Symptom Dimensions in Chinese Patients with Obsessive-Compulsive Disorder

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To study the symptom dimensions of Chinese patients with obsessive-compulsive disorder (OCD), the symptom checklist of the Dimensional Yale–Brown Obsessive-Compulsive Scale (DY-BOCS) was used to assess the symptom dimensions of 139 OCD patients at a mental health center in Shanghai. The most common symptom dimensions were symmetry (67.6%), contamination (43.2%), and aggression (31.7%). The frequency of patients with the miscellaneous, sexual/religious, and hoarding symptom dimensions was 25.9%, 10.8%, and 8.6%, respectively. The frequency of male patients with symmetry concerns was higher than that of the female patients, and the frequency of female patients with contamination concerns was higher than that of male patients. OCD symptom dimensions can be identified in the Chinese context but there is a low frequency of endorsement of certain dimensions: sexual/religious, aggression, and hoarding concerns. Future studies need to further investigate the sociocultural and gender factors that may result in these findings: low numbers of people in China with a religious affiliation and the Chinese emphasis on Confucian harmony philosophy, thrift, and saving.

Introduction

Obsessive-compulsive (OC) disorder (OCD) is a chronic, disabling anxiety disorder characterized by recurrent and persistent thoughts (obsessions) and/or repetitive behaviors or mental acts (compulsions) [1], with prevalence rates ranging from 2% to 3% [2] in the general population. According to the World Health Organization (WHO), it is the 10th leading cause of years lived with illness-related disability [3].

The symptoms of OCD are heterogeneous such that it is plausible that two patients with the same diagnosis may display totally different symptoms. For example, one patient may fear harming others and repeatedly check whether he or she has done such a thing, whereas another patient may repeatedly wash his or hers hands despite realizing it is unnecessary to do so. Given the heterogeneity of this disorder, investigators have tried to combine the various OC symptoms into dimensional groups, which in turn will lead to a better characterization of the disorder. For example, in clinical practice, the symp-

toms of OCD are usually divided into two groups: obsessions and compulsions, as mentioned above. Some investigators have also tried to make distinction between “checkers” and “washers” [4,5]. However, these distinctions have some limitations, as evidenced by the fact that the pure subtype patients are few and that the subtypes cannot be related to the biological mechanism [6].

In recent years, data have increasingly supported a multidimensional model of OCD [6], with results of factor-analytic studies identifying four to five symptom dimensions [7–11]. The suggested five symptom dimensions are as follows: aggressive, sexual/religious, symmetry/ordering/counting/arranging, contamination/washing, and hoarding/collecting. In addition, patients often report some other OCD symptoms that do not fit any of these five dimensions. The Dimensional Yale–Brown Obsessive-Compulsive Scale (DY-BOCS) was designed to specifically evaluate the symptom dimensions of OCD [12] and is based on the Yale–Brown Obsessive-Compulsive Scale (Y-BOCS) [13,14], which is the gold standard for assessing symptom severity measure for

OCD. The DY-BOCS evaluates not only the symptom dimensions but also the severity of each dimension.

The symptom dimensions of OCD have been hypothesized to be affected by different neurobiological mechanisms and thus are related to different treatment responses [6]. However, research has suggested that sociocultural factors may also impact the clinical presentation of symptoms in OCD. But most of those factor-analytic studies are from Western countries and the DY-BOCS has only been used in one cross-cultural study comparing patients of North America and Brazil [12]. A few studies done in Eastern countries suggest that sociocultural factors such as religion [15,16] and social taboo [16] may affect the phenomenology of OCD. So, it is important to conduct cross-cultural studies to investigate the symptoms of OCD across different sociocultural settings.

One would hypothesize that the Chinese cultural context might influence the phenomenology of OCD. However, there are currently no reports of symptom dimensions from mainland China and only one study from Taiwan [17]

Drawing upon the methodologies used in previous studies [7–12], the current study aims to extend previous findings that have examined the symptom dimensions for patients with OCD in Western countries to a Chinese sample of patients diagnosed with OCD. Specifically, using the symptom checklist of the DY-BOCS, the current report investigates whether the five documented symptom dimensions identified in Western studies also are present in a Chinese sample of patients with OCD. Additionally, this study is also part of the validation process of the Chinese version of the DY-BOCS. It is important to highlight that only the symptom dimension data are presented in this article.

