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Further Support for Responsibility in Different Obsessive-Compulsive Symptoms in Turkish Adolescents and Young Adults

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Abstract. According to the cognitive model, an inflated sense of responsibility is an important cognitive mediator both in the development and maintenance of obsessive-compulsive disorder (OCD). Empirical findings assign differential roles to responsibility in different kinds of obsessive-compulsive (OC) symptoms. However, findings that suggested a different function for responsibility revealed the need for an operational definition of responsibility and its multifactorial structure. Few studies have examined the role of responsibility in OC symptoms in adolescents. The present study therefore aimed to explore responsibility concerns and to evaluate the relationship between responsibility dimensions and obsessive-compulsive symptom subgroups in two samples of adolescents and university students in a developing non-Western country. The findings suggested that the Responsibility Attitude Scale had a bifactorial structure, responsibility being based on self-dangerousness and prevention. Adolescents reported more responsibility in prevention and self-dangerousness than university students. The results appear to contribute to the symptom differentiation of OC behaviour by highlighting the importance of both dimensions of responsibility for checking symptoms, responsibility based on danger prevention for cleaning and, finally, responsibility based on self-dangerousness for obsessive thinking. Replication with clinical samples and different methodologies are encouraged.

Keywords: Responsibility, checking, cleaning, obsessive-compulsive symptoms, adolescents.

Introduction

The cognitive model of Obsessive-Compulsive Disorder (OCD), presented by Salkovskis (1985, 1989, 1999), covers both the development and the maintenance of the disorder, in which an inflated sense of responsibility plays an important role as a cognitive mediator. According to this model, dysfunctional responsibility schemata lead to the misinterpretation of the intrusive thoughts that occurs with the focus on the fear of causing harm to self/others

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and inflated personal responsibility. Interest in this cognitive mediator has increased over the past two decades as findings from surveys, experimental and treatment efficacy studies have supported the model (e.g. Foa, Sacks, Tolin, Preworski and Amir, 2002; Lopatka and Rachman, 1995; Shafran, 1997; Van Oppen and Arntz, 1994). Several studies also assigned an important role for exaggerated or inflated responsibility for the events beyond the control of the individual among the prominent faulty belief domains in OCD (Obsessive-Compulsive Cognitions Working Group [OCCWG], 1997; Steketee, Frost and Cohen, 1998). In addition, responsibility appraisals oriented to harm are supposed to be specific to OCD (Salkovskis, 1989, 1999), which differ from depression with ruminations about future catastrophic events, and from other anxiety disorders (Van Oppen and Arntz, 1994).

On the other hand, there are some studies that note either weak or no association between responsibility and OCD (e.g. Emmelkamp and Aaardema, 1999; Frost, Steketee, Cohn and Griess, 1994; Freeston, Ladouceur, Thibodeau and Gagnon, 1992; Rachman, Thodarson, Shafran and Woody, 1995); thus, the discrepancy between the findings was assumed to be due to the differences in the definition of responsibility and/or in the measurement methods (Mancini, D'Olimpio and D'Ercole, 2001). Rachman et al. (1995) suggested that the manifestation of responsibility in OCD might be situation-specific, and the situation specificity of responsibility is activated more when the person views himself as mainly responsible for the hazardous/harmful event. They also suggested that the measurement of this construct requires multi-factorial assessment rather than the use of an unitary structure.

Salkovskis et al. (2000) emphasized the role of inflated sense of responsibility, defining it as the belief that one has a pivotal role for causing or preventing subjectively crucial negative outcomes, which might have results in real world and/or at moral level. This definition points to two primarily cognitive distortions, which are pivotal influence and the potential negative influences. Among these distortions, the pivotal influence (i.e. the main responsible agent for the harmful event) was found to be a better predictor of perceived responsibility than potential negative influences (i.e. probability and severity of the event) (Ladouceur, Rheaume and Aublet, 1997; Rheaume, Ladouceur, Freeston and Letarte, 1995). The latter distortion was assumed to be under the general anxious threat schema, which was a necessary but not a sufficient condition for OCD (Rheaume et al., 1995). Along with the operational definition of responsibility, Salkovskis et al. (2000) designed the Responsibility Attitude Scale (RAS) to assess attitudes, beliefs and vulnerability characteristics of the present belief domain and harm concerns in OCD, and found that the patients with OCD had significantly higher scores in RAS than anxious and non-clinical controls.

