Assessment of obsessive beliefs in individuals with obsessive-compulsive disorder in comparison to healthy sample

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Cognitive models of obsessive–compulsive disorder (OCD) suggested that dysfunctional beliefs have important role in the etiology and maintenance of this disorder. However, empirical evidence in support of this notion is limited and inconsistent. The aim of current study was to compare scores obtained from the obsessive beliefs questionnaire (OBQ-44) and its subscales in 59 patients with OCD and 54 healthy subjects. OBQ-44 developed by the Obsessive-Compulsive Cognitions Working Group (OCCWG, 2001). All OCD patients were diagnosed using interview based on DSM-IV-TR and completed the Yale-brown obsessive-compulsive scale (YBOCS). Healthy sample was selected from family members of OCD patients. All subjects completed OBQ-44 and Beck depression inventory (BDI). Findings demonstrated that, consistent with predictions, that both OCD and healthy groups had significant differences in scores obtained from OBQ-44 (P<0.01) and its subscales. In addition, belief domains concerning perfectionism and intolerance of uncertainty (PC subscale) explained 41% of difference between the two groups. Importance/Control of Thoughts (ICT subscale) and responsibility/overestimation of threat domains (RT subscale) explained 17% and 5% of differences between two groups respectively. Possible explanations for these results were discussed.

Key words: Obsessive-compulsive disorder, obsessive beliefs, dysfunctional beliefs.

INTRODUCTION

Obsessive-compulsive disorder is an anxiety disorder in the text revision of the fourth edition of the diagnostic and statistical manual of mental disorders (DSM-IV-TR) with a disabling, prolonged and chronic course. Recurrent or persistent obsessions and compulsions, which are very time-consuming and may cause distress or significant impairment and interfere with daily life, are the essential features of the disorder (American Psychiatric Association, 2000). Rachman (1985) defined obsessions as unwanted, unacceptable intrusive and repetitive thoughts, images or impulses that are difficult to control and are associated with distress. Compulsions defined as purposeful, repetitive overt or covert behaviors or rituals that are usually performed to relieve distress or anxiety caused by obsessions (American Psychiatric Association, 2000). Although obsessions and compulsions are prominent features of OCD, but symptom presentation in the disorder is very diverse. Preoccupation with contamination, violence and harm, sex, mistake, exactness and religion are the most common symptoms of obsessions, while overt acts such as washing, checking, ordering and covert rituals like praying, mental analysis and counting are described as common compulsions (Clark, 2004).

Explanation of OCD in cognitive models focuses on dysfunctional appraisals and beliefs (McNally et al., 2001). These models all suggested that the unwanted intrusive thoughts, images or impulses are the initial points in pathogenesis of obsessions. These unwanted, ego-dystonic intrusive thoughts, images, and impulses
are universal human phenomena and whether or not these intrusions become an obsession, depend on how it may be appraised or evaluated. That is, all cognitive behavioral models of OCD, agree that faulty appraisals of intrusions, not intrusions themselves, are necessary for developing and maintenance of obsessions (Clark, 2004). Based on these cognitive approaches, compulsive behaviours may help the patient to reduce the distress arising from the obsessions. As a result, patients learn to get control over obsessions and hence, the compulsions become more and more repeated. Cognitive models of OCD, rooted in Carr (1974); McFall and Wollersheim (1979) models proposed that subjective overestimation of the probability that unpleasant outcomes will occur, may lead to OCD. McFall and Wollersheim (1979) believed that obsessive people not only make a faulty primary threat appraisal involving the overestimation of the probability of threat and its negative consequences but also they underestimate their ability to cope with the threat (that is, secondary appraisal). Salkovskis (1985) believed that McFall and Wollersheim formulation is not able to find out how the primary threat appraisals in OCD differ from the threat appraisals seen in other anxiety disorders. He proposed a more comprehensive explanation of OCD. Salkovskis (1985, 1989) suggested that, an inflated sense of responsibility is the core theme in belief system of obsessive patients. In addition, Rachman (2003) proposed that obsession may arise from catastrophic misinterpretation about the significance of mental intrusions. That is, individuals with OCD may view intrusive thought, image or impulse as a meaningful theme about one’s character (Clark, 2004). Given the focus of cognitive models on obsessive beliefs and importance of appraisals and evaluations, Obsessive compulsive cognitions working group (OCCWG, 2001, 2005) identified six major belief domains in OCD patients. Based on OCCWG model, these domains are specified to OCD and have etiologic importance to this disorder (OCCWG, 1997). These belief domains include: inflated responsibility, over importance of thoughts, overestimation of threat, importance of controlling thoughts, intolerance of uncertainty, and perfectionism. In order to assess these belief domains, OCCWG (2001) developed two self-report instruments that give us complete information about beliefs and appraisals that play essential role in vulnerability to OCD. Interpretation of Intrusions Inventory (III) investigates three domains: responsibility, over importance of thought intrusions, and control of intrusions. Last version of obsessive beliefs questionnaire, OBQ-44, designed to assess more enduring beliefs involved in pathogenesis and maintenance of obsessional states. These beliefs may be summarized in three subscales: Responsibility/Threat Estimation (RT), Perfectionism/Certainty (PC), and Importance/Control of Thoughts (ICT) (OCCWG, 2003).

