

## Relationship between Obsessive Beliefs and Symptoms in Patients with Obsessive Compulsive Disorder

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### ABSTRACT

**Introduction:** Misinterpretation of intrusive thoughts because of obsessive beliefs has been thought to be important in the development of obsessive compulsive symptoms. In current study, (I) the difference between OCD patients and healthy controls in regard of obsessive beliefs and (II) the relation of obsessive beliefs with the prevalence and severity of obsessive compulsive symptoms was investigated.

**Methods:** The current study included 47 OCD patients and 44 healthy controls who have same properties with regard to age, sex and duration of education. All subjects were applied to Obsessive Beliefs Scale, Maudsley Obsessive Compulsive Scale, Hamilton Depression Rating Scale and Hamilton Anxiety Rating Scale. OCD patients were applied to Yale Brown Obsessive Compulsive Scale as well as the other scales.

**Results:** In analyses by controlling depression and anxiety scores, OCD patients had significantly higher scores than controls, with regard to

all subscales of Obsessive Beliefs Scale. Also, prevalence of obsessive compulsive symptoms other than cleaning were correlated with obsessive beliefs about "responsibility and threat estimation" and "perfectionism and need for certainty". However, there was no correlation in between severity of obsessive compulsive symptoms and subscale scores of Obsessive Beliefs Scale.

**Conclusion:** Excluding the effects of depression and anxiety, generally the results suggests that obsessive beliefs have an important role for development of obsessive compulsive symptoms. Future studies of separated OCD subgroup with regard to obsessive compulsive symptoms will be helpful in determining the difference among these subgroups in regard of obsessive beliefs.

**Keywords:** Obsessive compulsive disorders, obsessive beliefs, depression, anxiety

### INTRODUCTION

Obsessive-compulsive disorder (OCD) is characterized by irrational but unavoidable intrusive thoughts, which are referred as obsessions. Moreover, the repetitive mental or physical acts that are created to overcome the anxiety caused by these obsessions are known as compulsions (1). It is widely accepted that the underlying reason of obsessions and compulsions in OCD patients is not intrusive thoughts but the misinterpretation of these thoughts (2). For instance, based on the presence of sexual instincts, one could realize that his/her sexual thoughts are contrary to public morality. Healthy individuals may easily escape or interrupt these types of thoughts. An OCD patient requires compulsive behaviors to eliminate the anxiety caused by these thoughts because of extreme perfectionism and exaggerated responsibility.

It was previously reported that false beliefs regarding inflated responsibility (3), perfectionism and certainty (4,5), and importance/control of thoughts are effective in developing OCD (6). Based on these findings, the Obsessive-Compulsive Cognitions Working Group prepared the Obsessive Beliefs Questionnaire that could be used to evaluate all these beliefs. The short version of this questionnaire categorizes the obsessive beliefs in three basic areas described here: "responsibility and threat estimation," "perfectionism and certainty," and "the importance/control of thoughts" (7).

The development of the Obsessive Beliefs Questionnaire reduces the methodological variability among the studies on obsessive beliefs. In the studies utilizing this questionnaire, the severity of obsessive beliefs in OCD patients are reported to be significantly higher than those in healthy controls (7,8,9). According to multiple reports, the difference could not be detected between OCD patients and healthy controls when the mixing effects of depression and anxiety were excluded (8,10). However, OCD patients were reported in other studies to demonstrate severe obsessive beliefs compared with healthy controls even after the effects of depression and anxiety were disregarded (11). Several studies report OCD patients with severe obsessive beliefs and strengthen the idea of the connection between obsessive thoughts and the development of OCD, whereas other reports show no difference among subjects and remain contradictory. However, the severity of anxiety and depression in the contradicting reports was subjectively determined from self-assessment scales used by the patients. Furthermore, improved objective methods during these assessments would ensure more reliable results. In this study, we utilized more appropriate objective scales to measure the severity of anxiety and depression while investigating



the difference in obsessive beliefs between OCD patients and healthy controls.

This study aimed to investigate (I) whether OCD patients differ from healthy subjects with no known occurrence of obsessive beliefs and (II) whether the prevalence and severity of obsessive-compulsive symptoms are relevant to the obsessive beliefs. If obsessive beliefs correlate with OCD symptoms rather than depression and anxiety, then targeting cognitive dysfunction in OCD patients could reduce the obsessions and compulsions (12).

## METHODS

### Subjects

Random sampling in this study included 47 OCD patients diagnosed based on the structured clinical interview for DSM-IV Axis I disorders (SCID-I) and 44 healthy controls of similar age, sex, and educational background. The healthy controls were chosen from hospital staff or their relatives. The OCD group comprised the patients administered to Pamukkale University Medical School Psychiatry Department Anxiety Disorders Ward. Except for five untreated patients and one patient taking clomipramine, all patients were on selective serotonin uptake inhibitors. Patients with mental retardation, a significant illness rather than a psychiatric disease, psychotic disorder, drug addiction, and those without a given consent or score above 16 in the Hamilton Rating Scale for Depression (13) were not included in the study. Ethical permission was obtained from Pamukkale University Medical School Ethics Commission before the study.