Despite being accepted as a unitary diagnostic category (DSM-IV; APA, 1994), OCD also includes diversity, with subgroups having different symptom clusters such as checking and cleaning (McKay et al., 2004). This subgroup differentiation may be linked to the inflated sense of responsibility as a cognitive mediator. For instance, Rachman (2002) stated that even though personal responsibility plays an important role for both subgroups, the focus of responsibility for the protection of others from harm is mainly focused in checking, whereas self-focused responsibility is more pronounced in cleaning. Empirical findings suggest that inflated responsibility has a more influential and prominent role in checking than cleaning (e.g. Foa et al., 2002; Lopatka and Rachman, 1995; Rachman, 1998; Rheaume, et al., 1995; Yorulmaz, Karancı and Tekok-Kılıç, 2006). Similarly, the dimensionality of responsibility also appears to operate differently in symptom subgroups such as checking and cleaning. In addition to identifying the salient role of responsibility in checking, Mancini et al. (2001) found that

responsibility focusing on the belief of possessing harmful power (i.e. self-granted power for harm) is associated more with checking symptoms, but prevention-based responsibility (i.e. prevention) is more pronounced for cleaning symptoms. On the other hand, Smari, Glyfadottir and Halldorsdottir (2003) reported a stronger association between responsibility attitudes and obsessional thoughts about harm than for checking.

In line with the a continuum between normal intrusive thoughts and clinical obsessions as suggested by cognitive explanations (e.g. Clark and Purdon, 1995; Rachman, 1997, 1998; Salkovskis, 1999), the inclusion of non-clinical samples (i.e. university students, community groups) as well as clinical groups (i.e. patients with OCD) in the relevant studies seems acceptable in the current literature (Burns, Formea, Keortge and Sternberger, 1995). The studies that examined the role of responsibility in OCD in nonclinical subjects seem to use in the main undergraduate university students from Western cultures.

OCD and OC phenomena could also be seen in adolescence (Rasmussen and Tsuang, 1986; Mancini, Gragnani, Orazi and Pietrangeli, 1999). OC phenomena in adolescence is fairly similar in prevalence and symptomatology to the adult version (e.g. Flament et al., 1988; Libby, Reynolds, Derisley and Clark, 2004; Rasmussen and Eisen, 1990). Retrospective studies with adult OCD patients also showed that 30–50% reported the onset of their disorder during adolescence (Mancini et al., 1999; Rasmussen and Eisen, 1990). However, this age group is generally underrepresented in the evaluation of current cognitive theories of OCD.

The investigation of prevalence of OCD in childhood and adolescence (e.g. Flament et al., 1988; Libby et al., 2004) led some researchers to question whether the current cognitive models of OCD, which were originally developed to explain the development, maintenance and therapy of the disorder in adults (e.g., Salkovskis, 1999), is also valid for explaining the development and persistence of OCD amongst adolescents. However, only a few studies reported partially theoretical (Barrett and Healy, 2003; Libby et al., 2004; Mather and Cartwright-Hatton, 2004; Matthews, Reynolds and Derisley, 2007; Turner, 2006) and therapeutic (Shafran and Somers, 1998) consistencies for adolescents, mainly from Western countries.

