed for the study. Severity of OCD was assessed with the first 10-items of the Y-BOCS, a clinician-administered scale developed to assess the severity of obsessions and compulsions, independent of the number and type of obsessions or compulsions present\textsuperscript{22}. The Y-BOCS also includes a symptom checklist that contains a list of obsessions and compulsions. The score for item 11 on the Y-BOCS was considered as the measure of insight level. Score of degree on item 11 of Y-BOCS are considered to mark the boundary between awareness and no awareness of the illness\textsuperscript{23}

**Statistical analysis**

Statistical analysis was carried out with a commercial software package (SPSS, version 11.5). For the analysis of two categorical variables Chi-squared test (Fischer test where applicable) was used. Student’s t-test was used to compare continuous variables between two groups and to compare categorical dichotomous versus continuous variables. Further, to examine the influence of sex on symptom profile and comorbidity of OCD, we performed a logistic regression analysis after controlling for the age at onset and reported the adjusted p values. All tests were 2 tailed, and statistical significance was set at p < 0.05.

**Results**

**Socio demographic variables:**

Table 1 shows the comparison of the socio demographic profile of male and female patients
with OCD.

As per table 1a, males had earlier age at onset and at assessment as compared to females and the difference in the mean ages was significant.

Table 1b shows that there were significant differences with regards to the marital status with 54.8% of males being married as compared to 65.7% of females. No significant differences were observed with regards to religion, background, presence of precipitating factor and presence of family history of psychiatric illness.

Table 1c shows the educational and occupational details of the study patients.

As shown in table 2a, after adjusted for age at assessment, males had significantly higher rates of sexual obsessions and females had higher rates of contamination obsessions. Table 2b shows the frequency of compulsions in males and females cases with OCD. Females had higher proportion of cleaning and checking compulsions. Initial chi square analysis showed a trend toward a higher rate of checking compulsions in female subjects; however, this association became weaker when logistic regression analysis was performed controlling for age at onset.

There was no difference in the mean Y-BOCS scores as well as score on insight item (point 11) of YBOCS between the 2 OCD groups, as is shown in Table 2c.
Table 1c:

<table>
<thead>
<tr>
<th>Variable</th>
<th>Sub group</th>
<th>Males</th>
<th>Females</th>
<th>chi²</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>Percent</td>
<td>Frequency</td>
<td>Percent</td>
<td>square</td>
</tr>
<tr>
<td>Education</td>
<td>Primary</td>
<td>3</td>
<td>9.67</td>
<td>4</td>
<td>11.4</td>
</tr>
<tr>
<td></td>
<td>Middle</td>
<td>5</td>
<td>16.1</td>
<td>8</td>
<td>22.9</td>
</tr>
<tr>
<td></td>
<td>Matriculation</td>
<td>6</td>
<td>19.5</td>
<td>10</td>
<td>28.6</td>
</tr>
<tr>
<td></td>
<td>Senior</td>
<td>7</td>
<td>22.5</td>
<td>7</td>
<td>20.0</td>
</tr>
<tr>
<td></td>
<td>Graduation</td>
<td>10</td>
<td>32.2</td>
<td>6</td>
<td>17.1</td>
</tr>
<tr>
<td>Occupation</td>
<td>Student</td>
<td>15</td>
<td>48.3</td>
<td>6</td>
<td>17.1</td>
</tr>
<tr>
<td></td>
<td>Unemployed</td>
<td>5</td>
<td>16.1</td>
<td>6</td>
<td>17.1</td>
</tr>
<tr>
<td></td>
<td>Self employed</td>
<td>5</td>
<td>16.1</td>
<td>1</td>
<td>2.8</td>
</tr>
<tr>
<td></td>
<td>Service</td>
<td>6</td>
<td>19.5</td>
<td>3</td>
<td>8.5</td>
</tr>
<tr>
<td></td>
<td>Housewife</td>
<td>0</td>
<td>0</td>
<td>19</td>
<td>54.5</td>
</tr>
</tbody>
</table>