Prior to research of the OCCWG, a few studies investigated faulty beliefs in OCD. Many of these studies showed that patients with OCD scored higher on the belief instruments than nonclinical control subjects (for example, Clark et al., 2003; Freeston et al., 1993; Sookman et al., 2001; Steketee et al., 1998). But Emmelkamp and Aardema (1999), Steketee et al. (1998) and Wellse and Papageorgiou (1998) showed that there are no significant differences between OCD and nonclinical groups in these beliefs. OCCWG (2003) research showed that responsibility, perfectionism and intolerance of uncertainty were significant predictors of obsessive–compulsive symptoms. In a study of the OBQ and the III in an Italian clinical sample, intolerance of uncertainty, control of thoughts, and perfectionism were found to be quite specific to OCD, whereas importance of thoughts and responsibility barely discriminated between patients with OCD and nonclinical control subjects (Sica et al., 2004). Janeck et al. (2003) proposed that over importance and control of thoughts can be described as a specific characteristic of OCD. Clark et al. (2003) research showed that beliefs about importance and control of thought had a unique significant relationship with obsessions. Moreover, Moulding and Kyrios (2006) suggested that beliefs about control and perceived level of control may contribute in the development of OCD. Findings from study of Viar et al. (2011) demonstrated that OCD symptoms are associated with some forms of obsessive belief. Abramowitz et al. (2006) showed that dysfunctional beliefs predicted the severity of checking, washing and obsessional OCD symptom dimensions, but not neutralizing, ordering or hoarding symptom dimensions. Due to importance of belief, domains in development and maintenance of OCD and, because of the lack of clinical investigations in Iran, the present study aimed to compare obsessive beliefs in obsessive-compulsive patients with those of healthy sample.

**MATERIALS AND METHODS**

**Participants**

The sample of current study consisted of 59 (45 females and 14 males) OCD outpatients and 54 (40 females and 14 males) normal subjects. OCD patients were selected from patients attending to three psychiatric clinics in Isfahan city. Inclusion criteria were:

1. Diagnosis of OCD based on DSM-IV-TR,
2. Aged 18 to 60,
3. Being able to read (at least primary school level).

Exclusion criteria were:

1. Concurrent DSM-IV-TR diagnosis of other psychiatric disorders, cognitive impairments, brain damages, and substance abuse,
2. Receiving any psychotherapy or medication within 6 months ago.

Healthy group was matched to OCD group for age, gender and education.
Table 1. Demographic information and descriptive characteristics about obsessive-compulsive disorder (OCD) and normal samples.

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>OCD sample</th>
<th>Healthy sample</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean  SD</td>
<td>Mean  SD</td>
</tr>
<tr>
<td>Age (years)</td>
<td>31.64  9.86</td>
<td>29.64  7.81</td>
</tr>
<tr>
<td>No. of female</td>
<td>45  76%</td>
<td>40  74%</td>
</tr>
<tr>
<td>No. of male</td>
<td>14  24%</td>
<td>14  26%</td>
</tr>
<tr>
<td>Education</td>
<td>14.30 2.49</td>
<td>15.62 1.45</td>
</tr>
<tr>
<td>YBOCS total</td>
<td>25.03 5.86</td>
<td>- -</td>
</tr>
<tr>
<td>YBOCS obsession</td>
<td>12.62 3.54</td>
<td>- -</td>
</tr>
<tr>
<td>YBOCS compulsion</td>
<td>12.40 2.86</td>
<td>- -</td>
</tr>
<tr>
<td>OBQ-44 Total</td>
<td>143.29 54.08</td>
<td>93.67 31.27</td>
</tr>
<tr>
<td>OBQ-44 (RT)</td>
<td>48.38 22.03</td>
<td>40.45 13.85</td>
</tr>
<tr>
<td>OBQ-44 (PC)</td>
<td>60.50 21.09</td>
<td>30.91 14.60</td>
</tr>
<tr>
<td>OBQ-44 (ICT)</td>
<td>34.38 15.85</td>
<td>22.68 9.57</td>
</tr>
<tr>
<td>BDI</td>
<td>21.74 12.40</td>
<td>11.77 5.31</td>
</tr>
</tbody>
</table>

YBOCS, Yale-brown obsessive-compulsive scale; OBQ, obsessive beliefs questionnaire; RT, responsibility/threat estimation; PC, perfectionism/certainty; ICT, importance/control of thoughts; BDI, beck depression inventory.