Despite some epidemiological and phenomenological similarities in OCD in different cultures (Weismann et al., 1994), the impact of sociocultural factors in the clinical manifestation of OCD is still under investigation (e.g. Fontenelle, Mendlowicz, Marques and Versiani, 2004; Sica, Novara and Sanavio, 2002). For instance, Ghassemzadeh, Bolhari, Birashk and Salavati (2005) supported the role of responsibility in OCD in a non-Western country. Nevertheless, situated between Europe and Asia, Turkey is a developing secular-Islamic country and thus might have a different and unique pattern of socio-cultural factors. More research is needed in order to get a better view of the role of the responsibility concept in this type of context. The findings of such research will provide support for the international applicability and generalizability of the cognitive model. Furthermore, the inclusion of an adolescent sample in examining the association of responsibility with OC phenomena as well as university students will contribute to the exploration of the impact of responsibility in a sample not previously examined. Consequently, the present paper firstly aims to examine further the nature of responsibility attitudes and psychometric properties of RAS (Salkovskis et al., 2000) in Turkish samples. Second, it aims to investigate the relationship between different domains of responsibility and OC symptom subgroups, and to explore the specific roles of responsibility dimensions in different symptom clusters of OCD in adolescents and young adults in Turkey.

Method

Samples

The present study had two separate age samples. The sample of young adults was composed of 378 undergraduate university students (230 females and 148 males with a mean age of 20.3 years; $SD = 1.66$; range: 18–29) from various departments of Uludağ University, located in Bursa. The adolescent sample consisted of 380 senior high school students from a high school, located in Ankara (230 females and 150 males with a mean age of 17.23 years; $SD = 0.68$; range 16–20).

Instruments

Responsibility Attitudes Scale (RAS). RAS is a 26-item, 7-point Likert-type scale (ranging from totally agree to totally disagree) designed by Salkovskis and his colleagues (2000) to assess attitudes and beliefs about responsibility and harm concerns in OCD. The original scale had satisfactory reliability and validity. The Turkish version of the RAS also had satisfactory reliability and validity for a sample of non-clinical adolescents (Altın, Yorulmaz and Karancı, 2004) and university students (Yorulmaz, Karancı and Tekkok-Kılıç, 2002; Yorulmaz et al., 2006).With regard to factor structure, Mancini et al. (2001) found that RAS ($\alpha = 0.90$) had a 4-factor structure composed of prevention ($\alpha = 0.87$), feeling dangerous ($\alpha = 0.71$), self-granted power ($\alpha = 0.69$) and though-action fusion ($\alpha = 0.76$).

Maudsley Obsessive-Compulsive Inventory (MOCI). MOCI (Rachman and Hodgson, 1980) is a self-report measure of obsessive-compulsive symptoms. The scale consists of 30 true-false items about various obsessive-compulsive symptoms including checking, cleaning, slowness, and doubting. The total score can range from 0 to 30, with higher scores indicating higher levels of obsessive-compulsive symptoms. The Turkish adaptation of the MOCI (Erol and Savaşır, 1988) revealed a 3-subscale structure: cleanliness/meticulousness, checking/slowness and obsessive thinking with good reliability. Several studies have confirmed the psychometric properties of the Turkish version (e.g. Yorulmaz, Yılmaz and Gençöz, 2004; Yorulmaz et al., 2006). In the present study, this factor structure of the MOCI was again confirmed ($\alpha = 0.67$, $\alpha = 0.74$ and $\alpha = 0.73$ respectively) and used in further analyses.

Beck Depression Inventory (BDI). Developed in 1961 and revised in 1978 by Beck, Steer and Garbin (1988), BDI is a well known and widely used 21-item self-report measure assessing emotional, somatic, cognitive and motivational symptoms of depression, as well as pointing to the level or severity of depression. The Turkish adaptation of BDI (Hisli, 1989) has satisfactory reliability and validity.

State-Trait Anxiety Inventory (STAI). STAI is a 4-point Likert-type self-report scale of anxiety designed to evaluate the level of state and trait anxiety. Each part consists of 20 items (Spielberger, Gorsuch and Lushene, 1970). Like the original STAI, the Turkish adaptation of the scale has satisfactory reliability and validity (Öner and Le Compte, 1985). In the present study, the effect of trait anxiety was considered to be more relevant for responsibility because of its pervasive nature and the nature of the current study (i.e. survey); accordingly, in order to control for the effect of anxiety, only the trait anxiety inventory was administered.

