

# The Investigation of Transdiagnostic Role of Obsessive Beliefs: Comparison of Clinical Groups Diagnosed with Obsessive Compulsive Disorder, Anxiety Disorders and Depression with University Students



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## SUMMARY

**Objective:** The present study aimed to investigate whether the dysfunctional obsessive beliefs are specific to obsessive-compulsive disorder (OCD) using three different clinical groups including OCD, depression, and anxiety and a control group of university students.

**Method:** The participants of the study comprised three patient groups with OCD (n=53), major depressive disorder (MDD, n=67), anxiety disorders (AD, n=73), and a group of university students (n=477). The short version of the Obsessive Belief Questionnaire (OBQ-20) was used to measure obsessive beliefs. The Semi-Structured Clinical Interviews for DSM-IV-TR (SCID-I), the Obsessive-Compulsive Inventory-Revised Form, the Beck Depression Inventory, and the State-Trait Anxiety Inventory-Trait Form were used to assess the severity of the symptoms.

**Results:** The scores of the three patient groups were significantly higher on the OBQ-20 as compared to the university students. It is noteworthy that the OBQ-20 scores did not significantly differ between the three patient groups except on the 'importance of thought' (ICT) subscale showing significantly higher scores in the group with OCD in comparison to the patients with depression and anxiety disorders.

**Conclusion:** The results suggest that obsessive beliefs may have a transdiagnostic mechanism with a possible role in the etiology and maintenance of a broad range of different psychopathologies, except in relation to the 'importance and control' of thoughts. Investigating the common processes underlying different psychopathologies is important for the etiological explanation and future treatment of the disorders.

**Keywords:** Obsessive beliefs, OCD, anxiety, mood disorder, transdiagnostic approach

## INTRODUCTION

The psychiatric disorder of obsessive-compulsive disorder (OCD) is characterized by obsessions consisting of mostly unwanted intrusive thoughts, images, and impulses and repetitive display of compulsive behaviors and mental acts (American Psychiatric Association (APA) 2013). Obsessions are known to demonstrate negative feelings of intense distress, anxiety, shame or guilt (APA 2013). Individuals can display repetitive ritualistic compulsive behaviors in order to decrease the negative feelings and eliminate the possible

adverse consequences they believe to be related to their obsessions. Compulsions can be directly observable behaviors of repeatedly washing hands and checking something as well as unobservable mental acts displayed by behaviors of repeating a word or prayer certain number of times or sorting unintelligible words and numbers (Abramowitz et al. 2009, Rachman and de Silva 1978).

Sudden intrusive thoughts in the mind are the most basic features of OCD. Research on the phenomenology of OCD showed that intrusive thoughts had 94% prevalence in

**Received:** 07.08.2020, **Accepted:** 24.11.2020, **Available Online Date:** 12.08.2021

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normal individuals without clinical diagnoses (Radomsky et al. 2014) and that only 1-3% developed OCD (Mathes et al. 2019, Ruscio et al. 2010). Therefore, majority of the studies reported in the literature have focused on the similarities and differences between normal intrusive thoughts and obsessions and the mechanisms that play a role in the transformation of unwanted thoughts into clinical obsessions (Amir et al. 1997, Julien et al. 2007)

The cognitive-behavioral models developed to explain the conversion of normal intrusive thoughts to pathological obsessions propose that experiencing unwanted thoughts is normal and that dysfunctional beliefs and interpretation processes determine the transformation of these thoughts to clinical obsessions (Clark 2004, Rachman 1997, Salkovskis 1985). In other words, individuals evaluate the sudden uncontrolled occurrence of these thoughts in their minds within a framework of dysfunctional beliefs by attributing them to personally related matters or to signs of dangerous events. Salkovskis's theory (1985, 1989) emphasizes the exaggeration of the potential danger of these thoughts and the inflated responsibility beliefs in averting them, Rachman's theory (1997) highlights the importance attributed to thoughts and cognitive evaluations on catastrophizing such that these thoughts are related to the likelihood of something feared to occur or the cognitive schema of ethicality in thought-action fusion, that is, thinking is the same as doing what is thought, which forces the individual to control the thought and do something for it. Next to these primary appraisals of thought content and the reasons for their occurrence, the latest proposed theoretical model underlines the secondary appraisals related to dysfunctional evaluation processes of thought control. It is proposed within the framework of OCD-specific beliefs that the ego-dystonic nature of unwanted thoughts cause distress and a strong desire to dispel them from the mind by control (Clark 2004). Despite the impossibility of a complete control and the inevitability of failure, the unsuccessful control efforts contribute to the intensification of the dysfunctional cognitive evaluation processes by attributing the failure to having a weak personality and anticipating the increased likelihood of the feared outcomes.

Following the proposals of these cognitive models, the Obsessive-Compulsive Cognitions Working Group (OCCWG) determined six major belief domains that play a role in the transformation of normal unwanted thoughts into clinical obsessions and developed the Obsessive Beliefs Questionnaire to measure these beliefs (OCCWG 1997). The dysfunctional beliefs comprise (a) inflated responsibility, (b) an overestimation of threat, (c) the need to control thoughts, (d) the over-importance of thoughts, (e) intolerance of uncertainty, and (f) perfectionism. The inflated responsibility is the belief that one is responsible for intrusions or the adverse consequences of the intrusions. The overestimation of threat

is the exaggeration of the severity of the harm created by the unwanted thoughts. The need to control thoughts is believing that individuals experiencing unwanted thoughts should control these thoughts in any manner. The over-importance of thoughts is the belief that the mere existence of the unwanted thought is an important matter. The intolerance of uncertainty reflects the intense sensitivity to ambiguous and unpredictable situations as the occurrence of unwanted intrusive thoughts. . Lastly, perfectionism is the expectation of finding the perfect solutions and control strategies to control unwanted thoughts.