Table-2: Clinical symptom profile at the time of assessment

Table 2a: Obsessions:

<table>
<thead>
<tr>
<th>Obsessions</th>
<th>Males</th>
<th>Females</th>
<th>chi²</th>
<th>Unadjusted p</th>
<th>Adjusted p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>Percent</td>
<td>Frequency</td>
<td>Percent</td>
<td>Unadjusted p</td>
</tr>
<tr>
<td>Contamination</td>
<td>12</td>
<td>38.7</td>
<td>29</td>
<td>82.8</td>
<td>13.61</td>
</tr>
<tr>
<td>Sexual</td>
<td>12</td>
<td>38.7</td>
<td>6</td>
<td>17.1</td>
<td>3.85</td>
</tr>
<tr>
<td>Hoarding/saving</td>
<td>5</td>
<td>16.1</td>
<td>2</td>
<td>5.7</td>
<td>1.88</td>
</tr>
<tr>
<td>Symmetry</td>
<td>17</td>
<td>54.8</td>
<td>17</td>
<td>48.6</td>
<td>0.25</td>
</tr>
<tr>
<td>Aggression</td>
<td>20</td>
<td>64.5</td>
<td>17</td>
<td>48.6</td>
<td>1.69</td>
</tr>
<tr>
<td>Religion</td>
<td>11</td>
<td>35.4</td>
<td>7</td>
<td>20</td>
<td>1.98</td>
</tr>
<tr>
<td>Somatic obsessions</td>
<td>9</td>
<td>29</td>
<td>11</td>
<td>31.4</td>
<td>0.04</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>27</td>
<td>87</td>
<td>30</td>
<td>85.7</td>
<td>0.02</td>
</tr>
</tbody>
</table>

(Chi square, logistic regression)
Table 2b: Compulsions:

<table>
<thead>
<tr>
<th>Compulsions</th>
<th>Males Frequency</th>
<th>Males Percent</th>
<th>Females Frequency</th>
<th>Females Percent</th>
<th>Chi square</th>
<th>Unadjusted p</th>
<th>Adjusted p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cleaning/Washing</td>
<td>11</td>
<td>35.5</td>
<td>29</td>
<td>82.8</td>
<td>15.4</td>
<td>0.00</td>
<td>0.01</td>
</tr>
<tr>
<td>Repeating</td>
<td>7</td>
<td>22.6</td>
<td>10</td>
<td>28.5</td>
<td>0.30</td>
<td>0.77</td>
<td>0.66</td>
</tr>
<tr>
<td>Ordering/Arranging</td>
<td>8</td>
<td>25.8</td>
<td>11</td>
<td>31.4</td>
<td>0.25</td>
<td>0.78</td>
<td>0.60</td>
</tr>
<tr>
<td>Checking</td>
<td>27</td>
<td>87.1</td>
<td>22</td>
<td>62.8</td>
<td>5.0</td>
<td>0.04</td>
<td>0.052</td>
</tr>
<tr>
<td>Hoarding</td>
<td>5</td>
<td>16.1</td>
<td>2</td>
<td>5.7</td>
<td>1.88</td>
<td>0.24</td>
<td>0.35</td>
</tr>
<tr>
<td>Counting</td>
<td>9</td>
<td>29</td>
<td>12</td>
<td>34.2</td>
<td>0.20</td>
<td>0.79</td>
<td>0.7</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>28</td>
<td>90</td>
<td>30</td>
<td>85.7</td>
<td>0.32</td>
<td>0.71</td>
<td>0.92</td>
</tr>
</tbody>
</table>

Figure 2: Gender differences in compulsive symptoms

Gender differences in Comorbid psychiatric disorders

The patterns of comorbidity in male and female subjects are described in Table 3. Male subjects with OCD were more likely to have higher rate of social phobia, tic disorders, sexual disorders, hypochondriasis and psychosis, whereas female subjects had a significantly higher rate of depression, panic disorder, dysthymia, agoraphobia and trichotillomania. However, none of the differences were found to be significant.