The severity of obsessive beliefs, the prevalence of obsessive-compulsive symptoms, and the severity of depression and anxiety were determined in all participants. Additionally, the severity of obsessive-compulsive symptoms of OCD patients was evaluated based on the following measurement criteria.

### Measurement Criteria

**Structured clinical interview for DSM-IV axis I disorders (SCID-I):** It is a diagnostic tool used to determine DSM-IV Axis I disorders. It was developed by First et al. (14) and was translated into Turkish and its credibility has been tested (15).

**Maudsley obsessive-compulsive question list (MOCQL):** It is a tool that was developed to assess the types and prevalence of obsessive-compulsive symptoms (16). The validity and credibility work in the Turkish translation of MOCQL was determined by Erol et al. (17). In the study presented here, MOCQL was used to measure the prevalence of obsessive-compulsive symptoms.

**Yale-Brown obsessive-compulsive scale:** It was developed by Goodman et al. (18,19) to test the severity of obsessive-compulsive symptoms. It was translated into Turkish and accredited (20,21). Our study used to this method to measure the severity of obsessive-compulsive symptoms.

**Hamilton rating scale for depression (HRSD):** It was developed by Hamilton to test the severity of depression (13). Its accreditation and validity studies were performed by Akdemir et al. (22). This scale was applied by the interviewer in our study to ensure objective assessment.

**Hamilton anxiety rating scale (HARS):** It is a rating scale developed by Hamilton et al. (23) to measure the severity of anxiety symptoms. Its validity and accreditation studies were conducted by Yazıcı et al. (24).

It was administered by the interviewer in our study for the objective evaluation of anxiety.

**Obsessive beliefs questionnaire:** It is a self-assessment tool for the evaluation of beliefs associated with obsessive-compulsive symptoms. In this study, a 44-item version of the test (7) was used, which was developed by the Obsessive-Compulsive Cognitions Working Group (25). The credibility and validity of this test were determined by Boysan et al. (26) in Turkey. The scale uses a 7-point Likert-type scale that ranges from "disagree very much" to "agree very much." The scale tested the three subscale criteria described above including "responsibility and threat estimation," "perfectionism and certainty," and "importance/control of thoughts." The responsibility/threat estimation, perfectionism/certainty, and importance/control of thoughts subscales could be exemplified with the respective following statements: "in daily situations, a failure to prevent harm is just as bad as deliberately causing them," "if I'm not absolutely sure of something, I'm bound to make a mistake," and "if I have a bad thought, it means I'm a bad person."

### Statistical Analyses

Categorical and demographic variables such as sex and marital status were evaluated and compared using Chi Square Test; other demographic variables and clinical evaluation scores were compared using Student's t-Test. The scores obtained from the Obsessive Beliefs Questionnaire were compared using ANCOVA to eliminate the possible mixing effects of anxiety and depression (8). The correlation between the scores from MOCQL, Yale-Brown Obsessive-Compulsive Scale, and Obsession Beliefs Questionnaire were analyzed using partial correlation analysis and by considering the severity of depression/anxiety symptoms.

## RESULTS

The socio-demographic features and clinical evaluation scores of the groups are summarized in Table 1. There was no significant difference in age, sex, and educational background between the groups. The scores from HRSD, HARS, and all subscales of MOCQL were found to be significantly higher in the OCD patients compared with the control group.

The comparison of the obsessive beliefs in the two groups is given in Table 2. By checking their anxiety/depression points, the OCD patients scored significantly higher than the control group in the analysis in all subscales of the Obsessive Beliefs Questionnaire.

In the OCD group, there was a positive correlation between responsibility/threat estimation points and HRSD ( $r=0.355$ ,  $p=0.014$ ) and between HARS somatic points ( $r=0.318$ ,  $p=0.029$ ). There was also a positive correlation between the importance/control of thoughts and HARS somatic points ( $r=0.330$ ,  $p=0.023$ ). In the control group, there was no correlation between the Obsessive Beliefs Questionnaire points and HRSD or HARS points. The partial correlation analysis performed by checking the effects of HRSD and HARS points are shown in Table 3. In the control group, there was a significant correlation between the points from the Obsessive Beliefs Questionnaire and all subscales of MOCQL. In the OCD group, there was no correlation between obsessive beliefs and MOCQL's "cleaning subscale" or "importance/control of thought subscale" points. Except for these two points, the subscales of MOCQL showed a correlation with the obsessive beliefs. On the other hand, there was no correlation between the obsessive beliefs and the Yale-Brown Obsessive-Compulsive Scale points in the OCD group.