The first of the two predominant basic views on the *beliefs specific to OCD* is that dysfunctional thoughts, as evinced by their very high prevalence, are the most prominent feature distinguishing the individuals diagnosed with OCD from the others, and has been worked into the cognitive models of the disorder (Clark 2004, Rachman 1997, Salkovskis 1985). The second and subsequent view proposes that these beliefs are transdiagnostic structures and not specific to OCD as they can be observed in other psychopathologies at similar levels. Both views have been supported in the literature. Some research has found that obsessive beliefs are more strongly associated with OCD symptoms as compared to the symptoms of other psychiatric disorders (Myers et al. 2008, Wu and Carter 2008) and that individuals with OCD have more obsessive beliefs than individuals with anxiety disorders and non-clinical samples (Julien et al. 2008, Taylor et al. 2010). On the other hand, it was shown that obsessive beliefs did not differ in OCD, depression, and anxiety disorders. Fergus and Wu (2010, 2011) have showed that individuals diagnosed with OCD did not differ from individuals with depression and anxiety disorders (Belloch et al. 2010, Fergus and Carmin 2014). An overall evaluation shows that obsessive beliefs are frequently seen in psychopathologies other than OCD, such as depression and anxiety disorders (Gillett et al. 2018, Lavender et al. 2006, Steketee et al. 1998); and that common cognitive processes may play a role in these disorders, considering the frequent comorbidity of OCD, depression and anxiety disorders (Carter et al. 2004). Individuals with depression have also been shown to have obsessive beliefs of intolerance of uncertainty, exaggerated perception of threat, excessive emphasis on thought control, exaggerated responsibility, and perfectionism (Belloch et al. 2010, Tolin et al. 2003).

### **The Aim and Scope of the Study**

Contrasting results are reported by research mainly carried out in the USA and Europe (Fergus and Wu 2010, Tolin et al. 2006) on obsessive beliefs being transdiagnostic as against being OCD-specific (Steketee et al. 1998, Wu and Carter 2008). Future studies in different cultures can contribute to the existing literature on the effects of culture and religious

**Table 1.** Descriptive Statistics of the Participant Groups

	Mean SD	OCD (n=53)		MDD (n=67)		AD (n=73)		University Students (n=477)	
		n	%	n	%	n	%	n	%
Age		31.45 10.6		36.7 8.8		37.94 1.3		20.3 1.7	
Gender	Female	22	42	16	24	37	51	393	82
	Male	31	58	51	76	36	49	84	18
Marital status	Married	25	47	37	55	53	73	2	0.4
	Single	28	53	30	45	20	27	475	99.6
Current treatment	Inpatient	46	87	44	66	59	81	-	-
	Outpatient	7	13	23	34	14	19	-	-
Education	University	25	47	50	75	37	51	-	-
	High school	20	38	11	16	25	34	-	-
	Primary school	8	15	6	9	12	15	-	-

OCB = Obsessive Compulsive Disorder, MDD = Major Depressive Disorder, AD = Anxiety Disorder.

beliefs on the clinical appearance and symptoms of OCD. One such study in Turkey compared obsessive beliefs among patients diagnosed with OCD and anxiety disorders (Yorulmaz et al. 2013). Given the high incidences of OCD and depression comorbidity (Chen and Dilsaver 1995) investigation of obsessive beliefs in MDD is important for etiological explanations and treatment plans. A review on the psychotherapeutic interventions in OCD shows that especially cognitive therapies have focused on dysfunctional beliefs (Wilhelm et al. 2015). Further, there is an ongoing debate among clinicians on whether treatment approaches focusing on transdiagnostic cognition and emotions are more beneficial in the psychotherapy of OCD and anxiety disorders. If obsessive beliefs are transdiagnostic structures, we believe that this will have reflections on the psychotherapy process. Hence, considering obsessive beliefs as possible factors with a role in the development and chronicity of different psychopathologies, this study aimed to assess the transdiagnostic significance of obsessive beliefs by comparing their characteristics in groups of patients diagnosed with OCD, major depressive disorder and anxiety disorder, and a population of healthy university students.

## METHODS

### Participants and Procedures

This study enrolled 477 university students and 193 patients of whom 149 had been newly diagnosed and 44 had been diagnosed within the previous 1 month with OCD (n=53), major depressive disorder (MDD) (n=67), and anxiety disorders (AD) (n=73). The AD group included cases of generalized anxiety disorder (GAD) (n=31), panic disorder (n=19), specific phobia (n=13) and social phobia (n=10). The main obsessions of the OCD group were associated

with contamination (n=24), doubt (n=12), aggression-harm (n=9), religion-morality (n=4), symmetry (n=3) and sexuality (n=1) (Table1).

The student participants of this research were reached by using the convenience sampling method. Firstly, the research program was announced to the students by e-mailing through the Press and Public Relations Directorate of Hacettepe University, and by means of flyers and other online methods. The volunteers who responded to the given contact address were briefly contacted back by phone calls to ask age, the faculty attended, history of psychiatric diagnosis and current treatment received. Students without any history of psychiatric diagnoses and treatment were invited to the Psychology Department of Hacettepe University and asked to read the information document on the research program before signing the consent form. Subsequently, the research questionnaires, handed out and collected back in sealed envelope, were completed during the regular class hours with the consent of the teaching staff and the participating students.

The participants of the study consisted of the inpatients of Gülhane Training and Research Hospital Department of Mental Health and Diseases and the outpatients with OCD, depression or anxiety. The outpatients were initially examined by two psychiatrists of the hospital to assess the complaints, and diagnosed OCD, MDD, and AD in a subsequent interview on the SCID-I for DSM-IV. The diagnoses of the inpatients receiving treatment for OCD, MDD or AD, who accepted to join the research, were confirmed by the same psychiatrists on the SCID-I for DSM-IV. Patients with comorbidities were not enrolled in the program. After signing the informed consent form the participating patients were taken to a quiet room to complete the questionnaires.

