

The Obsessive Beliefs Questionnaire: Adaptation of Its Short Forms to the Turkish and Examination of Their Psychometric Properties



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SUMMARY

Objective: The Obsessive Beliefs Questionnaire (OBQ) is a frequently used instrument in relevant literature for assessment of cognitive biases that play critical roles in appraisal of intrusive experiences in Obsessive-Compulsive Disorder (OCD). The questionnaire was initially designed as a 44-item questionnaire, then was shortened to 20 items and lastly was brought down to 9-items. Since so far, only the 44-item version has been available in Turkey, this study aimed to examine psychometric properties of the two shortened OBQ forms in a community sample.

Method: The study included the data sets of two adult groups on the OBQ and the psychometric tools completed on the OCD symptoms, self-ambivalence and thought action fusion.

Results: Results of the explanatory and confirmatory factor analyses showed that the Turkish language versions of the OBQ-20 and OBQ-9 had acceptable internal consistency coefficients, similar factor structures to the original studies on the questionnaire, and that, on the bases of the extra modeling tests, the total and the subdimensional scores of both questionnaires were usable for OCD assessments. Moreover as expected, there were significant correlations among these biases, OCD symptoms, self-ambivalence and thought-action fusion.

Keywords: Obsessive compulsive disorder, obsessive behaviors, Obsessive Beliefs Questionnaire, psychometric properties

INTRODUCTION

Obsessive Compulsive Disorder (OCD) is a mental problem which is characterized by intrusive thoughts/impulses/images as obsessions and/or repetitive and ritual like behaviors as compulsions which adversely affect the life quality of both the patients and others in their close social environment. Lifelong prevalence of DSM-5 (American Psychiatric Association 2013) based diagnosis OCD has been reported vary in the 1-3% range (Hollander et al. 2016). Amongst various theories and models on OCD, those based on the cognitive model (Beck 1964, Beck 2011) emphasizing the importance of “interpretation and appraisal processes” have drawn attention. This point of view (Clark 2004, Salkovskis 1985) argues that the patient’s style of interpreting the involuntarily experienced

impulses or thoughts are predictive of the development and chronicity of OCD rather than the experiences as such. It is thought that dysfunctional and biased beliefs underlie the said misappraisal of experiences, which have been classified by the Obsessive Compulsive Cognitions Working Group (OCCWG) (1997) under 6 headings comprising the domains of inflated personal responsibility, importance of thoughts, and thought control, threat estimation, need for certainty and perfectionism. The roles of these beliefs in OCD are confirmed by various empirical studies such as those by Calamari et al. 2006, Taylor et al. 2005, Wu and Carter 2008. These beliefs are reported to predict the severity of OCD symptoms, showing differences in the approaches to the experiences by OCD diagnosed and clinically healthy individuals (Tolin et al. 2008, Wheaton et al. 2010) and that

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they are more associated with OCD symptoms as against the symptoms of other psychopathologies (e.g., Wu and Carter 2008, Myers et al. 2008).

Next to these, research also shows association of the beliefs about the importance and control of thoughts on responsibility and threat perception with all symptoms and subtypes of control and cleanliness compulsions and the association of perfectionism and definitiveness especially with organization and symmetry (Myers et al. 2008, Taylor et al. 2010). However, some obsessive beliefs have been associated with other psychiatric disorders such as anxiety disorders (Steketee et al. 1998, Taylor et al. 2006), major depressive disorder (Bahçeci et al. 2014) and eating disorders (Lavender et al. 2006). Further, it has been claimed that perfectionism and intolerance of uncertainty (Gentes and Ruscio 2011, Gillett et al. 2018, Mahoney and McEvoy 2012) or concepts such as mental contamination can be transdiagnostic factors (Coughtrey et al. 2018) and that these beliefs may be common factors in different problems, causing the chronicity of these problems. After the observation of overall OCD symptom reduction after psychotherapy (Adams et al. 2012, Anholt et al. 2010), it was confirmed that changes in the beliefs specific to OCD precede behavioural symptom reduction following psychotherapy (Wilhelm et al. 2015).