## DISCUSSION

In this study, it was found that the obsessive beliefs regarding the "responsibility and threat estimation," "perfectionism and certainty," and "im-

portance and control of thoughts" were seen more frequently in OCD patients and that were also shown to be independent from their depression and anxiety symptoms. Moreover, there was a correlation between the obsessive beliefs about "responsibility/threat estimation" with "perfectionism/certainty" and the prevalence of obsessive-compulsive symptoms except the obsessive cleaning. In healthy individuals, the prevalence of obsessive-compulsive symptoms was found to be related to all three obsessive belief subtypes.

It was shown that there were positive correlations between the obsessive beliefs of "responsibility/threat estimation" and anxiety/depression symptoms and between the obsessive thoughts of "importance/control of thoughts" and anxiety symptoms in this study. On the other hand, the correlation analysis (excluding the effects of depression and anxiety on obsessive thoughts) showed that the obsessive thoughts of "responsibility/threat estimation" and "perfectionism/certainty" were relevant to the prevalence of all obsessive-compulsive symptoms with the exception of obsessive cleaning. Based on Yale-Brown obsessive-compulsive scale (18,19) and Padua inventory (27), consisted with our findings, three independent studies with 62, 101, and 248 OCD patients reported that the prevalence and severity of obsessive-compulsive symptoms were associated with obsessive beliefs when anxiety and depression symptoms were taken into account during the analyses (25,26,28). The studies on healthy individuals also reported similar results to our study. In a study with 238 healthy individuals subjected to the Inventory of Obsession and Compulsion and the Yale-Brown Obsessive-Compulsive Scale, Myers et al. (29) showed that the severity and disturbance of obsessive-compulsive symptoms were correlated positively with obsessive beliefs when anxiety symptoms were checked (30). In a bigger random sampling of healthy individuals using the Padua Inventory, Moulding et al. (31) reported that the prevalence and disturbance of obsessive-compulsive symptoms are associated with obsessive beliefs when depression symptoms are controlled. These studies suggested the possible role of obsessive beliefs in the development of obsessions and compulsions. Other studies provided evidence for the relationship of obsessive beliefs with anxiety and depression rather than obsessive-compulsive symptoms. For instance, Tolin et al. (8) compared 89 OCD patients with 72 other anxiety disorder patients in terms of obsessive beliefs. It was concluded that when the severity of depression and anxiety symptoms were controlled in this study, there was no significant difference between the two groups. Konkan et al. (10) also compared 62 OCD patients with 175 healthy individuals and reported that disregarding the mixing effects of depression and anxiety symptoms results in the minimization of obsessive beliefs between the OCD patients and healthy subjects. One caveat to the aforementioned studies was the use self-assessment tools in the evaluation of anxiety and depression symptoms on obsessive beliefs, the severity of anxiety, and symptoms of depression. Thus, our study is of importance because the data was produced by more appropriate objective methods for the assessment of anxiety and depression. Our data suggests a more prominent role of obsessive beliefs regarding "responsibility/threat estimation" and "perfectionism/certainty" in the development of obsessive-compulsive symptoms.

The studies utilizing the measurement tools rather than the Obsessive Beliefs Questionnaire proposed that obsessive belief is important for the development of obsessive-compulsive symptoms. For instance, under possible threatening conditions, obsessive beliefs of exaggerated responsibility are thought to be related with obsessive-compulsive symptoms (32,33). These beliefs are suggested to play a role in the development of obsessive-compulsive symptoms (34). Moreover, cognitive therapy approaches targeting these beliefs are reported to be effective on obsessive-compulsive symptoms (35). On the other hand, obsessive beliefs of perfectionism

**Table 1.** Clinical characteristics and clinical scale scores of the groups

	OCD n=47 n (%)	Control n=44 n (%)	x <sup>2</sup>	df	p*
<b>Sex</b>					
Female	29 (62)	25 (56)	0.225	1	0.636
Male	18 (38)	19 (44)			
<b>Marital status</b>					
Single	29 (62)	24 (54)	0.479	1	0.489
Married	18 (38)	20 (46)			
	Mean±SD	Mean±SD	t	df	p**
Age	33.06±10.98	31.38±10.07	0.757	89	0.451
Duration of education (year)	11.08±3.61	11.90±4.19	-1.00	89	0.318
Duration of illness	10.44±8.15	-			
Number of hospitalizations	0.69±1.26	-			
HRSD	7.53±4.07	1.56±1.60	9.070	89	0.000
HARS psychic	4.93±2.82	1.27±1.30	7.859	89	0.000
HARS somatic	2.95±2.99	0.38±0.84	5.498	89	0.000
HARS total	7.89±5.25	1.65±1.71	7.509	89	0.000
Yale-Brown Obs	9.31±4.29	-			
Yale-Brown Com	8.42±3.69	-			
<b>Maudsley Scale</b>					
Checking	4.53±2.21	0.84±1.32	9.558	89	0.000
Cleaning	6.06±2.42	2.29±2.10	7.885	89	0.000
Slowness	3.48±1.85	1.06±1.10	7.504	89	0.000
Doubt	4.78±1.62	2.22±1.41	7.990	89	0.000
Rumination	5.76±2.56	1.59±1.93	8.726	89	0.000
Total	24.55±9.01	8.02±6.37	10.040	89	0.000