The inclusion criteria of the research consisted of volunteering for participation, literacy and being over 18 years of age. The exclusion criterion was having psychiatric comorbidity. The research program was approved by the Ethics Committees of Hacettepe University and Gülhane Training and Research Hospital.

### Instruments

#### **The Obsessive Compulsive Inventory-Revised (OCI-R).**

The OCI-R is a self-report scale including 18-items with a five-point Likert type rating, developed by Foa et al. (2002) to measure the severity of obsessive and compulsive symptoms over 6 subscales including checking/doubting, hoarding, neutralizing, obsessing, ordering and washing. High scores on the OCI-R show OCD symptom severity. Internal consistency and the test-retest coefficients were reported as 0.88 and 0.70, respectively (Hajcak et al. 2004). The Turkish language version of the OCI-R was prepared and validated by Yorulmaz and colleagues (2015). The internal consistency coefficients were 0.84 for the total scale and varied in the 0.64-0.80 range for the subscales, supporting the original form of the scale. In our study, the Cronbach's alpha coefficients ranged from 0.86 to 0.93 for all participant groups.

**The Obsessive Beliefs Questionnaire-20 (OBQ-20).** The OBQ-20 is a 20-item self-report questionnaire evaluating the severity of obsessive beliefs (Moulding et al. 2011). The original 87- item OBQ with 6 subscales was reduced to the OBQ-20 with 4 subscales including importance and control of thoughts, threat perception, responsibility, and perfectionism. The Cronbach's Alpha coefficient for the 4 subscales were found to range between 0.77 and 0.80 in 3 different samples (Moulding et al. 2011). The reliability and validity coefficients of Turkish version of the OBQ-20 were comparable to those of the original form and the internal consistency coefficients of the subscales ranged between 0.78 and 0.80 (Yorulmaz et al. 2019). In this study, the Cronbach's alpha coefficients were calculated separately for each of the subscales in the 4 participant groups and were found to be in the ranges of 0.69- 0.77 for threat perception subscale, 0.73- 0.78 for the responsibility subscale, 0.78- 0.88 for the importance and control of thoughts subscale and 0.67-0.74 for the perfectionism subscale. Cronbach's alpha values above 0.60 point out internal consistency of the scale at an acceptable level (George and Mallery 2010; p. 231).

**The Beck Depression Inventory (BDI).** The BDI, developed by Beck and colleagues (1961) in order to assess cognitive, emotional, and physical symptoms of depression, is a self-report scale with 21 items on a 4-point (0-3) Likert-type rating. High scores indicate the severity of depression. The BDI adapted to the Turkish language was found to have similar psychometric properties to the original version and an internal consistency coefficient of 0.80 (Hisli 1989) which

was reported as 0.90 in a patient group (Arkar and Şafak 2004). The internal consistencies ranged between 0.83 and 0.90 in the 4 participant groups of this study.

#### **The State Trait Anxiety Inventory-Trait Form (STAI-T).**

The STAI, developed by Spielberger and colleagues (1983) and translated to 30 languages (Spielberger 1989) is widely used to assess the symptoms of the state and trait anxiety. The items of the two subscales are scored by a 4-point Likert-type rating. In this study only the Trait Anxiety Subscale was used. The STAI internal consistency and test-test reliability coefficients were reported as 0.89 and 0.88, respectively (Barnes et al. 2002). The STAI was adapted to the Turkish by Öner and Le Compte (1985). The ranges for the internal consistency and the test-retest reliability coefficients for the state anxiety subscale were, respectively, 0.83-0.87 and 0.26-0.68. The corresponding ranges for the trait anxiety subscale were 0.94-0.96 and 0.71-0.86, respectively. In this study, the Cronbach's alpha for the trait anxiety subscale (STAI-T) ranged between 0.74 and 0.89 in 4 groups of participants.

### Statistical Analysis

The data were analyzed using the SPSS 18 package program (Statistic Package for Social Sciences). Firstly, the data were analyzed for outliers and missing values and mean scores were used for the missing values. Subsequently, the normal distribution assumption was tested by calculating the skewness-kurtosis values. The homogeneity of variances was investigated by calculating the Levene's test statistics.

The differentiation levels of 4 participant groups of this study were tested by comparing the scores of each group on the BDI, the OCI-R and the STAI-T to find out whether the group classification was appropriate. The analysis for determining the correlations between the scores of the 4 groups of participants separately on the three psychometric scales yielded a total of 12 (3x4) statistically significant ( $p < 0.001$ ) Pearson correlation coefficients ranging between 0.35 and 0.68. It is proposed that MANOVA should be used, as a more powerful approach, instead of separate ANOVAs when comparing multiple dependent variables across groups if the correlation coefficients between the dependent variables ranged from 0.20 and 0.60 (Huberty and Morris 1992, Meyers et al. 2006). Next to these statistical reasons, correlations between depressive, anxiety and obsessive symptoms have been demonstrated by research (e.g., Gillett et al. 2018, Myers et al. 2008, Wu and Carter 2008). Therefore, the scores on the BDI, OCI-R, and the STAI-T were compared on the one-way MANOVA by assigning these scores as the dependent variables and the participant group variables as the independent variables.