Following the classification of the OCD-specific beliefs by the OCCWG in 1997, the 87-item Obsessive Beliefs Questionnaire (OBQ), evaluating the 6 specified belief domains, was developed (OCCWG 2001,2003). Based on the shared variance among the belief domains and symptoms, this questionnaire was shortened to 44 items (OBQ-44) with 3 main composite factors; namely as responsibility-threat perception, importance/control of thoughts and perfectionism-certainty. The OBQ-44 has been used with the aim to assess typical biases seen in OCD such as perceiving threat and assuming personal responsibility in many topics, and overestimating thoughts coming to mind and the necessity of their control, believing that these are absolute, certain and reachable in life, feeling need for certainty and getting distressed by uncertainty. (e.g., Julien et al. 2006, Taylor et al. 2006) and the psychometric properties have been demonstrated in many studies and in different languages (e.g., Bortelencu et al. 2012, Myers et al. 2008, Rahat et al. 2012, Shams et al. 2014, Wang et al. 2015). Works of Yorulmaz and Gençöz (2008) and Boysan et al. (2010) on adaptation of the OBQ-44 to the Turkish language demonstrated psychometric properties similar to the original version, and satisfactory results were reached after testing on OCD diagnosed individuals (Boysan et al. 2010, Yorulmaz et al. 2013). On the other hand, investigations have begun in the recent years to resolve the problem of overlaps in domain divisions (Wu and Carter 2008) and to develop a more practical and shorter version of the OBQ. For

instance, Moulding et al. (2011) developed the OBQ-TRIP, a 4-factor version comprising 38 items on threat perception, responsibility, perfectionism-certainty and importance/control of thoughts and proving its validity and reliability by testing it in a non-clinical population. Subsequently, realizing that the item numbers did not significantly alter the diagnostic capacity, these authors also developed the 20-item questionnaire (OBQ-20) with the 4-dimensions of threat prediction, responsibility, importance of thoughts and perfectionism, and, after completing the preliminary analyses, recommended its further use for testing purposes. Satisfactory psychometric performance of the OBQ-20 was further demonstrated on non-clinical population samples by Fergus and Carmin (2014) and Fergus et al. (2017) who also tested models with different factors and claimed that the total score and subscale scores of the OBQ-20 can be used separately on evaluations. Hence, it is observed that this short form has been used in different countries and different studies in a short span of time. For example, OBQ-20 has been already included in several studies examining different concepts such as anxious attachment (Fergus and Rowatt 2014), moral beliefs (Abramovitch et al. 2013, Kang et al. 2016), contamination obsessions (Melli et al. 2016) and anxiety sensitivity (Poli et al. 2017). Lastly, Gagné et al. (2018) have asserted that long versions of questionnaires may even lead paradoxical outcomes including repeatedly control of answers and slowness, because of the typical problematic tendencies of certainty, doubting and intolerance for uncertainty in OCD. Accordingly, these authors starting work with the OBQ-44 on OCD diagnosed clinical population, developed a 9-item version of the OBQ (OBQ-9). As with the original OBQ-44, the OBQ-9 is composed 3 main domains of responsibility-exaggerated threat perception, importance/control of thoughts, and perfectionism-intolerance of uncertainty. When pre- and post-therapy scores of OCD diagnosed individuals were compared by correlation and regression analyses, powerful relationship with OCD symptoms, and sensitivity to the effects of therapy were demonstrated.

As can be seen, the original 87-item version shortened to 44, 20 and lastly the 9-item versions are frequently used in the literature on current theoretical models specific to OCD. As mentioned previously, although the 44-item version of this questionnaire is used in Turkey, the other shorter versions are still not available in the Turkish language. On the other hand, it is known that obsessive-compulsive behaviours are rooted in the conditions of daily life, that abnormal as they may seem, these symptoms are present in 85-90% of the general population, the actual differences being in their frequency, disturbing nature and the reactions they evoke (e.g., Purdon and Clark 1993, 1994). Furthermore, presence of these core beliefs, determining the interpretation of the intrusive compulsions, precede the resulting problematic behaviours

leading to the psychopathological problems of OCD (e.g., Abramowitz et al. 2014; the OCCWG 2003/ 2005). Therefore, participants without psychiatric OCD diagnoses are frequently included in empirical studies on psychological assessment, tests of theoretical models, psychotherapeutic interventions and experimental studies (Abramowitz et al. 2014, Gibbs 1996).