Method

Sample

This study was conducted at the Department of Clinical Psychology in Shanghai Mental Health Center over a period of 1 year. Subjects were outpatients ($N = 123$) and inpatients ($N = 16$) who met the DSM-IV criteria [1] for OCD. Diagnosis was made by attending psychiatrists with extensive experience in diagnostic interview using the Mini International Neuropsychiatric Interview [18]. The exclusion criteria included organic mental disorders, mental retardation, and substance abuse.

Measures

A Chinese version of the DY-BOCS [12] was used to assess the symptom dimensions of 139 OCD patients. It

was translated by the first author and back-translated into English by another senior psychiatrist. The back-translated version was then compared with the original version to resolve the discrepancy. Some revision has been made according to the local culture in this Chinese version. For example, in the demographic part, in order to identify the patients' religious affiliation, we add Buddhism and Taoism, two common religions in China, to the original scale. The DY-BOCS is based on the Y-BOCS [13,14] and contains an interview portion administered by the clinician as well as a self-report part completed by the patients. Both of these sections consist of a symptom checklist that is used to assess the presence of OC symptoms (e.g., if a patient presents with any of the symptom listed, he or she is asked to check that item) and a severity rating scale to assess the severity of OC symptoms. Some items about mental rituals that were not included in the original symptom checklist of the Y-BOCS [19] were added to the DY-BOCS [12]. The self-report symptom checklist provides examples for each item, which in turns facilitates patients' understanding of the items. The DY-BOCS also made it possible to evaluate the severity for each symptom dimension.

The psychometric property of the Chinese version has been evaluated and will be reported in other article. The preliminary results showed that it has a rather good reliability and validity. The current study is part of the validation process of this scale and only the symptom checklist results were included in this article, as the primary objective of our study is to examine the symptom content of OCD.

The patients first completed the self-report symptom checklist and then the clinician finished the symptom checklist on the basis of the patients' self-report and the interview. The clinician rated only those symptoms that were present during the previous 1-week period. We analyzed the final data from the symptom checklist used by the clinicians. The DY-BOCS symptom checklist, composed of several items, is designed to evaluate the five different OC symptom dimensions, as described above: (1) aggressive obsessions and related compulsions (e.g., fears of hurting oneself or other people with a knife or fork or constantly checking that one has not harmed oneself or other people); (2) sexual and religious obsessions and related compulsions (e.g., having unwanted sexual thoughts, being obsessed with sacrilege and blasphemy, or checking to make sure that one has not done anything wrong with respect to sexual action or religion); (3) symmetry, ordering, counting, and arranging obsessions and compulsions (e.g., being obsessed as to whether certain things are asymmetrical or disordered or spending a lot of time counting or arranging objects); (4) contamination obsessions and cleaning compulsions (e.g., worries

about getting dirt or germs by shaking hands or needing to wash and rewash hands); and (5) hoarding and collecting obsessions and compulsions (e.g., concerns about throwing things away or needing to save things for the future). It also assesses for miscellaneous obsessions and compulsions related to different themes, such as somatic concerns and superstitions, which could not be classified into the former five dimensions. If the patient endorses any of the items in one symptom dimension, then the interviewer evaluates if that symptom is really an OC symptom within that dimension. However, it is important to highlight that the interviewer will assess each symptom dimension for each patient, which in turn suggests that the symptom dimensions are not mutually exclusive.

During the process of using this scale, we also found that it was a little time-consuming, as that reported by Rosario-Campos et al. [12], especially for those patients with the symptom of repeated checking while reading. In addition, some patients found that it is difficult to understand the mental rituals symptoms and so clinicians need to do some explanation.

Analytical Strategy

χ^2 tests were used for comparisons involving categorical variables and *t*-tests were used to for comparisons involving continuous variables. The level of significance was set at $P < 0.05$.

In order to compare the prevalence of symptom dimensions across populations, we choose one study from Taiwan [17], where the culture is similar to that of China, one from other East Asian countries [20], two from West Asian countries [16,21], one from Africa [15], one from Europe [22], and one from North America and South America [12]. Because of the differences of these studies in some aspects such as the instruments used or the symptoms assessed (present symptom or lifetime symptom), a statistical test was not used to compare the prevalence between them and only the prevalence data extracted from these studies would be listed in the tables.