Whether obsessive beliefs differed in terms of gender, age and education level had to be tested before determining whether

these beliefs differed across 4 groups. As can be seen from Table 1, the four groups had quite different characteristics in terms of gender, age, and education. Considering the possibility of significant gender, age and education dependent differences in obsessive beliefs between the participant groups, the scores on different obsessive beliefs were analyzed with respect to these demographic variables. Firstly, the effects of gender and education level on the scores obtained from the OBQ-20 subscales were examined on the one-way MANOVA in the 4 participant groups. Then, four separate Pearson correlation analyses were carried out for the 4 participant groups to determine the relationships between age and the OBQ-20 subscales.

Finally, the 4 participant groups were compared on the one-way MANOVA on the basis of their scores on the OBQ-20 subscales responsibility, threat perception, importance-control of thoughts, and perfectionism assigned as the dependent variables and the group variables assigned as the independent variables.

In this study, because of the relatively much larger size of the student participants as compared to the patient groups created a significant intergroup imbalance which required correction, the Hochberg's GT2 was used in the post hoc analyses within the scope of MANOVA (Field 2009, p. 375). This enabled controlling the increasing Type I error probability by dividing the significance level of 0.05 by the number of comparisons. In other words, since there were 4 participant groups in the study, the p-value was taken as 0.05/6 in the post hoc test corrections.

## RESULTS

### Preliminary Analyses

Before testing the hypotheses of the study, preliminary analyses were made to assess whether the data were appropriate for the parametric statistical analyses. Firstly, analyses for missing values and outliers showed that the incidence of missing data was less than 1%, obviating the necessity of the removal of the data of any participants, and the mean values were used for the missing data. Whether the psychometric data met the assumptions of normal distribution was tested in reference to the z values obtained by dividing the kurtosis and skewness values by their standard errors. The z scores related to the OBQ-20, OCI-R, BDI, and the STAI-T were found to be between -2 and + 2 in all samples, indicating normal distribution (George and Mallery 2010). Finally, since group comparisons were to be made in this study, the assumption of variance homogeneity was tested by the Levene test statistics which was insignificant for all variables ( $p > 0.05$ ) indicating a similarity in the distribution of the variances of the OBQ-20, OCI-R, BDI, and the STAI-T scores in the 4

participant groups. Hence, the data, meeting the assumptions of distribution normality and variance homogeneity, were suitable for parametric analysis.

### Comparison of the Groups in terms of the BDI, STAI-T and the OCI-R Scores

One-Way MANOVA for comparing the mean scores of the 4 participant groups on the OCI-R, BDI and the STAI-T showed that the group effect was significant [(F(9,1616)=32.62,  $p < 0.001$ ; Wilks' Lambda=0.66; partial  $\eta^2=0.13$ ]. The results of the follow up ANOVAs performed on the scores of each psychometric scale separately after the One-Way MANOVA showed that the group effects on the OCI-R scores [(F(3,666)=29.24,  $p < 0.001$ , partial  $\eta^2=0.12$ ), the BDI scores [(F(3,666)=60.47,  $p < 0.001$ , partial  $\eta^2=0.22$ )] and the STAI-T scores [(F(3,666)=38.68,  $p < 0.001$ , partial  $\eta^2=0.16$ )] were significant.

Results of the Post Hoc analyses for each dependent variable using the Hochberg's GT2 correction showed that the OCI-R score of the OCD group ( $M=43.16 \pm 12.27$ ) was significantly higher than those of the other three groups ( $p < 0.001$ ). Also, the BDI score of the MDD group ( $M=30.19 \pm 11.51$ ) was significantly higher in comparison to the other three groups ( $p < 0.001$ ). While the STAI-T scores of the OCD, MDD, and AD groups did not differ significantly, they were significantly higher than the corresponding scores of the university students ( $p < 0.001$ ) (Table 2).

### Relationships between Dysfunctional Obsessive Beliefs and Demographic Characteristics

The one-way MANOVA results in each of the 4 participant groups, showed that gender did not have a significant effect on the OBQ-20 subscale scores of the OCD group [(F(4,45)=0.30,  $p=0.87$ , Wilks' Lambda=0.97)], AD group [(F(4,67)=1.71,  $p=0.06$ , Wilks' Lambda=0.71)], MDD group [(F(4,51)=1.18,  $p=0.33$ , Wilks' Lambda=0.92)] and university students [(F(4,472)=1.12,  $p=0.35$ , Wilks' Lambda=0.99)].

The separate one-way MANOVA analyses performed to test the effect of education level on the OBQ-20 subscale scores did not show a significant effect on the OCD group scores [(F(16,128)=0.90,  $p=0.56$ , Wilks' Lambda=0.72)] and the AD group [(F(20,206)=0.78,  $p=0.72$ , Wilks' Lambda=0.78)], but the effect was significant in the MDD group [(F(16,147)=1.22,  $p=0.25$ , Wilks' Lambda=0.68)] and the university student group [(F(12,1246)=1.17,  $p=0.29$ , Wilks' Lambda=0.97)]

Finally, the Pearson correlation analysis did not show significant correlations between age and the OBQ-20 subscales in the 4 participant groups (Table 3)

**Table 2.** Mean Scores with Standard Deviations of the Participant Groups on the OCI-R, BDI, and the STAI-T

	OCB		MDD		AD		University Students	
	M	SD	M	SD	M	SD	M	SD
BDI	20.94 <sup>b</sup>	12.97	30.19 <sup>a</sup>	11.51	21.32 <sup>b</sup>	12.94	10.98 <sup>c</sup>	8.91
OCI-R	43.16 <sup>a</sup>	12.27	34.96 <sup>b</sup>	15.37	31.81 <sup>b</sup>	15.56	27.18 <sup>b</sup>	12.37
STAI-T	53.04 <sup>a</sup>	9.53	54.99 <sup>a</sup>	8.28	57.66 <sup>a</sup>	10.12	40.94 <sup>b</sup>	9.57

Note: The small letters indicate significant differences between the variables in the rows.