Procedure

A questionnaire booklet including all the instruments was administered to the participants during class hours; participation was voluntary, and informed consent was signed by the subjects. Among the instruments, randomization was performed to eliminate any possible order effects.

Results

Factor structure and stability

In the present study, the Cronbach alpha coefficients of the original RAS factor structure (Mancini et al., 2001) were lower (i.e. ranging from 0.85 to 0.56), and the study aimed to examine the factor structure of the RAS in Turkey, which has a different pattern of socio-cultural values from Italy, where the factor structure was previously examined (Mancini et al., 2001). A new explanatory factor analysis was executed with Principle Component Analysis (PCA) as the extraction method and Varimax rotation for separate samples. In contrast to Mancini et al. (2001), examination of the scree plot of data from the two samples yielded a two-factor solution, and this solution accounted for 37% of the variance for the university sample and 29 % of the variance for the adolescent sample. The first factor was labelled as responsibility based on danger prevention and explained 24% of the variance ($\alpha = 0.88$) for university sample and 18% of the variance ($\alpha = 0.82$) for the adolescent sample. Items constituting danger prevention (e.g. even if harm is not a likely possibility, I should always try to prevent it at any cost; if I can have a slight influence on things going wrong, then I must act to prevent it; for me even slight carelessness is inexcusable when it might affect other people) tap personal responsibility driven by the notion of prevention of possible dangerous outcomes in general, regardless of time domain. Based on the work of Mancini et al. (2001), the second factor was labelled as self-dangerousness, with 11% of the variance for the adolescent sample ($\alpha = 0.67$) and 13% of the variance for the university sample ($\alpha = 0.74$). Items under this factor (e.g. I am often close to causing harm; everything I do can cause serious problems; I'm too sensitive to be self responsible for things going wrong) points to the individual dangerousness potential. Therefore, item distributions under these two factors seem to have similar patterns in the two samples. Even though explained variance of these two factors seems to be relatively lower for the adolescent sample, item loadings and item distributions in respective factors, and the reliability values led us to continue with this bifactorial structure in the present analyses.

Factorial congruence between two different samples on the RAS was further examined through the target rotation method with proportionality agreement coefficient (Tucker phi). Van de Vijver and Leung (1997) suggested using this method to assess factorial stability among different samples, with a cut-off score of .90. The analysis of target rotation revealed that the factor structure in the two samples were highly overlapping (Tucker phi = 0.97 and 0.93 respectively), which provides further support for the factorial stability of the RAS.

Responsibility factors in adolescents and young adults

T-test analysis of the sample differences indicated that the adolescent/high school sample scored higher on the total RAS, MOCI and BDI than the university sample; but the reverse was seen for trait anxiety. One-way multivariate analysis of variance (MANOVA) with

Table 1. Mean scores and standard deviations of different groups for main measures

	Adolescents		Young adults		
Measures	M	*SD*	M	*SD*	Significance
RAS-danger prevention	5.09	0.60	4.79	0.60	$F\,(1, 672) = 13.55^{**}$
RAS-self-dangerousness	3.50	0.60	2.98	0.60	$F\,(1, 672) = 36.96^{**}$
RAS-total	4.47	0.83	4.16	1.01	$t\,(707) = -4.53^{**}$
MOCI total	17	5.45	13	5.89	$t\,(717) = -9.14^{**}$
BDI	16	8.19	10	6.16	$t\,(711) = -10.38^{**}$
TAI	2.35	0.42	2.42	0.26	$t\,(723) = 2.46^{*}$

$^{*}p < .05$, $^{**}p < .001$.
RAS = Responsibility Attitudes Scale; MOCI = Maudsley Obsessive-Compulsive Inventory; BDI = Beck Depression Inventory; TAI = Trait Anxiety Inventory.

sample groups (adolescents vs. young adults) as a between-group factor was performed on responsibility based on prevention and self-dangerousness. The analysis revealed group differences (Wilks $\lambda = 0.95$, $F\ (2,\ 669) = 19.43$, $p < .001$, $\acute{\eta}^2 = 0.06$). Follow up F-tests revealed significant sample differences on prevention ($F\,(1, 672) = 13.55, p < .001, \acute{\eta}^2 = 0.02$) and self-dangerousness responsibility ($F\ (1,\ 672) = 36.96$, $p < .001$, $\acute{\eta}^2 = 0.05$). Pair wise comparisons executed with LSD showed that adolescents expressed more responsibility based on prevention and self-dangerousness than university students. Table 1 presents group differences in the main measures.

