

*Full Length Research Paper*

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

Razieh Izadi\*, Karim Asgari, Hamidtaher Neshatdust and Mohammadreza Abedi

Department of Psychology, University of Isfahan, Iran.

Accepted 5th January, 2014

**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 threatdomains (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

\*Corresponding author. E-mail: r\_izady@yahoo.com.

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.

Characteristics	OCD sample		Healthy sample	
	Mean	SD	Mean	SD
Age (years)	31.64	9.86	29.64	7.81
No. of female	45	76%	40	74%
No. of male	14	24%	14	26%
Education	14.30	2.49	15.82	1.45
YBOCS total	25.03	5.86	-	-
YBOCS obsession	12.62	3.54	-	-
YBOCS compulsion	12.40	2.86	-	-
OBQ-44 Total	143.29	54.08	93.67	31.27
OBQ-44 (RT)	48.38	22.03	40.45	13.85
OBQ-44 (PC)	60.50	21.09	30.91	14.60
OBQ-44 (ICT)	34.38	15.85	22.68	9.57
BDI	21.74	12.40	11.77	5.31

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.

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

This semi-structured clinical interview consisted of two parts: 1- symptom checklist, 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.

## 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

**Table 2.** MANCOVA results for OBQ-44 and its subscales.

Group	F	Eta squared	Significance	Observed powered
OBQ	43.913	0.251	0.000	1.000
RT	6.412	0.047	0.013	0.710
PC	91.006	0.410	0.000	1.000
ICT	27.685	0.174	0.999	1.000

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

(MANCOVA) 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 arolein 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.

## ACKNOWLEDGMENTS

The authors wish to thank the members of the Hoda, Parse and GolestaneZendegi clinics for their contributions to data collection.