OCD = Obsessive Compulsive Disorder, MDD = Major Depressive Disorder, AD = Anxiety Disorders;

BDI = the Beck Depression Inventory, OCI-R = the Obsessive Compulsive Inventory-Revised Form; STAI = the State Trait Anxiety Inventory.

**Table 3.** Correlations Between the Scores of the Participant Groups on the OBQ-20 Subscales with Respect to the Age Variable

	OCD	AD	MDD	University students
	Age	Age	Age	Age
OBQ-20 Threat	-0.07	-0.24*	-0.08	-0.07
OBQ-20 Responsibility	-0.05	-0.13	0.21	-0.10
OBQ-20 Importance-control of thought	-0.23	-0.21	0.06	-0.11
OBQ-20 Perfectionism	0.04	-0.16	0.06	-0.08

\* $p < 0.05$ . OCD = Obsessive Compulsive Disorder, MDD = Major Depressive Disorder, AD = Anxiety Disorders; OBQ = the Obsessive Belief Questionnaire.

**Table 4.** Means and Standard Deviations of the OBQ-20 Subscale Scores in the Participant Groups

	OCD		MDD		AD		University students	
	M	SD	M	SD	M	SD	M	SD
OBQ-20 Total	98.32 <sup>a</sup>	25.75	92.41 <sup>a</sup>	21.69	89.20 <sup>a</sup>	23.77	70.83 <sup>b</sup>	19.63
OBQ-20 Threat	24.14 <sup>a</sup>	7.87	22.78 <sup>a</sup>	7.04	21.51 <sup>a</sup>	7.64	17.01 <sup>b</sup>	6.06
OBQ-20 Responsibility	25.39 <sup>a</sup>	6.14	23.15 <sup>a</sup>	6.64	22.84 <sup>a</sup>	6.74	18.71 <sup>b</sup>	6.10
OBQ-20 Importance-control of thought	24.69 <sup>a</sup>	8.46	19.83 <sup>b</sup>	7.18	19.69 <sup>b</sup>	7.30	14.56 <sup>c</sup>	6.15
OBQ-20 Perfectionism	25.10 <sup>a</sup>	6.90	22.93 <sup>a</sup>	6.18	22.35 <sup>a</sup>	6.40	18.52 <sup>b</sup>	5.58

Note: The small letters indicate significant differences between the variables in the rows. OCD = Obsessive Compulsive Disorder, MDD = Major Depressive Disorder, AD = Anxiety Disorders;

OBQ = the Obsessive Beliefs Questionnaire.

### Comparison of Dysfunctional Obsessive Beliefs between Groups

One-way MANOVA result indicated that there was a significant group effect on at least one OBQ-20 subscale score [(F(12,1714)=10.6,  $p < 0.001$ , Wilks' Lambda=0.19 and partial  $\eta^2=0.88$ )]. Following the One-Way MANOVA, the results of the follow up One-Way ANOVA analyses made to determine the dependent variables with significant group effect showed that the group effect was significant on the OBQ-20 subscales threat [(F(3,666)=49.76,  $p < 0.001$ , partial  $\eta^2=0.15$ )], responsibility [(F(3,666)=19.35,  $p < 0.001$ , partial  $\eta^2=0.09$ )], importance-control of thoughts [(F(3,666)=62.59,  $p < 0.001$ , partial  $\eta^2=0.18$ )] and perfectionism [(F(3,670)=32.10,  $p < 0.001$ , partial  $\eta^2=0.10$ )].

Results of the Post Hoc test with Hochberg's GT2 correction showed that the score on the OBQ-20 subscale importance – control of thoughts was significantly higher in the OCD group than in the three other groups ( $p < 0.001$ ). Also, scores on all

OBQ-20 subscale were significantly higher in the patient groups as compared to the student group, but the scores on the threat, responsibility and perfectionism subscales did not differ significantly between the 3 patient groups. (Table 4).

### DISCUSSION

Within the scope of the study, the severity of dysfunctional obsessive beliefs was compared using the samples of OCD, MDD, AD, and university students. The results indicated that the three clinical samples more strongly endorsed dysfunctional beliefs as overestimation of threat, importance/control of thoughts, inflated responsibility, and perfectionism compared to the non-clinical healthy controls. Among the patient groups, only the OCD group had significantly higher prevalence of *importance/control of thoughts*, but did not differ significantly on the basis of the other dysfunctional beliefs. These results suggest the possible role of exaggerating

the importance and controlling thoughts in the etiology of OCD, and the transdiagnostic significance of the other dysfunctional beliefs which may contribute to the severity of psychiatric disorders, as demonstrated especially in depressive and anxiety disorders.

Despite the emphasis by the cognitive models of OCD that dysfunctional beliefs are the cardinal symptoms differentiating OCD from other mental disorders (Clark 2004), empirical research has provided evidence to doubt the specificity of these beliefs to OCD (Steketee et al. 1998, Wu and Carter 2008). The OBQ-44 scores of groups with OCD were shown to be significantly higher as compared to those with anxiety disorders (Julien et al. 2008) or not to differ significantly from scores of groups with depressive or anxiety disorders (Belloch et al. 2010, Fergus and Wu 2010, Viar et al. 2011).

The findings of the present study indicated that while some of the dysfunctional beliefs are expected to be specific to OCD, beliefs such as *perfectionism*, *responsibility*, and *threat* could have transdiagnostic significance, which has been proposed to underlie the high comorbidity rates in anxiety and mood disorders (Belloch et al. 2010, Fergus and Wu 2010). Although OCD has been taken out of the anxiety disorders category in the DSM-V (APA 2013), it still shares a common psychological process with anxiety disorders (Fergus and Carmin 2014). Despite the dominant classification systems categorizes as different constructs, the processes underlying obsessions and worry might be similar and hence the argument for the transdiagnostic character of obsessive beliefs.