\*Chi-square test, \*\*t test. HRSD: Hamilton rating scale for depression; HARS: Hamilton anxiety rating scale; Obs: obsession; Com: compulsion

**Table 2.** Comparison groups in terms of obsessive beliefs

	OCD n=47 n (%)	Control n=44 n (%)	F	df	p*
Responsibility/threat estimation	75.00±16.45	51.04±19.13	10.037	1	0.002
Perfectionism and certainty	82.68±17.07	60.56±19.04	10.058	1	0.002
Importance/control of thoughts	50.17±13.79	32.95±1.31	8.415	1	0.005

\*ANCOVA (HRSD and HARS points were used as covariates)

are thought to be related to obsessive-compulsive symptoms (36,37). Additional reports defined extreme perfectionism as a sign for bad response to prospective therapies (38). All these reports strengthen the idea that obsessive beliefs of "responsibility/threat estimation" and "perfectionism/certainty" may have a role in developing obsessive-compulsive symptoms.

**Table 3.** The partial correlations between severity of obsessive beliefs and prevalence-severity of obsessive-compulsive symptoms for both groups

Obsessive Beliefs Scale	Maudsley Obsessive-Compulsive Question List												Yale-Brown Scale	
	Checking		Cleaning		Slowness		Doubt		Rumination		Total		Obs	Com
	OCD	Control	OCD	Control	OCD	Control	OCD	Control	OCD	Control	OCD	Control	OCD	OCD
Subscales	r	r	r	r	r	r	r	r	r	r	r	r	r	r
Responsibility/threat estimation	0.482***	0.636***	0.274	0.584***	0.497***	0.660***	0.435**	0.520***	0.631***	0.566***	0.561***	0.727***	0.110	0.028
Perfectionism and certainty	0.298*	0.440**	0.205	0.469**	0.463**	0.603***	0.458**	0.391*	0.522***	0.483***	0.466***	0.583***	-0.104	-0.133
Importance/control of thoughts	0.136	0.464**	0.174	0.434**	0.143	0.485***	0.174	0.393*	0.329*	0.535***	0.235	0.573***	0.042	-0.109

Obs: obsession, com: compulsion  
\* p<0.05, \*\* p<0.01, \*\*\* p<0.001

Moreover, this study showed that there was no relationship between the obsessive thoughts of "importance/control of thoughts" and obsessive-compulsive symptoms. Besides, it was reported that the prevalence of obsessive-compulsive symptoms about cleaning was not correlated with any of the obsessive belief subtypes. Regarding the data mentioned above, whereas some previous studies provided evidence for the relationship of obsessive beliefs about "importance/control of thoughts" with obsessive-compulsive symptoms (11,25), this data could not be confirmed by other studies (7). The variation of these results may be due to methodological differences among the studies. Alternatively, this may have arisen from the heterogeneous nature of OCD because of the diverse symptoms present in patients. Thus, different OCD subgroups may exhibit different obsessive beliefs from each other; and if this is true, the studies that were performed without observing these subgroups may have yielded variable results. One of the limitations of this study was the lack of appropriate methodology to dissect the OCD group into subgroups for their diverse obsessive-compulsive symptoms. It is necessary to design studies involving different OCD subgroups to investigate the differences that could be seen in obsessive beliefs in these subgroups.

In the present study, there was no relationship between the severity of obsessive-compulsive symptoms and obsessive thoughts. This may be because of the fact that the OCD patients were on therapy during the course of this study. Considering the fact that therapy may reduce the severity of the symptoms, it is not appropriate to draw certain conclusions about the irrelevance of obsessive beliefs from obsessive-compulsive symptoms. Thus, a limitation of our study may be the concurrent drug therapy in the OCD patients undergoing this study.

To conclude, our study showed that the obsessive beliefs of "responsibility/threat estimation," "perfectionism/certainty," and "importance/control of thoughts" are more common in OCD patients than those in the healthy individuals and that the obsessive beliefs of "responsibility/threat estimation" and "perfectionism/certainty" are relevant to the prevalence of obsessive-compulsive symptoms with the exception of obsessive cleaning. Collectively, our data suggest the potential role of obsessive beliefs in the development of obsessive-compulsive symptoms when the effects of depression and anxiety are disregarded.

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