Discussion

Demographics

Our finding of a roughly equal distribution of males and females with OCD is consistent with a range of previous clinical research studies. The male: female ratio has been observed to be around 1:1.67 (range: 1.25:1 to 1.38).

There have been other studies, which have found greater prevalence in males. The authors have explained that this excess may be due to the socio-cultural taboos, prevalent in Eastern communities, in which women feel hesitant to consult a doctor, and moreover, certain rituals like washing and cleaning are deeply ingrained in their societies, so that lesser number of women feel them to be absurd or irrelevant.

The mean age in males was 24.35 years and in females was 27.34 years. The observations were similar to the earlier findings of younger age in males as compared to females. But, one study from...
Table 2c: Y BOCS SCORE

<table>
<thead>
<tr>
<th>Variable</th>
<th>Males</th>
<th>Females</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>YBOCS Obsession Score (SD)</td>
<td>13.6 (2.73)</td>
<td>14.1 (2.99)</td>
<td>0.46</td>
</tr>
<tr>
<td>YBOCS Compulsion Score (SD)</td>
<td>11.9 (2.82)</td>
<td>13.02 (2.87)</td>
<td>0.78</td>
</tr>
<tr>
<td>YBOCS Total Score (SD)</td>
<td>25.58 (5.02)</td>
<td>27.20 (5.42)</td>
<td>0.21</td>
</tr>
<tr>
<td>Score on YBOCS 11th point for the assessment of insight (SD)</td>
<td>1.45 (0.56)</td>
<td>1.28 (0.51)</td>
<td>0.23</td>
</tr>
</tbody>
</table>

(Independent sample T test, SD=Standard deviation)
higher intelligence in the case group 31% of the cases were students, 22.6% were employed and 54% were housekeepers. Only 16% patient was currently unemployed. The results found are in keeping with earlier study conducted in India\textsuperscript{28}, in which an excess of students and housekeepers was found.

**Obsessive-compulsive symptoms**

The obsessive-compulsive phenomenology in our sample of patients with OCD is broadly consistent with the results from other studies. The higher frequency of sexual obsessions in males has been reported previously\textsuperscript{10,29,30,31}. An Indian study\textsuperscript{32} done also reported higher prevalence of sexual obsessions in males as compared to females. Lower prevalence in females could be because of the taboo related to discuss these obsessions. Females had significantly higher rates of contamination obsessions which is in concordance with previous literature.\textsuperscript{29,30,32} However, a recent Indian study\textsuperscript{11} again did not report any significant gender differences with regards to these obsessions.

Females had significantly higher prevalence of cleaning compulsions than males. This finding had been previously reported.\textsuperscript{12,20,29,31,32} However, various other western studies have shown no significant gender differences with regards to the cleaning compulsions. There are some data from India to suggest preponderance of themes of dirt and contamination in Hindus\textsuperscript{33}.

A range of previous studies has found symptom patterns that are in variation with our findings. No significant differences with respect to religious obsessions were found in our study, though a higher trend was reported in males. Previous studies have reported significantly higher rates of religious obsessions in males\textsuperscript{11,29,31}. Previous studies have reported the role of religion and religiosity on the obsessional content in some cultures\textsuperscript{34}, but it is not clear if the sex has any influence on religiosity and religious practices and the influence thereof on the obsessional content. Our study did not find any significant differences with respect to other OC symptoms, though it has reported in the literature that aggressive obsessions have been associated with females\textsuperscript{10}, whereas males have shown primary obsessive slowness\textsuperscript{20}, concern with numbers\textsuperscript{35} miscellaneous compulsions have also been reported to be in excess in males\textsuperscript{10,11}. The explanation for this varying symptom patterns across studies is currently speculative. It could possibly represent a cross-cultural variation in the phenotypic expression of OCD. Differing sample characteristics may also account for the variations across studies. Whether cultural factors could determine sex differences in the phenomenology of obsessional symptoms is unclear. However, studies that report on the phenomenology of OCD in Indian patients\textsuperscript{36} support the view that symptom profile is similar to that described in the Western population\textsuperscript{18}.