This study, while providing evidence for increased prevalence of beliefs related to perfectionism, threat estimation and responsibility across anxiety, depression and OCD, has also drawn attention to a possible specific relationship between the cognitive domains related to the importance and control of thoughts and OCD, which is consistent with the reports of some of the previous studies (Julien et al. 2008, Tolin et al. 2006) and supports the cognitive model developed by Clark (2004), despite the contrary arguments by others (Belloch et al. 2010). While the cognitive model of OCD developed by Clark (2004) acknowledges the validity of the inflated sense of responsibility (Salkovskis 1985) and the excessive importance attributed to thinking (Rachman 1997) in OCD, Clark also draws attention to the beliefs about importance of controlling one's thoughts and the significance of the misinterpretations attributed to the failure to control intrusive thoughts. The paradoxical effect of trying to suppress thought, first proposed by Wegner and Zanakos (1994), is a phenomenon that is particularly emphasized in Clark's model with the argument that the discomfort of intrusive thoughts creates a strong motivation for control which inevitably fails even under the

most favorable conditions since perfect control is not possible. According to the model, the tendencies to misinterpret failure and success in perfect thought control as indicative of, respectfully, personality weakness and strength or success, further promote the effectiveness of the unwanted thought as well as the notions behind the erroneous interpretations, leading to increases in both the control efforts and the severity of the involuntary thoughts with the possibility of their transformation to clinical obsessions.

Considering the features of the clinical groups compared in this study, it is understandable that beliefs about the importance and control of thoughts are specific to OCD. Negative automatic thoughts seen in depression are, unlike obsessions, compatible with the self-perception of an individual. For this reason, negative automatic thoughts show a positive relationship with rumination, which causes the elaboration of thought by leading to thinking repeatedly and in detail instead of causing the individual to quickly drive these thoughts away from the mind (Brinker and Dozois 2008). Rumination is accepted as an important mechanism that increases the severity of depression (Nolen-Hoeksema 2000). Similarly, in anxiety disorders and especially in generalized anxiety disorder (GAD), the cognitive structures called 'worry'P are also viewed as ego-syntonic. The metacognitive-focused cognitive model of anxiety disorders, developed by Wells (1999) on the basis of GAD, also provides explanations that are consistent with this information. Unlike other cognitive conceptualizations, this model emphasizes the role of metacognitive beliefs and evaluations rather than the belief that the world is a dangerous place. In GAD, worry is not only a symptomatic consequence of anxiety but also is used to deal with the expected dangers and threats. Instead of trying to avoid or suppress thoughts, the individual tries to stay away from situations and environments that cause the worry or feels the need to do something constructive during anxiety. Purdon (1999) postulated that patients with OCD are more likely to suppress thoughts than individuals with other anxiety disorders because of the ego-dystonic nature of the obsessions. Given their difference from other types of clinical cognitions, obsessions are defined as more intrusive, more unacceptable, more involuntary, and more likely to elicit a thought-action fusion bias. Therefore, obsessions elicit stronger urges to suppress or control in comparison to more ego-syntonic cognitive processes such as worries and negative automatic thoughts (Clark 2004). Consistently, research indicates that patients with OCD show a higher tendency to believe that complete control is necessary and possible and that they must have complete control over their thoughts (Purdon and Clark 1994, Salkovskis 1985) and demonstrate a higher tendency to use maladaptive control strategies (Abramowitz et al. 2003). Thus, the emphasis by current research on the OCD-specific nature of 'importance-control

of thoughts' is broadly consistent with the current framework of the cognitive model of OCD (Clark 2004, Purdon and Clark 1994, Salkovskis 1985).

Evaluating together the results underlines the role of exaggerated beliefs about the importance and control of thought in the etiology of OCD. Although the small group size of the patient groups in this study prevented statistical analyses for modeling, a holistic interpretation of the results within the framework of the previously proposed cognitive models of OCD is possible. Hence, in OCD, the exaggeration of controlling thoughts can increase the frequency and diversity of control strategies, thereby promoting the more severe efforts to control that would unavoidably result in increased incidence of unsuccessful control attempts and dysfunctional evaluations regarding unsuccessful control can increase the severity of OCD symptoms.

This study has various limitations. The participants were reached in a single hospital by the convenience sampling method which weakens the external validity of the results. The cross-sectional data acquisition prevents constructing cause-result relationships. The sizes of the clinical samples were limited compared to the size of the non-clinical sample. Therefore, increasing the sample size of the clinical groups is important in terms of comparability. Using self-report questionnaires may be considered to contribute to the potential effects of bias on the results. The unequal representation of all symptom subtypes by the OCD group is believed to limit the generalization of the results. Another important limitation of the study is the characteristics of the clinical control AD group of participants consisting of patients with different psychopathologies such as generalized anxiety disorder, panic disorder, specific phobia, post-traumatic stress disorders, and social phobia. The unequal distribution of the diagnoses are believed to prevent the generalization of the results for anxiety disorders. Also, although each of these diagnostic groups can be explained on the basis of a common cognitive behavioral model, the etiological factors specific to the diagnoses are always important. Therefore, future studies should include more homogeneous groups of anxiety patients to contribute to the generalization of the results and more reliable comparisons across groups. While the analyses carried out gave results specific to the OCD and the MDD groups of participants, this was not valid for the AD group of participants. On the basis of this result, future studies are expected to engage a wider spectrum of anxiety disorders and use different tools for trait anxiety measurement. Having both outpatients and inpatients in the patient groups could have contributed to the differences in symptom severity of the relevant disorders thereby creating an effect of confounding variables. Considering the differences in the diagnostic criteria of the DSM-IV-TR and the

DSM-5, confirming the psychiatric diagnoses of the patient groups on the basis of the DSM-IV-TR may be considered another limitation, which, however, could not be prevented since the translation and the adaptation the Turkish version of the semi-structured interview for the SCID-5/CV had not been completed when this research was undertaken. In similar studies to be undertaken in the future, it is believed that comparisons should be retested on the DSM-5 criteria. Finally, despite the preliminary interviews and the subsequent use of the SCID-I, difficulties may have been experienced in eliminating comorbidities and the clear application of the diagnostic thresholds. Therefore, confirmation of the results of this study in future by using larger participating patient groups should be important for the generalization of the results.