Based on these determinations and some of the empirical studies, it is aimed in this study to investigate on different experimental samples the structural validity of the OBQ-20 and the OBQ-9 by exploratory and confirmatory factor analyses and modeling tests, and concurrent validity by analyzing their correlations with related variables and lastly their internal consistency and reliability. Thus, by following the original studies, it is hoped to contribute a frequently used practical psychometric tool to the evaluations in clinical and nonclinical studies in our country as well as the intervention required before the development of the observed symptoms to psychiatric problems.

METHOD

Participants

Two different adult samples were enrolled in the present study. The first group consisted of 361 adults with a mean age of 30.39 ($\pm$ 13.02; range 17- 67) and consisting of 219 (61%) females, with 209 (58%) having university or higher education, 261 (72%) being single. These participants living in different cities in Turkey joined the study online. The paper-pencil interviewing method was used with the second group of participants in order to have better and comprehensive representation of the general population thereby eliminating the possibility of limiting or biased composition of the experimental population contacted via the internet. The second group of participants consisted of 645 adult residents of Bursa with a mean age of 36.95 (SD= 11.40, range: 18- 65); including 315 (48%) females, 196 (30%) having university or higher education, and 242 (37%) single individuals.

Data Collection Instruments

The Obsessive Beliefs Questionnaire (OBQ): The Obsessive Beliefs Questionnaire was designed by the OCCWG (2001) in order to assess OCD-specific beliefs. As a 87 items, which was subsequently revised as the OBQ-44; (OCCWG, 2003, 2005) with 44 items each with a 7-Likert type scoring (1= strongly disagree, 7= strongly agree) querying dysfunctional beliefs on 3 subdimensions including importance/control of thoughts, responsibility/threat perception and perfectionism/certainty. Validity, reliability and satisfactory psychometrical properties in clinical and non-clinical samples of the OBQ-44 have been shown by studies in many languages (e.g.,

Bortoncello et al. 2012, Myers et al. 2008), including its Turkish language version (e.g., Boysan et al. 2010, Yorulmaz and Gençöz 2008, Yorulmaz et al. 2013). Recently, a 38-item, 4-factor version and also a 20-item, 3-factor version (Moulding et al. 2011) have been formed and their validity and reliability have been reported (Gagne et al. 2018). The OBQ-44, previously adapted to our language, was used in line with the aims of this study

The Obsessive-Compulsive Inventory-Revised (OCI-R); Foa et al. (2002): The Obsessive-Compulsive Inventory-Revised is a recent version of an inventory that was developed in 1990s to evaluate the level of discomfort from different types of OCD symptoms. The OCI-R is composed of 5 Likert type 18 items. It is assumed that distress from symptoms increases as the scores on the inventory increase in the 0-72 range. The OCI-R evaluates six subdimensions of OCD symptoms as the cleaning, control, obsessions, mental neutralization, ordering and hoarding. The psychometric characteristics of the OCI-R was supported in many cultures, and it has frequently been used in many different studies (e.g. Abramowitz and Deacon 2006, Overduin and Furnham 2012). The OCI-R, adapted to the Turkish language by Yorulmaz et al. (2015) in a university student sample, was found have a valid 6-factor structure correlating positively and significantly with different scales on OCD symptoms and OCD-specific thought control, the OBQ subdimensions and neuroticism as a personality characteristic and reliability based on internal consistency with Cronbach's α coefficients in the range 0.77-0.90.