Table 1 demonstrated the demographic information and descriptive characteristics about OCD and healthy samples.

The OCD group had a mean age of 31.64 (SD = 9.86) with 76% female patients. The healthy group had a mean age of 29.64 (SD = 7.81) with 74% female. Mean of education was 14.3 (SD = 2.49) for OCD group and 15.82 (SD = 1.45) for Healthy group.

Measures

**Obsessive beliefs questionnaire (OCCWG, 2005)**

The OBQ is a 44-item self-report questionnaire developed by obsessive compulsive cognitions working group to assess faulty beliefs underlying obsessive-compulsive symptoms. OBQ-44 contains three subscales: overestimations of threat and responsibility for harm (RT subscale), importance and control of intrusive thoughts (ICT subscale), and perfectionism and the need for certainty (PC subscale). Each item was rated on seven point Likert scale, 1 (disagree very much) to 7 (agree very much). Studies reported good validity, internal consistency and test–retest reliability for OBQ-44 (OCCWG, 2001, 2005). Shams et al. (2005) also reported good internal consistency, test-retest reliability and validity for OBQ-44 in Iran.

**Beck depression inventory [BDI, Beck et al. (1996)]**

The is a self-report inventory including 21 items which is used to assess the severity of affective, cognitive, motivational, vegetative, and psychomotor components of depression. Each item rated from 0 to 3. Scores of 10 or less are considered normal and scores of 20 or greater suggest the presence of clinical depression. The BDI has excellent reliability and validity and is widely used in clinical research (Beck et al., 1996). Ghassemzadeh et al. (2005) reported high internal consistency, test-retest reliability and validity for BDI in Iran.

Procedure

OCD sample were interviewed based on DSM-IV-TR by first author. After interview and diagnosis of OCD, YBOCS was administered to yield accurate type and severity of OCD. Then all subjects completed OBQ-44 and BDI. Healthy sample were selected from family members of OCD patients. Each of family members who were willing to participate in this study was assessed and if he/she had no psychiatric disorder or substance abuse and matched to OCD sample in age and education, then he/she was selected and asked to fill questionnaires. Multivariate analysis of covariance

Yale–brown obsessive compulsive scale [YBOCS, Goodman et al. (1989a, b)]

This semi-structured clinical interview consisted of two parts: 1-symptomchecklist, 2-severity scale. Symptom checklist contains over 50 types of obsessions and compulsions and are categorized into 15 more general types of obsessions (for example, contamination) and compulsions (for example, checking), which is read to patient by clinician and provides definitions and examples of obsessions and compulsions for clinician. In this phase, clinician identifies any obsessions or compulsions that patient currently has experienced or suffered from it in past. Then the most prominent obsessions and compulsions, which were identified by the checklist, are selected and rated based on severity scale. This 10 items scale measures the following five parameters of obsessions (items 1 to 5) and compulsions (items 6 to 10): 1-time occupied/ frequency, 2-interference, 3-distress, 4-resistance, and 5-perceived control. Each item rated from 0 (no symptoms) to 4 (extreme). Finally scores of 10 items are summed yielding three scores: 1-obsession score (0 to 20), 2-compulsion scores (0 to 20), and total score (0 to 40). The YBOCS has good reliability and validity (Goodman et al., 1989a) and has been found to be sensitive to obsessive–compulsive symptoms in nonclinical samples (Frost et al., 1995) it is also considered as a gold standard measure of OCD symptom severity. Dadfar et al. (2002) reported satisfactory internal consistency, test-retest reliability and validity for YBOCS in Iran.
Table 2. MANCOVA results for OBQ-44 and its subscales.