Results

Demographic Data

The demographic data of the 139 OCD patients are presented in Table 1. Of the 139 patients, 91 (65%) were male and 48 (35%) were female. The mean age was 30.1 years ($SD = 10.9$, range = 18–62 years). Men had a younger mean age than women, although this was not statistically significant. The mean age at onset of OCD was 23.0 years ($SD = 10.3$, range = 6–59 years). The mean

Table 1 Demographic data of 139 OCD patients in Shanghai

	Total (N = 139)	Male (N = 91)	Female (N = 48)	<i>t</i>	<i>P</i>
Age	30.1 (10.9)	28.7 (9.6)	32.8 (12.5)	−1.943	0.056
Age of onset	23.0 (10.3)	20.9 (8.4)	27.1 (12.4)	−3.090	0.003
Duration	7.1 (7.3)	7.9 (8.2)	5.7 (5.1)	1.985	0.049

SDs are in parentheses.

age of onset of OCD of male patients ($M = 20.9$, $SD = 8.4$) was significantly younger than that of female patients ($M = 27.1$, $SD = 12.4$, $P < 0.01$). The mean duration of OCD was 7.1 years ($SD = 7.3$, range = 3 months to 46 years). There were 20 (14.4%) patients who reported a religious affiliation.

OC Symptom Dimensions

The symptom dimensions of the subjects are presented in Table 2. Nearly half of the patients had one dimension (50.4%). The frequency of patients with two and three dimensions was 24.5% and 15.8%, respectively, and of those with four, five, and six dimensions was 6.5%, 1.4%, and 1.4%, respectively. The most common symptom dimensions were symmetry (67.6%), contamination (43.2%), and aggression (31.7%). Next in frequency were miscellaneous (25.9%), sexual and religious (10.8%), and hoarding (8.6%) dimensions.

The frequency of male patients with symmetry concerns was higher than that of the female patients ($P < 0.01$), and the frequency of female patients with contamination concerns was higher than that of male patients ($P < 0.05$). There were no significant differences in the other dimensions with respect to gender.

The frequency of symptom dimensions across different countries is listed in Tables 3 and 4. It should be noted that no statistical test was used to compare the frequency between different samples due to the reasons mentioned in "Analytical Strategy".

Table 2 Symptom dimensions of 139 OCD patients in Shanghai

	Total (N = 139)	Male (N = 91)	Female (N = 48)	χ^2	<i>P</i>
Aggression	44 (31.7%)	32 (35.2%)	12 (25.0%)	1.501	0.221
Sex/religion	15 (10.8%)	10 (11.0%)	5 (10.4%)	0.011	0.918
Symmetry	94 (67.6%)	69 (75.8%)	25 (52.1%)	8.090	0.006
Contamination	60 (43.2%)	33 (36.3%)	27 (56.3%)	5.117	0.031
Hoarding	12 (8.6%)	8 (8.8%)	4 (8.3%)	0.000	1.000
Miscellaneous	36 (25.9%)	27 (29.7%)	9 (18.8%)	1.953	0.162

Table 3 The frequency of symptom dimensions in China, the US, and Brazil

	China	US and Brazil
Number	N = 139	N = 78
Instrument	DY-BOCS	DY-BOCS
Aggression	31.7%	71%
Sex/religion	10.8%	51%
Symmetry	67.6%	81%
Contamination	43.2%	69%
Hoarding	8.6%	41%
Miscellaneous	25.9%	82%

Data come from Rosario-Campos [12], in which data from the US and Brazil were joined.

Discussion

In our sample, men with OCD had a significantly earlier mean age of onset than women, which is consistent with the Western [23] and other Eastern countries' studies

[16,17]. However, the male-to-female ratio in this study is almost 2:1. This sex distribution is different from the data in other literature that reports an equal sex ratio of OCD [24]. It is unknown whether the male preponderance in our sample may reflect the cultural influence in help-seeking behavior. During the recruitment process, we got the impression that the male patients are more willing to agree to participate in our study than the female patients. This could be a possible explanation to this sex distribution.