The Padua Inventory- Washington State University Revision (PI-WSUR); Burn et al. 1996): The Padua Inventory-Washington State University Revision consists of 39 items with 5-point Likert type options evaluating OCD symptoms in 5 dimensions including checking compulsions, contamination obsessions and washing compulsions, dressing/grooming compulsions, obsessional thoughts and impulses of harm to self and others. Psychometric properties of the abbreviated version, frequently used in OCD literature, were supported by Burn et al. (1996). The PI-WSUR was adapted to the Turkish language by Yorulmaz et al. (2007), and was shown to have satisfactory internal consistency and correlations with other symptoms and cognitive factors related to OCD.

The Thought-Action Fusion Scale (TAFS); Shafran et al. 1996): The Thought-Action Fusion Scale is a 19-item scale developed to evaluate the frequently observed cognitive bias that can be explained as assuming the thoughts occurring in the mind as being real. The TAFS has two factors with good psychometric properties, one being the: TAF-morality on the belief that having morally unacceptable thoughts is as bad as actually carrying them out and the other being the TAF-likelihood, referring to the belief that certain thoughts cause particular events that can be related to one's self (likelihood-self) or to someone else (likelihood-others). Validity and

reliability of the Turkish language version of the TAFS has been observed in both clinical and non-clinical samples (e.g., Yorulmaz et al. 2008, Yorulmaz et al. 2004).

The Self-Ambivalence Measure (SAM; Bhar & Kyrios 2007): Self Ambivalence Measure is an 18-item self-report instrument with 5 Likert type options designed to examine the conflicts of individuals in self-related areas such as self-values, moral evaluation and lovability, which can also be frequently seen in OCD. The scale is composed of self-ambivalence, moral ambivalence and social acceptability factors. Its validity was accepted in the first evaluation on a clinical sample, when it found that OCD diagnosed patients had higher scores on the SAM than the other groups with psychiatric diagnoses. The SAM scores correlated with OCD symptoms beyond depression and anxiety, self-confidence and OBQ subdimensional scores, and, as shown by regression analyses, it predicted with significance the OCD symptoms and beliefs. An internal consistency with a Cronbach's α coefficient of 0.88 and test-retest reliability ($r = 0.44$, $p < 0.001$) was reported. The SAM was adapted to the Turkish language by Üncüer (2015), who demonstrated its reliability with a Cronbach's α coefficient of 0.88; and test-retest coefficient of $r = 0.71$). Its validity was confirmed by a 3-factor structure, significantly correlating with neuroticism, self-confidence and the parenting styles such as acceptance and rejection. The SAM was included in the present study to examine the validity of OBQ-20 by using its total score as we did not have hypotheses in relation to its subdimensions.

Process

This study is based on the analysis of selected data of two separate OCD-related current studies. Data collection was started after obtaining the approvals of the Ethics Committee of Dokuz Eylül University Literary Studies Faculty and the Non-interventional Research Ethics Committee of Bursa Uludağ University, where the studies were based. In İzmir, where data of the first study was acquired online, announcements were made on various internet web sites, and the volunteers were asked to complete the psychometric tools after submitting the informed consent forms. In Bursa, potential participants were reached by means of appropriate sampling methods, the context of the second study was explained, consent forms were obtained and they were asked to complete the questionnaire sets printed on paper.

RESULTS

Exploratory Factor Analysis and Reliability Results

In the first study aiming at the structural validity the revised versions of the OBQ, exploratory factor analyses using the oblique rotation and principal axis factoring methods were carried out on the OBQ-20 in order to assess inter-factor