Despite the cited limitations, the results of this study highlight the components that are specific to psychopathologies as well as the importance of some common transdiagnostic processes in clinical practice. The over-importance of thoughts, beliefs towards thought control and the dysfunctional appraisals of unsuccessful control attempts in OCD constitute important points to be addressed by the therapeutic approaches in clinical practice.

In addition to the cognitive changes such as normalization of intrusive thoughts that appear involuntarily in the mind, examining the role of dysfunctional appraisals in the persistence of obsessions, determining thought control strategies and examining their effects, replacing thoughts related to mental control with functional thoughts, forming alternative thoughts, the realization of behavioral change, and including the inhibition of control responses constitute the main objectives of cognitive-behavioral therapy. Our findings support their importance.

Faulty evaluations and dysfunctional beliefs that '*thought is dangerous, it will bring harm, that having a thought is equivalent to doing it or that thought increases the possibility of realization, that thoughts should be suppressed to prevent harm, and not suppressing is failure*' should be addressed and changed using cognitive restructuring techniques during the therapy process. The disaster-related cognitions caused by the inability to control thoughts and thought-action fusion should also be addressed using cognitive techniques. Clinical practice should focus on the real problem in OCD, which is the exaggeration of the importance of thoughts and the effort to suppress them and not the unwanted intrusive thoughts that come to mind. In addition to all this, the obsessive beliefs, shown not to be specific to OCD but presenting in depressive and anxiety disorders, should be investigated as transdiagnostic mechanisms by different research methods. Next to its contribution at the theoretical level, this can be a starting

point for the development of therapeutic models focused on more basic mechanisms and time and effort saving common intervention techniques for different psychopathologies