<table>
<thead>
<tr>
<th>Group</th>
<th>F</th>
<th>Eta squared</th>
<th>Significance</th>
<th>Observed powered</th>
</tr>
</thead>
<tbody>
<tr>
<td>OBQ</td>
<td>43.913</td>
<td>0.251</td>
<td>0.000</td>
<td>1.000</td>
</tr>
<tr>
<td>RT</td>
<td>6.412</td>
<td>0.047</td>
<td>0.013</td>
<td>0.710</td>
</tr>
<tr>
<td>PC</td>
<td>91.006</td>
<td>0.410</td>
<td>0.000</td>
<td>1.000</td>
</tr>
<tr>
<td>ICT</td>
<td>27.685</td>
<td>0.174</td>
<td>0.999</td>
<td>1.000</td>
</tr>
</tbody>
</table>

OBQ, Obsessive beliefs questionnaire; RT, responsibility/threat estimation; PC, perfectionism/certainty; ICT, importance/control of thoughts.

(MANOVA) used for analysis of data using SPSS.

RESULTS

Table 1 represents the means and standard deviations for both OCD and healthy groups on OBQ-44 scores and three subscales of OBQ (RT, PC, and ICT) and BDI. As can be seen, OCD group reported higher scores in OBQ (M = 143.29, SD = 54.08) than healthy group (M = 93.67, SD = 31.27). In addition, OCD group showed higher scores in RT, PC and ICT subscales than healthy group. Means and standard deviations of YBOCS and its subscales (obsessions and compulsions) also presented for OCD group. Multivariate analyses of covariance were performed on OBQ and BDI (covariate) to examine the possible differences between two groups.

Multivariate analyses of covariance revealed significant difference between groups (F = 29.756, P< 0.01, \( \eta^2 = 0.539 \)). As shown in Table 2, OCD and healthy groups significantly differed in OBQ-total (F = 43.913, P< 0.01, \( \eta^2 = 0.251 \)) RT scale (F = 6.41, P< 0.05, \( \eta^2 = 0.047 \)) PC scale (F = 91.006, P< 0.01, \( \eta^2 = 0.410 \), ICT scale (F = 27.685, P< 0.01, \( \eta^2 = 0.174 \)). Based on these results, perfectionism/certainty (PC) domain had been more related to OCD and explained 41% of difference between OCD and healthy groups. These results were 17% for importance/control of thoughts (ICT) domain and 4% for responsibility/threat estimation (RT) domain, respectively.

DISCUSSION

Based on cognitive-behavioral approaches (Rachman, 1998; Salkovskis, 1999; OCCWG, 2001, 2005) faulty obsessive beliefs contribute to development and maintenance of OCD. The aim of this study was to investigate the possible differences between OCD and healthy groups in obsessive beliefs. Results suggested that two groups significantly differed in OBQ and its subscales. Such a finding is consistent with a number of previous findings (Clark et al., 2003; Freeston et al., 1993; Sookman et al., 2001; Steketee et al., 1998; Viar et al., 2011; Abramowitz et al., 2006), but not with some others (Emmelkamp and Aardema, 1999; Steketee et al., 1998; Wellse and Papageorgiou, 1998). These results also provide support for OCCWG researches. All researches of OCCWG showed that, OCD and healthy group significantly differ in scores of OBQ (OCCWG, 2001, 2003, 2005). However, OCCWG (2003) research showed that responsibility and perfectionism/intolerance of uncertainty were significant predictors of OCD; however, present study suggested that although, perfectionism/intolerance of uncertainty explained the greatest difference between two groups (41%) but responsibility beliefs explained only 5% of difference between OCD and healthy groups. The findings of this study also confirmed reports of Sica et al. (2004) suggesting intolerance of uncertainty, control of thoughts, and perfectionism were quite specific to OCD, whereas importance of thoughts and responsibility barely discriminated between patients with OCD and nonclinical control subjects. In addition, current study is consistent with Moulding and Kyrios (2006) that proposed beliefs about control and perceived level of control can have a role in development of OCD.

By and large, this study proposed that concordant with cognitive models, obsessive beliefs may contribute to development of OCD. Some inconsistencies seen between results of current study and other studies can be explained as such, that OCD is a highly heterogeneous disorder. That is, obsessive and healthy persons significantly differed in obsessive beliefs and inconsistencies, which were observed in domains of beliefs, may be due to different subtypes of OCD patients that have participated in studies. Thus further researches are necessary to investigate obsessive beliefs in different subtypes of OCD patients, comparing to healthy groups. Although, some studies tried to investigate in this area (for example, Viar et al., 2011; Wheaton et al., 2010), but they have had some limitations.

Conclusion

This study suggested that OCD and healthy groups significantly differ in obsessive beliefs, and OCD patients scored significantly higher than healthy sample on OBQ-
44 and its subscales. In addition, perfectionism/intolerance of uncertainty explained the most significant differences between two groups.

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REFERENCES