relationships and consistency with the original study on the OBQ-20. According to result of exploratory factor analysis, the Kaiser-Meyer-Olkin measure of sampling adequacy was .92, indicating that the present data were suitable for principal axis factoring analysis. Similarly, Bartlett's test of sphericity was significant ($\chi^2_{190} = 3018.54$, $p < .001$), showing acceptable correlations between all of the items to proceed with the analysis. Parallel to the original version of OBQ-20, a total of 4 factors were found with Eigen values of greater than 1, individually being 7.65, 1.66, 1.26 and 1.14, and which explained, respectively 33.69%, 5.8%, 3.98% and 3.21% of the variance, totaling 48.68% (Table 1). In a parallel manner to the results of Fergus et al. (2017), 5 items were collected under each of the 4 factors headed as threat estimation, responsibility, importance/control of thoughts, and perfectionism. Item loading ranges and internal consistency coefficients of the 4 factors were found to be 0.40-0.53, $\alpha = 0.79$ for threat estimation, 0.58-0.75, $\alpha = 0.80$ for responsibility, 0.63-0.70, $\alpha = 0.79$ for importance/control of thoughts, and 0.57-0.77, $\alpha = 0.78$ for perfectionism.

In the same set of data, exploratory factor analysis was carried out by principal axis factoring using the oblique rotation method, as recommended by Gagne et al. (2018) on the OBQ-9, the 9-item version of the OBQ. The initial analyses revealed 2 factors with Eigen values above 1, but the analyses were repeated using the direct oblimin rotation with 3-factor limitation in order to make comparisons with the original study and to gain theoretical significance, which resulted in a third factor with an Eigen value of 0.97; and the first, second and third factors explained, respectively, 33.65%, 8.52% and 5.72% of the variance totaling 47.89%. As presented in Table 1, item loading ranges and internal consistency coefficient α of the 3 factors used in the OBQ-9 were 0.49-0.83, $\alpha = 0.75$ for perfectionism/uncertainty intolerance, 0.47-0.76, $\alpha = 0.74$ responsibility/threat perception and 0.64-0.70, $\alpha = 0.70$ importance of thoughts/control.

Results of Confirmatory Factor Analyses

Confirmatory factor analyses (CFAs) were conducted in the second set of data to examine the factor structures of the Turkish language version of the OBQ-20 and the OBQ-9. Also, on the basis of the alternative models strategy of Fergus et al. (2017) in their validity study on the OBQ-20, attempts were made to determine the best model for scoring and interpretation. Hence, four different models on OBQ-20 and OBQ-9, totaling 8 models consisting of the one-factor model with only total score without subdimensions, the non-correlated factors model with 3 non-correlated factors for the OBQ-9 and 4 non-correlated factors for the OBQ-20, correlated factors model with 3 correlated factors for OBQ-9, 4 correlated factors for the OBQ-20, and second-order confirmatory factor model with the 3 and 4

Table 1. Descriptive Statistics, Factor Loadings, and Reliability Coefficients of the Turkish Version of the OBQ-20 and OBQ-9