## REFERENCES

- Abramowitz JS, Taylor S, McKay D (2009) Obsessive-compulsive disorder. *The Lancet* 374: 491-9.
- American Psychiatric Association (2013) *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5)*. Washington, DC: American Psychiatric Association.
- Amir N, Cashman L, Foa EB (1997) Strategies of thought control in obsessive-compulsive disorder. *Behav Res Ther* 35: 775-7.
- Arkar H, Safak C (2004) Exploring Dimensions of the Beck Depression Inventory in a Clinical Sample. *Turk Psikol Derg* 19(53): 117-23.
- Barnes LLB, Harp D, Jung WS (2002) Reliability generalization of scores on the Spielberger State-Trait Anxiety Inventory. *Educ Psychol Meas* 62: 603-18.
- Beck AT, Ward CH, Mendelson M et al (1961) An inventory for measuring depression. *Arch Gen Psychiatry* 4: 561-71.
- Belloch A, Morillo C, Luciano JV et al (2010) Dysfunctional belief domains related to obsessive-compulsive disorder: A further examination of their dimensionality and specificity. *Span J Psychol* 13: 376-88.
- Brinker JK, Dozois DJ (2009) Ruminative thought style and depressed mood. *J Clin Psychol* 65: 1-19.
- Carter AS, Pollock RA, Suvak MK et al (2004) Anxiety and major depression comorbidity in a family study of obsessive-compulsive disorder. *Depress Anxiety* 20(4): 165-74.
- Chen YW, Dilsaver SC (1995) Comorbidity for obsessive-compulsive disorder in bipolar and unipolar disorders. *Psychiatry Res* 59(1-2): 57-64.
- Clark DA (2004) *Cognitive-behavioral therapy for OCD*. New York, Guilford Press.
- Fergus TA, Carmin CN (2014) The validity and specificity of the short-form of the Obsessive Beliefs Questionnaire (OBQ). *J Psychopathol Behav Assess* 36: 318-28.
- Fergus TA, Wu KD (2010) Do symptoms of generalized anxiety and obsessive-compulsive disorder share cognitive processes? *Cognitive Ther Res* 34: 168-76.
- Fergus TA, Wu KD (2011) Searching for specificity between cognitive vulnerabilities and mood and anxiety symptoms. *J Psychopathol Behav Assess* 33: 446-58.
- Field A (2009) *Discovering statistics using SPSS. Third Edition*. Sage Publications.
- Foa EB, Huppert JD, Leiberg S et al (2002) The Obsessive-Compulsive Inventory: Development and validation of a short version. *Psychol Assess* 14: 485-96.
- George D, Mallery P (2010) *SPSS for Windows step by step. A simple study guide and reference (10th Edition)*. Boston, Pearson Education.
- Gillett CB, Bilek EL, Hanna GL et al (2018) Intolerance of uncertainty in youth with obsessive-compulsive disorder and generalized anxiety disorder: A transdiagnostic construct with implications for phenomenology and treatment. *Clin Psychol Rev* 60: 100-8.
- Hajcak G, Huppert JD, Simons RF et al (2004) Psychometric properties of the OCI-R in a college sample. *Behav Res Ther* 42(1): 115-23.
- Hisli N (1989) A reliability and validity study of Beck Depression Inventory in a university students. *J Psychol* 7(1): 3-13.
- Huberty CJ, Morris JD (1992) Multivariate analysis versus multiple univariate analyses. *Psychol Bull* 105: 302-8.
- Julien D, Careau Y, O'Connor KP et al (2008) Specificity of belief domains in OCD: Validation of the French version of the Obsessive Beliefs Questionnaire and comparison across samples. *J Anxiety Disord* 22: 1029-41.
- Julien D, O'Connor KP, Aardema F (2007) Intrusive thoughts, obsessions, and appraisals in obsessive-compulsive disorder: A critical review. *Clin Psychol Rev* 27: 366-83.
- Lavender A, Shubert, I, de Silva P et al (2006) Obsessive-compulsive beliefs and magical ideation in eating disorders. *Br J Clin Psychol*, 45: 331-42.
- Mathes BM, Morabito DM, Schmidt NB (2019) Epidemiological and clinical gender differences in OCD. *Curr Psychiatry Rep* 21: 1-7.
- Meyers LS, Gamst G, Guarino AJ (2006) *Applied multivariate research: Design and interpretation*. Sage Publications.
- Moulding R, Anglim J, Nedeljkovic M et al (2011) The Obsessive Beliefs Questionnaire (OBQ): Examination in nonclinical samples and development of a short version. *Assess* 18: 357-74.
- Myers SG, Fisher PL, Wells A (2008) Belief domains of the Obsessive Beliefs Questionnaire- 44 (OBQ-44) and their specific relationship with obsessive-compulsive symptoms. *J Anxiety Disord* 22: 475-84.
- Nolen-Hoeksema S (2000) The role of rumination in depressive disorders and mixed anxiety/depressive symptoms. *J Abnorm Psychol* 109: 504-11.
- Obsessive Compulsive Cognitions Working Group (1997) Cognitive assessment of obsessive-compulsive disorder. *Behav Res Ther* 35: 667-81.
- Oner N, Le Compte A (1985) *Handbook of State-Trait Anxiety Inventory*. Istanbul, Bogazici University.
- Purdon C (1999) Thought suppression and psychopathology. *Behav Res Ther* 37: 1029-54.
- Purdon C, Clark DA (1994) Obsessive intrusive thoughts in nonclinical subjects. Part II. Cognitive appraisal, emotional response and thought control strategies. *Behav Res Ther* 32: 403-10.
- Rachman S (1997) A cognitive theory of obsessions. *Behav Res Ther* 35: 793-802.
- Rachman S, de Silva P (1978) Abnormal and normal obsessions. *Behav Res Ther* 16: 233-48.
- Radomsky AS, Alcolado GM, Abramowitz JS et al (2014) Part I—You can run but you can't hide: Intrusive thoughts on six continents. *J Obsess-Compuls Rel* 3(3): 269-79.
- Ruscio AM, Stein DJ, Chiu WT et al (2010) The epidemiology of obsessive-compulsive disorder in the National Comorbidity Survey Replication. *Mol Psychiatry* 15: 53-63.
- Salkovskis PM (1985) Obsessional-compulsive problems: A cognitive-behavioural analysis. *Behav Res Ther* 23: 571-83.
- Salkovskis PM (1989) Cognitive-behavioral factors and the persistence of intrusive thoughts in obsessional problems. *Behav Res Ther* 27(6): 677-82.
- Spielberger CD (1989) *State-Trait Anxiety Inventory: A comprehensive bibliography*. Palo Alto, CA: Consulting Psychologists Press.
- Spielberger CD, Gorsuch RL, Lushene R et al (1983). *Manual for the State-Trait Anxiety Inventory*. Palo Alto, Consulting Psychologists Press.
- Steketee G, Frost RO, Cohen I (1998) Beliefs in obsessive-compulsive disorder. *J Anxiety Disord* 12: 525-37.
- Taylor S, Coles ME, Abramowitz JS et al (2010) How are dysfunctional beliefs related to obsessive-compulsive symptoms? *J Cogn Psychother* 24: 165-76.
- Tolin DF, Worhunsky P, Maltby N (2006) Are "obsessive" beliefs specific to OCD?: A comparison across anxiety disorders. *Behav Res Ther* 44: 469-80.
- Tolin DF, Woods CM, Abramowitz JS (2003) Relationship between obsessive beliefs and obsessive-compulsive symptoms. *Cognitive Ther Res* 27: 657-69.
- Viar MA, Bilsky SA, Armstrong T et al (2011) Obsessive beliefs and dimensions of obsessive-compulsive disorder: An examination of specific associations. *Cognitive Ther Res* 35: 108-17.
- Wegner DM, Zanakos S (1994) Chronic thought suppression. *J Pers* 62: 615-40.
- Wells A (1999) A cognitive model of generalized anxiety disorder. *Behav Modif* 23: 526-55.
- Wilhelm S, Berman NC, Keshaviah A et al (2015) Mechanisms of change in cognitive therapy for obsessive compulsive disorder: Role of maladaptive

beliefs and schemas. Behav Res Ther 65: 5-10.

Wu KD, Carter SA (2008) Further investigation of the Obsessive Beliefs Questionnaire: Factor structure and specificity of relations with OCD symptoms. J Anxiety Disord 22: 824-36.

Yorulmaz O, Bastug G, Tuzer V et al (2013) Misinterpretations of intrusions,

obsessive beliefs and thought control strategies in patients with obsessive-compulsive disorder. Anadolu Psikiyatri Derg 14(3): 183-91.

Yorulmaz O, Gungor D, Gokdag C (2019) The Obsessive Beliefs Questionnaire: Adaptation of Its Short Forms to the Turkish and Examination of Their Psychometric Properties. Turk Psikiyatri Derg 30: 191-9.

Yorulmaz O, Inozu M, Clark DA et al (2015) Psychometric properties of the Obsessive Compulsive Inventory-Revised in a Turkish analogue sample. Psychol Rep 117: 781-93.

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*This study was supported by the Scientific and Technical Research Council of Turkey (Grant No: 113 K214).*