We did not find any gender differences in the YBOCS total score, score on obsessive or compulsive scale or on the insight item of YBOCS.

**Comorbidity**

It is noteworthy that 72% of the patients in the current study presented at least one additional comorbid Axis I disorder, confirming that comorbidity is the rule rather than the exception in OCD. However, men and women did not differ in the general prevalence rates of comorbidity with other psychiatric disorders. Men in this sample were more likely to present with chronic tics\textsuperscript{11} and tended to present with more social phobia than women\textsuperscript{20,30}. Previous studies have also shown that patients who present chronic tics or Tourette syndrome associated with OCD are predominantly males with early onset of symptoms.\textsuperscript{37}

Our results did not support the studies that reported major depression to be significantly higher in female subjects with OCD\textsuperscript{10,19}, but are consistent with studies that reported no relationship\textsuperscript{20,21}. However, the frequency of depression was higher in females than in males. The finding of no sex differences in frequency of depression is contrary to general population sex differences with respect to prevalence of depression. This may be partly due to exclusion of patients with a diagnosis of primary affective disorders. Similarly no significant difference with regards to dysthymia was found in our study.

Another finding is the higher frequency of psychosis comorbid among male patients, which was supported by the findings of another study investigating clinical characteristics in OCD with schizophrenia. The ratio of males among OCD patients with schizophrenia was 75%, whereas it
was 40% among OCD patients without schizophrenia in that particular study. We could find only 1 case where psychotic symptoms started after the onset of OCD. The rarity could be because of the fact that cases where psychosis is primary were excluded.

Females had more simple phobias and trichotillomania compared to men. Sexual disorders were reported by around 10% of males and none of females. This could be because of taboo related to sexual disorders especially in Indian females.

No case of eating disorder was found in our study. This could be because of rare reporting of eating disorders in studies from developing countries including India and could be a correlate of cultural beliefs and attitudes.

Other co-morbid psychiatric disorders were either absent or very rare for any meaningful statistical conclusions.

The rarity of other psychiatric disorders in our sample could be because of the low sample size and that patients were taken from single treatment centre only and from one specialised clinic, so the degree to which the results can be generalised to other cohorts of patients with obsessive compulsive disorder is uncertain.

Structured diagnostic schedules were not used for diagnosing psychiatric illness. However, another study done at the centre showed that the diagnosis made by residents have high concordance with the diagnostic criteria. Also, personality disorders were not evaluated in the study.

The sample size was small for major inferences to be drawn probably limiting the study power to detect expected differences between the study groups.

In conclusion, the present study showed that males had earlier age at onset of OCD and were less likely to be married. They had more sexual obsessions, where as females had more of contamination and cleaning compulsions. No significant differences were observed with regards to YBOCS scores and in the frequency of comorbid psychiatric disorders.

To summarize, our study supports that there are gender related differences in OCD. Although considered a unitary condition in the current classifications, OCD is a very heterogeneous disorder with innumerous phenotypic expressions and important sex-related differences. This probably reflects complex interactions between different environmental and biological etiologic factors, including cultural influences and life events, genetic, perinatal, endocrine, and neurobiological components. Currently, biologic research into gender-related differences in OCD is restricted to genetic studies that have inconsistently suggested a sexual dimorphic distribution of catechol-O-methyl transferase and monoamine oxidase genes. More research in this area is still needed, including even larger and more representative samples of patients from India, which is a very large and heterogeneous country. An evaluation of possible gender differences regarding specific OCD symptoms dimensions would also be warranted.

Future investigations on OCD gender differences should also comprise community samples because treatment-seeking individuals possibly have some particular clinical features, including higher severity of symptoms.

Also, further research on gender differences in OCD should focus on neurobiologic, family, and treatment studies. A synthesis of evidence from these varying aspects will be necessary to further our understanding of the possible role of gender in OCD.

**References**