Factor	Item	Factor Loading	M (SD)	Skewness	Kurtosis
OBQ-20					
TE ($\alpha = .79$)	2. If I'm not absolutely sure of something, I'm bound to make a mistake.	.40	3.30 (1.72)	.43	-.78
	22. If I do not take extra precautions, I am more likely than others to have or cause a serious disaster.	.51	2.30 (1.64)	1.19	.46
	29. I am more likely than other people to accidentally cause harm to myself or to others.	.53	2.41 (1.76)	1.22	.41
R ($\alpha = .80$)	34. Even when I am careful, I often think that bad things will happen.	.42	3.68 (1.89)	.12	-1.17
	36. Harmful events will happen unless I am very careful.	.38	3.13 (1.80)	.50	-.86
	6. Even if harm is very unlikely, I should try to prevent it at any cost.	.58	3.89 (1.94)	-.025	-1.20
	8. If I don't act when I foresee danger, then I am to blame for any consequences.	.62	3.95 (1.97)	-.071	-1.19
	15. In all kinds of daily situations, failing to prevent harm is just as bad as deliberately causing harm.	.64	2.79 (1.73)	.75	-.52
	17. For me, not preventing harm is as bad as causing harm.	.75	3.92 (1.91)	-.05	-1.18
	39. To me, failing to prevent a disaster is as bad as causing it.	.73	2.89 (1.76)	.73	-.56
ICT ($\alpha = .79$)	7. For me, having bad urges is as bad as actually carrying them out.	.68	3.09 (1.97)	.60	-.92
	21. Having nasty thoughts means I am a terrible person.	.70	1.95 (1.39)	1.70	2.38
	30. Having bad thoughts means I am weird or abnormal.	.71	2.25 (1.62)	1.30	.68
	35. Having intrusive thoughts means I'm out of control.	.63	2.53 (1.69)	1.19	.59
	42. Having a bad thought is morally no different than doing a bad deed	.65	2.40 (1.65)	1.14	.29
P ($\alpha = .78$)	4. In order to be a worthwhile person, I must be perfect at everything I do.	.74	3.63 (1.99)	.21	-1.23
	18. I should be upset if I make a mistake.	.57	4.43 (1.75)	-.36	-.83
	20. For me, things are not right if they are not perfect.	.77	3.50 (1.92)	.27	-1.18
	37. I must keep working at something until it's done exactly right.	.68	4.54 (1.76)	-.34	-.93
	43. No matter what I do, it won't be good enough.	.41	2.41 (1.83)	1.29	.48
OBQ-9					
P/IU ($\alpha = .75$)	9. If I can't do something perfectly, I shouldn't do it at all.	.81	3.36 (1.94)	.46	-.97
	14. I must be certain of my decisions.	.49	5.43 (1.48)	-1.09	.69
	20. For me, things are not right if they are not perfect.	.83	3.50 (1.92)	.27	-1.18
R/TE ($\alpha = .74$)	16. Avoiding serious problems (for example, illness or accidents) requires constant effort on my part.	.76	2.94 (1.76)	.65	-.74
	17. For me, not preventing harm is as bad as causing harm.	.58	3.92 (1.91)	-.05	-1.18
	36. Harmful events will happen unless I am very careful.	.47	3.13 (1.80)	.50	-.86
ICT ($\alpha = .70$)	30. Having bad thoughts means I am weird or abnormal.	.67	2.25 (1.62)	1.30	.68
	35. Having intrusive thoughts means I'm out of control.	.70	2.53 (1.69)	1.19	.59
	42. Having a bad thought is morally no different than doing a bad deed.	.64	2.40 (1.65)	1.14	.29

OBQ= Obsessive Belief Questionnaire, TE= threat estimation, R= responsibility, ICT= importance/control of thoughts, P= perfectionism, P/IU= perfectionism and intolerance of uncertainty, R/TE= responsibility and threat estimation, ICT= importance and control over thoughts, M= mean, SD = Standard deviation, α = Cronbach alpha coefficient.
 Note: Item numbers of new OBQ-20 and OBQ-9 are drawn from original OBQ-44 form to prevent any misunderstanding in the content and flow.

factors of the OBQ-20 and the OBQ-9 brought together under a single factor and total score. The Chi-square, the Root Mean Square Error of Approximation (RMSEA) and the Comparative Fit Index (CFI) were used as the three fit indexes to assess the results of the CFAs. Although Chi-square statistics is widely criticized for being used in large samples of confirmatory models and that such models do not demonstrate the Chi-square distribution, it is still one of the leading statistical approaches that must be reported with its degrees of freedom. Accordingly, the using ratio of chi-square

statistic to the degrees of freedom instead of the significance of chi-square as a model fit indicator is generally accepted. While ratios of 2.5 indicate good fit, results of up to 5 are reported as acceptable models.

The RMSEA value is also one of the most reported information criteria. Values less than 0.05 within the 90% confidence interval indicate good fit of the model. Although values between .08 and .05 are reported as acceptable fit indices, values up to 10 are also generally accepted (Thompson 2004). As shown in Table 2, correlated factor and second-order factor

Table 2. Confirmatory Factor Analysis Results of the Turkish Versions of the OBQ-20 and OBQ-9