We used the DY-BOCS in order to assess the symptom dimensions of OCD. A dimensional approach to OC symptoms may prove to be of great value to identify the OCD subtype [6]. The DY-BOCS is a new instrument that is capable of evaluating this dimensionality. This is the first report to use this new scale in China. Since different studies may have used different instruments to assess the OCD symptoms, our findings must be interpreted within the context of this fundamental discrepancy in the conceptualization of OCD. For clarity, we have listed the

Table 4 The frequency of symptom dimensions in other countries

	Italy [22] ^a	Japan [20] ^b	Egypt [15] ^c	Iran [21] ^d	Bahrain [16] ^e	Taiwan [17] ^f
Obsessions						
Aggressive	56.11%	36%	41%	To self: 41% To other: 36%	8%	11.5%
Contamination	60%	48%	60%	60%	38%	37%
Sexual	17.22%	10%	48%	41%	32%	3.5%
Religious	21.66%	8%	60%	30%	40%	-
Hoarding	11.11%	12%	28%	-	-	-
Symmetry	31.66%	42%	43%	55%	-	19%
Miscellaneous	75%	38%	37%	-	-	13.5%
Somatic	26.11%	12%	49%	-	12%	5.5%
*Other	-	-	-	Doubt: 85% Slowness: 69% Fear impurity: 62% Self-devaluation: 59% Other: 22%	Germ: 16% Indecisiveness: 8%	Doubt: 34%
Compulsions:						
Washing	58.88%	47%	63%	72%	42%	45%
Checking	71.66%	47%	58%	58%	16%	50%
Repeating	57.77%	31%	68%	-	22%	-
Counting	16.11%	14%	47%	44%	12%	8%
Ordering	25%	22%	47%	57%	-	13.5%
Hoarding	13.33%	12%	45%	18%	-	0.5%
Miscellaneous	50%	31%	59%	-	-	9.5%
*Other	-	-	-	Ask for assurance: 47% Other: 10%	Picking: 4% Looking for dirt: 8% Fixed ritual: 10%	Need to ask: 5.5% Touching: 3.5%

MOCI, Maudsley Obsessional-Compulsive Inventory; CAC, Compulsive Activity Checklist.

All the fifteen categories listed in the first column belong to the Y-BOCS symptom checklist.

*Other: This category refers to some categories in other instruments that are not included in the Y-BOCS symptom checklist.

"-": means this category was not mentioned in this study.

^aY-BOCS, N = 180; ^bY-BOCS, N = 343; ^cY-BOCS, N = 90; ^dMOCI, CAC; N = 135; ^eMOCI, N = 50; ^fUnknown instrument, N = 200.

symptom differences across different countries in Tables 3 and 4.

A previous study of the DY-BOCS in Brazil and the United States showed the frequency of patients in each dimension: miscellaneous (82%), symmetry (81%), aggression (71%), contamination (69%), sexual/religious (51%), and hoarding (41%) [12]. If we do not consider the miscellaneous dimension, we can find the ranking of symptom dimension in our study as follows: symmetry (67.6%), contamination (43.2%), aggressive (31.7%), sexual and religious (10.8%), and hoarding (8.6%), which is similar to that of the Western countries (see Table 3). However, contamination was the second most common symptom dimension in our study, whereas aggression was the second most common symptom dimension in that study [12]. In addition, the frequency of the "sexual and religious" and "hoarding" dimensions was far lower than that of the Western countries [12]. It should be noted that all symptoms dimensions were less frequent in our sample. This might be accounted for by the examination of both present and past symptoms (lifetime symptoms) in that study in Brazil and the United States and only present symptoms were included in our study and other studies that we would mention later [15–17,20–22].

The sexual obsessional content was relatively common (32%) in Bahrain [16], which can be understood in view of the Bahrainian perception of sex as socially taboo. Interestingly, sex has also been a relatively strong social taboo in China for a long period of time. But, there is a low rate of sexual obsessions in our study, which is in line with the rate (3.5%) of another study of Chinese patients from Taiwan [17]. One plausible explanation for these findings is a reluctance to disclose such symptoms. In the study, several patients seemed very reluctant to talk about the sexual content of their symptoms. Thus, we do not know whether the rate of sexual obsessions is truly very low or whether Chinese patients, who are influenced by the traditional conservative culture of China, were just unwilling to talk about sex in public.