Responsibility in different symptom subgroups

Separate multiple regression analyses were performed in order to examine the impact of factors of responsibility on the OC phenomena in general, and on each of OC symptom clusters with the stepwise equation. In all of these regression analyses, two samples were pooled and group membership was entered as a dummy variable to indicate high school vs. university samples. It was included among the control variables together with gender, the scores of depression and trait anxiety. The results of the regression analyses are given in Table 2. In predicting total MOCI scores, all the control variables, except gender, were found to be significantly and positively associated with OC phenomena. In other words, high school students tended to be more obsessional; similarly, trait anxiety and depression were found to be positively associated with the total MOCI scores. Moreover, the responsibility based on both danger prevention and self-dangerousness was a moderate significant predictor of the OC phenomena in general. For obsessive thinking, the significant relationship patterns of the control variables were the same as with the total MOCI. More importantly, responsibility based on self-dangerousness was the only factor found to be associated with obsessive thinking. On the other hand, both responsibility factors significantly contributed to the prediction of checking symptoms. A similar pattern for the control variables of anxiety and depression was observed for checking symptoms; but it was also found that males tend to exhibit more checking. However, it was only responsibility focusing on the prevention of danger that was seen as a significant predictor

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Table 2. The results of multiple regression analyses[1]

Variables	β	T	(df) F	R^2	Pr.
		Total MOCI			
Prevention	.33	10.61*	(1, 589) 112.66*	.11	.40
Self-dangerousness	.21	5.65*	(1, 588) 31.96*	.03	.23
		Obsessive thinking symptoms			
Self-dangerousness	.29	8.94*	(1, 600) 72.09*	.06	.33
		Checking symptoms			
Self-dangerousness	.28	6.70*	(1, 595) 44.94*	.06	.27
Prevention	.15	3.82*	(1, 594) 14.76*	.08	.16
		Cleaning symptoms			
Prevention	.39	10.64*	(1, 598) 113.24*	.14	.40

*$p < .001$. MOCI= Maudsley Obsessive-Compulsive Inventory.

of cleaning symptoms. Moreover, among the control variables, just being at high school, being female and high trait anxiety were significant in relation to cleaning symptoms.

Discussion

The main aim of the study was to examine the function of responsibility in OC phenomena and its symptom clusters in different age samples in a developing country, by using an attitude scale assessing responsibility beliefs. The overall findings of the study provided further evidence for Salkovskis' cognitive model (1989, 1999), which stresses the core role of responsibility in OC symptomatology.

Taking the operational definition of responsibility as the belief of possessing a pivotal role to bring about or prevent a possible harmful outcome, Salkovskis et al. (2000) developed the RAS to assess attitudes of responsibility and harm concerns in OCD. In order to evaluate this instrument in a different culture, the factorial structure of the RAS was examined. Contrary to the findings of Mancini et al. (2001), our results indicated that this scale had two factors, namely responsibility based on danger prevention and responsibility based on the self-dangerousness. Furthermore, it was also observed that this factor structure was consistent across two different age samples from Turkey. The danger prevention factor focuses on the importance and necessity of *prevention* of any harmful outcome and, thus, the relief from personal responsibility if appropriate actions are taken. By contrast, the self-dangerousness factor consists of attitudes oriented to the belief of possessing potential power for *causing* harm and of self-blame for the person's role in such harm. It seems that there is a strong emphasis on the pivotal role (Ladouceur et al., 1997; Rheaume et al., 1995) in both factors, and the difference between them lies in the relative impact of this role on the outcomes. Responsibility based on danger prevention focuses on preventing an undesirable outcome, whereas

[1]For ease of understanding, values for the control variables are excluded. Each value is taken from the represented steps.