Model	χ^2	df	RMSEA	CFI
OBQ-20				
Model-1, One-factor model	1448	170	.11 [.10, .11]	.92
Model-2, Non-correlated factors model	2629	170	.15 [.14, .15]	.82
Model-3, Correlated factors model	1286	164	.10 [.098, .11]	.92
Model-4, Second-order CFA model	1286	165	.10 [.098, .11]	.93
OBQ-9				
Model-1, One-factor model	284	27	.12 [.11, .13]	.91
Model-2, Non-correlated factors model	684	27	.19 [.18, .21]	.75
Model-3, Correlated factors model	184	24	.10 [.089, .12]	.94
Model-4, Second-order CFA model	180	25	.10 [.089, .12]	.94

OBQ= Obsessive Beliefs Questionnaire, Model 1= Single total score structure, Model 2= Non-correlated factors model with each other, Model 3= Model with factors correlating with each other, Model 4 = Model which different factors are grouped under one dimension as second level.

Table 3. The Relationships Between Turkish OBQ-20 and OBQ-9 and Other Variables in Two Study Samples.

		OBQ-20				OBQ-9	
		TE	R	ICT	P	P/IU	P
First Sample (N= 361)							
OCI	Total Score	.60**	.62**	.47**	.55**	.45**	.49**
SAM	Total Score	.58**	.63**	.44**	.56**	.39**	.44**
Second Sample (N = 645)							
PI-WSUR	Total Score	.37**	.36**	.38**	.37**	.29**	.39**
TAFS	Morality	.31**	.31**	.38**	.42**	.24**	.34**
	Likelihood	.05	.19**	.13**	.15**	.00	.11**

OBQ= Obsessive Belief Questionnaire, TE= threat estimation, R= responsibility, ICT= importance/control of thoughts, P= perfectionism, P/IU= perfectionism and intolerance of uncertainty, R/TE= responsibility and threat estimation, ICT= importance and control over thoughts, OCI= Obsessive Compulsive Inventory, SAM= Self-Ambivalence Measure, PI-WSUR= Padua Inventory- Washington State University Revision, TAFS= Thought-Action Fusion Scale.

Note: *p< .05 **p< .01.

models were found to have the best fit. When these results are considered together, the structural validity and reliability of the Turkish language versions of both the OBQ-20 and the OBQ-9 forms can be seen. The correlated factor and second-order factor models being the acceptable models indicate that both the OBQ-20 and the OBQ-9 can be used for evaluations on the bases of the total and subdimensional scores.

Correlations with Other Variables

Pearson correlation analyses were conducted in order to evaluate concurrent validity of the Turkish language versions of both the OBQ-20 and OBQ-9 using the level of OCD symptom severity and the variables closely related to OCD and the results are presented in Table 3. As expected, there are moderate or strong correlations between the OBQ dimensions and the severity of OCD symptoms. Furthermore, OBQ dimensions showed significant positive correlations with the dysfunctional beliefs on *ambivalence on self-worth*, personal *morality* and likelihood of harm and morality, known to be associated with OCD.

DISCUSSION

According to the cognitive model of OCD (Clark 2004, Salkovskis 1985), obsessions and compulsions are very closely associated with dysfunctional beliefs which lead to obsessions by underlying the biased misinterpretation of thoughts. Hence, examination of OCD-specific beliefs in both clinical and nonclinical samples has become prominent in fields of psychological assessment and interventional work as well as in scientific research. The OBQ, developed for cognitive evaluations in OCD by the international research group OCCWG in 1997, has been used for the cited purposes in different studies. According to the www.scholar.google.com, it has been cited over 800 times up to now since the first publication of its original 87-item version (OCCWG 2001), and having been revised as the 44-item (OCCWG 2003), the 20-item (Moulding et al. 2011) and lastly 9-item (Gagne et al. 2018) versions with adequate psychometric properties for use in scientific and clinical works. Even this very first study have 800 citations up to now (i.e., according to www.scholar.google.com) and first version of the OBQ was composed of 87 items; then, it was revised with 44 (OCCWG 2003), and

later 20 (Moulding et al. 2011). Finally, there is even 9-item OBQ (Gagne et al. 2018), and this version has been reported to have satisfactory psychometric properties and to be open for use in research and interventions. In the current study, it has been aimed to adapt the last two shortened versions to the Turkish language and to investigate its psychometric properties with respect to structural validity and reliability on two different participant populations. It is being targeted to provide the researchers and users in Turkey the facility of the shorter OBQ versions that can be used for different purposes with the practicality of time-saving, next to longer forms for in depth work, and enabling up-to-date contributions to the international literature.