## REFERENCES

- Abramowitz JS, Khandker M, Nelson C, Deacon B, Rygwall R (2006). The role of cognitive factors in the pathogenesis of obsessions and compulsions: a prospective study. *Behav. Res. Ther.* 44:1361-1374.
- American Psychiatric Association (APA) (2000). *Diagnostic and Statistical Manual of Mental disorders* (4th ed., text rev.). Washington, DC: Author.
- Beck AT, Steer RA, Brown G (1996). *Beck Depression Inventory manual* (2nd ed.). San Antonio, TX: Psychological Corporation.
- Carr AT (1974). Compulsive neurosis: A review of the literature. *Psychol. Bull.* 81:311-318.
- Clark DA (2004). *Cognitive-behavioral therapy for OCD*. New York: Guilford.
- Clark DA, Purdon C, Wang A (2003). The Meta-Cognitive Beliefs Questionnaire: Development of a measure of obsessional beliefs. *Behav. Res. Ther.* 41:655-669.
- Dadfar M, Bolhari J, Malakuti K, Malakuti K, Bayanzade A (2002). The study of the epidemiology of symptoms of Obsessive Compulsive Disorder. *J. Mind. Behav.* 1:2:27-32.
- Emmelkamp PMG, Aardema A (1999). Metacognition, specific obsessive-compulsive beliefs and obsessive-compulsive behaviour. *Clin. Psychol. Psychother.* 6:139-145.
- Freeston MH, Ladouceur R, Gagnon F, Thibodeau N (1993). Beliefs about obsessional thoughts. *J. Psychopathol. Behav. Assess.* 15:1-21.
- Frost RO, Steketee G, Krause MS, Trepanier KL (1995). The relationship of the Yale-Brown Obsessive-Compulsive Scale (YBOCS) to other measures of obsessive compulsive symptoms in a nonclinical population. *J. Personal. Assess.* 65:158-168.
- Ghassemzadeh H, Mojtabai R, Karamghadiri N, ebrahimkhani N (2005). Psychometric properties of a Persian language version of the beck depression inventory. 2<sup>nd</sup> ed: BDI-II. *J. Depress. Anxiety* 21:185-192.
- Goodman WK, Price LH, Rasmussen SA, Mazure C, Fleischmann RL, Hill CL, Heninger GR, Charney DS (1989a). The Yale-Brown Obsessive-Compulsive Scale I. Development, use, and reliability. *Arch. Gen. Psychiatr.* 46:1006-1011.
- Goodman WK, Price LH, Rasmussen SA, Mazure C, Delgado P, Heninger GR, Charney DS (1989b). The Yale-Brown Obsessive-Compulsive Scale II. Validity. *Arch. Gen. Psychiatr.* 46:1012-1016.
- Janeck AS, Calamari JE, Riemann BC, Heffelfinger SK (2003). Too much thinking about thinking?: Metacognitive differences in obsessive-compulsive disorder. *J. Anxiety Disord.* 17:181-195.
- McFall ME, Wollersheim JP (1979). Obsessive-compulsive neurosis: A cognitive-behavioral formulation and approach to treatment. *Cogn. Ther. Res.* 3:333-348.
- McNally RJ, Wilhem S, Buhlmann U, Shin LM (2001). Cognitive inhibition in obsessive-compulsive disorder: Application of a valenced-based negative priming paradigm. *Behav. Cogn. Psychother.* 29:103-106.
- Moulding R, Kyrios M (2006). Anxiety disorders and control related beliefs: the exemplar of obsessive-compulsive disorder. *J. Clin. Psychol. Rev.* 26(5):573-583.
- Obsessive Compulsive Cognitions Working Group (OCCWG) (2003). Psychometric validation of the Obsessive Beliefs Questionnaire and the Interpretation of Intrusions Inventory: Part II. Factor analyses and testing a brief version. Manuscript submitted for publication.
- Obsessive Compulsive Cognitions Working Group (2005). Psychometric validation of the obsessive belief questionnaire and interpretation of intrusions inventory: part 2, factor analyses and testing of a brief version. *Behav. Res. Ther.* 43:1527-1543.
- Obsessive Compulsive Cognitions Working Group (OCCWG) (1997). Cognitive assessment of obsessive-compulsive disorder. *Behav. Res. Ther.* 35:667-681.
- Obsessive Compulsive Cognitions Working Group (OCCWG) (2001). Development and initial validation of the Obsessive Beliefs Questionnaire and the Interpretation of Intrusions Inventory. *Behav. Res. Ther.* 39:987-1006.
- Rachman SJ (1985). An overview of clinical and research issues in obsessional-compulsive disorders. In M. Mavissakalian, S. M. Turner, & L. Michelson (Eds.), *Obsessive-compulsive disorder: Psychological and pharmacological treatment*, New York: Plenum Press. pp. 1-47.
- Rachman SJ (1998). A cognitive theory of obsessions: Elaborations. *Behav. Res. Ther.* 36:385-401.
- Rachman SJ (2003). *The treatment of obsessions*. Oxford, UK: Oxford University Press.
- Salkovskis PM (1999). Understanding and treating obsessive-compulsive disorder. *Behav. Res. Ther.* 37:29-52.
- Salkovskis PM (1985). Obsessional-compulsive problems: A cognitive-behavioral analysis. *Behav. Res. Ther.* 23:571-583.
- Salkovskis PM (1989). Cognitive-behavioral factors and the persistence of intrusive thoughts in obsessional problems. *Behav. Res. Ther.* 27:677-682.
- Shams G, Karamghadiri N, Smallitorkanburi Y, Ebrahimkhani N (2005). Validity and Reliability of Persian version of Obsessive Compulsive Questionnaire. *J. Adv. Cogn. Sci.* 6:23-36.
- Sica C, Coradeschi D, Sanavio E, Dorz S, Manchisi D, Novara C (2004). A study of the psychometric properties of the Obsessive Beliefs Inventory and Interpretations of Intrusions Inventory on clinical Italian. *J. Anxiety Disord.* 18(3):291-307.
- Sookman D, Pinard G, Beck AT (2001). Vulnerability schemas in obsessive-compulsive disorder. *Journal of Cognitive Psychotherapy: Int. Quart.* 15:109-130.
- Steketee GS, Frost RO, Cohen I (1998). Beliefs in obsessive-compulsive disorder. *J. Anxiety Disord.* 12:525-537.
- Viar MA, Bilsky SA, Armstrong T, Olatunji BO (2011). Obsessive Beliefs and Dimensions of Obsessive-Compulsive Disorder: An Examination of Specific Associations. *J. Cogn. Ther. Res.* 35:108-117.
- Wellse A, Papageorgiou C (1998). Relationships between worry, obsessive-compulsive symptoms and meta-cognitive beliefs. *Behav. Res. Ther.* 36:899-913.
- Wheaton MG, Abramowitz JS, Berman NC, Riemann BC, Hale LR (2010). The relationship between obsessive beliefs and symptom dimensions in obsessive-compulsive disorder. *J. Behav. Res. Ther.* 48:949-954.