The low frequency of the aggression dimension (31%) is also similar to that in the study from Taiwan (11.5%) [17]. A study from Italy [22] reported that the frequency of aggressive obsessions was 56.1%. China has long been influenced by the Confucian culture that advocates for harmony in interpersonal relationships. This and other cultural factors may have resulted in the low endorsement of aggressive obsessions.

This study suggests that religious symptoms may be influenced by the rate of religious affiliation in a particular context. The low rate of religious content in Chinese patients may result from the low number of people who practice religion. China is a country consisting of

mainly five religions: Buddhism, Taoism, Islam, Catholicism, and Christianity. According to the data from the Chinese government website [25], only a hundred million people (7.7%) in the Chinese population endorse a religion. In our sample, only 14.4% had a religious affiliation. The low frequency of religious symptoms in this study is different from that in studies from Egypt [15], Bahrain [16], North America, and Brazil [12]. There appears to be an overrepresentation of patients with religious symptoms who are raised in strict religious communities. Okasha [15] reported religious symptoms in 60% of Egyptian patients, which showed the apparent role of religious upbringing in OCD symptoms in Egypt. A study from Bahrain [16] also showed religious symptoms in 40% of Bahrainian OCD patients. Bahrain and Egypt are both Moslem countries where the vast majority of the population observes and practices the religion of Islam.

Hoarding in our study was also lower than that reported in the Western studies [12]. China is still a developing country with low per-capita income, and after a long period of lacking living materials in China, many people, especially elders, are very thrifty and reluctant to throw away things. Even now, China has a high savings rate. Thus, we expected a relatively high frequency of hoarding dimension in Chinese OCD patients; however, the result (8.6%) of our study is also far lower than that of the Western studies (41%) [12]. Furthermore, the frequency of typical hoarding syndrome in our study is even lower. Another study of Chinese OCD patients from Taiwan [17] also showed a very low frequency of hoarding (0.5%). One possible explanation for this finding is that being thrifty and saving are thought to be virtues in Chinese traditional culture and therefore a person with such characteristics may not be thought of as having a disease and this may lead to a delay in seeking help. This may contribute to the low rate of patients with hoarding symptoms found in formal psychiatric hospitals [26].

Our study showed that there is a gender difference in the frequency of symptom dimensions of OCD, which is consistent with other studies [16,21,27]. Symmetry symptoms were more common in men than in women, and contamination symptoms showed the reverse results. Some Eastern studies [16,21] and Western studies [27] also found that contamination obsessions and washing compulsions were more common in women than in men. This may be due to the traditional role of women in the family. Considering the almost 2:1 ratio of men:women in our sample, it is also possible that some individuals may have the comorbidity of obsessive-compulsive personality disorder (OCPD). Men are more prone to develop OCPD [28], which has been found to occur more often in individuals with OCD than in individuals with

other anxiety disorders [29]. OCD with comorbid OCPD has been suggested as a subtype of OCD that is related to a higher rate of symmetry symptoms [30]. The limitation of the current study is that the Mini International Neuropsychiatric Interview [18] is designed only to evaluate the axis I disorders in DSM-IV.

In conclusion, in our study, the frequency of some dimensions—such as sex, religion, and hoarding—is different from what has been reported in some Western countries and some other Asian countries. The difference in the frequency of OCD symptoms in different settings may result from sociocultural factors playing a role in shaping the character of the symptom presentation. Thus, another factor that may explain the rather low frequency in all dimensions in our study is that some symptoms specific to Chinese OCD patients may not be recognized by the symptom checklist of the DY-BOCS. Our study is a preliminary study about using the symptom checklist of the DY-BOCS in different culture settings and we should be cautious to our conclusion. When comparing the frequency of OCD symptom dimensions in our study with other studies, we should also consider the relative frequency or ranking of symptoms because different studies may use different instruments in assessing the OCD symptoms [21].

The sociocultural factors underlying OCD phenomenology need to be further studied. In the future, qualitative studies should be used, such as sociological and anthropological approaches, to further investigate OCD symptomatology in China. And, an inventory of the OC symptoms specific to the Chinese backgrounds may also need to be developed on the basis of these qualitative studies.

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Conflict of Interest

The authors have no conflict of interests.

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