Initially explanatory factor analyses, based on the original item distribution, were made on the Turkish language versions of the OBQ-20 and the OBQ-9. Results of the work on the Turkish version of the OBQ-20 demonstrated similarly to those of Moulding et al. (2011), having a 4-factor structure for the OBQ-20 consisting of threat perception, responsibility, emphasis on thought and its control and perfectionism, with satisfactory internal consistency values. Similarly, the results of explanatory factor analyses on the OBQ-9 in the Turkish demonstrated the presence of the subdimensions of perfectionism-uncertainty intolerance, responsibility-threat perception and emphasis on thoughts and control, as in the current study of Gagne et al. (2018), with acceptable reliability levels. Besides, descriptive statistics pointed out the similarities in the values obtained in our study and the original study. With a comparable approach to the study by Fergus et al. (2017) for testing the dimensions and the total scoring of the OBQ-20 on different models, this study analyzed the data of the second study on the Turkish language version of the OBQ-9 by confirmatory factor analyses using different models. Looking at the analysis results, it is seen that next to the 4 and 3-factor structures of, respectively, the OBQ-20 and the OBQ-9, a second-level single factor was present as also found out by Fergus et al. (2017), meaning that the subdimensions can be used separately according to research and application purposes, as well as the total score for evaluating the cognitive biases in the participants. These results demonstrate that the Turkish language formats of the OBQ-20 and the OBQ-9 are reliable tools with the required structural validity and support that both formats have concurrent validity in demonstrating significant positive correlations with the OCD symptom severity and the OCD-related prominent cognitive factors such as self-ambivalence and thought-action fusion. Observing strong correlation between the thought-action fusion in the morality dimension and the dysfunctional beliefs are consistent with the results of previous similar studies using the OBQ in this country (e.g., Boysan et al. 2010, Yorulmaz and Gençöz 2008) and the reports on the more disturbing nature of the confounders

in the morality dimension and their close relationship with OCD (e.g., Yorulmaz et al. 2004, Yorulmaz et al. 2008).

In conclusion, this study has shown that the Turkish language versions of the OBQ-20 and OBQ-9, both used in the literature extensively on clinical and non-clinical populations for evaluating obsessive beliefs, are valid and reliable tools for applications in our country. By using these two shortened psychometric tools focusing on cognitive biases that contribute to misinterpretation of involuntary experiences and allowing in depth analyses comparably to their longer versions will provide practical results to the researchers and users, and facilitate the decision on the fields to concentrate on. It can also be assumed that these tools would benefit the individuals with undetected cognitive factors with the potential to contribute to development of psychiatric problems, enabling early diagnosis and intervention. Therefore, the results of the current study are even significant in providing the facility of implementing a recent scientific measure in the Turkish language and the possibility of following and contributing to the international literature. Given the increasing empirical studies on the use of the OBQ-20, our work can be considered to be the first in using the OBQ-9 on a non-Western population and with respect to its satisfactory psychometric features. On the other hand, the most important limitation of our study is having used participants without any diagnostic evaluation, although individuals without clinical diagnoses can take place in OCD studies and it is possible to see many such studies (e.g., Abramowitz et al. 2014, Fergus and Carmin 2014). Therefore, the results of this study require checking by further controlled studies with the OBQ in comparing OCD diagnosed individuals with others diagnosed with different psychiatric disorders. These two OBQ versions can also make significant contribution to the literature in our country by being used not for modeling test and evaluations only, but on the sensitivity to behavioural changes after different interventions, and especially following psychotherapy, as in the study by Gagne et al. (2018).

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