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self-dangerousness is more associated with fears about bringing about this outcome. In addition to the group comparison that revealed significant differences in responsibility and its factors, these findings also contribute to the validity base of the RAS (Salkovskis et al., 2000).

Senior high school students reported more OC symptoms, and they feel more self-dangerous and express more responsibility in prevention of danger than university students. When their scores for responsibility attitudes in total are taken into account (Table 3), it is seen that they are different and higher from non-clinical young adults from both host and other countries (i.e. Iceland; Smari et al., 2003, and UK; Libby et al., 2004; Mather and Cartwright-Hatton, 2004; Matthews et al., 2007; Salkovskis et al., 2000). This situation might have resulted from the period of transition from high school to university, which also coincides with late adolescence to early adulthood, and it has been found to be associated with psychological and emotional problems as well as behavioural ones (Compas, Howell, Phares, Williams and Guinta, 1989). There is another critical factor accounting for such a difference. In Turkey, senior high school students confront a major stressful life event/challenge, which is the university entrance exam (Koçkar and Gençöz, 2004). They prepare for this exam, which is held nationwide once a year, and in which there are many applicants for a very limited quota; thus, by studying for this challenging exam, they experience a very stressful year. In order to alleviate this stress, the Turkish government recently changed the educational system and begun in 2005 to administer a 4-year high school education program throughout the country. Stressful life events have already been found to play a role in the activation of dysfunctional responsibility schema in the cognitive model (Salkovskis, 1989, 1999). Similarly, it was reported that initial symptoms were often triggered by stressful life events that more probably result in a substantial increase in responsibility, such as the birth of a child, promotion to a new job, significant losses such as death of family members and loss of a job (McKeon, Roa and Mann, 1984; Neziroglu, Anemone and Yaryura-Tobias, 1992; Rasmussen and Eisen, 1990; Rasmussen and Tsuang, 1986). The findings of the present study are also consistent with the knowledge of the influence of stress in increasing the incidence of unwanted thoughts (Albert, Maina and Bogetto, 2000; Maina, Albert, Bogetto, Vashetto and Ravizza, 1999; Rachman, 1997; Rasmussen and Tsuang, 1986, McKeon et al., 1984). The stressful life event might also account for the differences between the two groups in depression and anxiety scores. The university entrance exam might also be a factor that increases depressive feelings in adolescents, as well as state anxiety levels (Koçkar and Gençöz, 2004). On the other hand, trait anxiety might be more salient after such stressful life events and during young adulthood.

The present study also suggests OC symptom differentiation by assigning different roles for different types of responsibility in checking, cleaning and obsessive thinking. It was found that both responsibility factors were influential in checking; in other words, it seems that people who had high scores in checking emphasize both types of responsibility that may be caused by themselves (i.e. self-dangerousness) and by the power for danger prevention. This information supports the importance of the role of responsibility in checking (e.g. Foa et al., 2002; Rachman, 2002). On the other hand, responsibility was found also to be important in cleaning symptoms (Cougle, Lee and Salkovskis, 2007), but only in the form of danger prevention. Instead of self-dangerous responsibility, people might view danger from outside and try to prevent harm and thus control this undesirable outcome in cleaning. As for obsessive thinking, it was found that responsibility based on self-dangerousness had a more salient role. Accordingly, the inflated sense of responsibility, whether driven by danger prevention concern and/or self-focused prevention, is influential in all symptom clusters. However, responsibility seems to

Table 3. Means and standard deviations of Responsibility Attitudes Scale (RAS) from selected studies

	Turkey	Iceland	UK	UK	Turkey	UK	UK
	The current study (non-clinical/ young adult)	Smari et al. (2003) (non-clinical/ young adult)	Salkovskis et al. (2000) (non-clinical/ young adult)	Salkovskis et al. (2000) (OCD patients)	The current study (non-clinical/ adolescent)	Libby et al. (2004) (non-clinical/ adolescent)	Libby et al. (2004) (Adolescent-OCD patients)
	M (*SD*)	M (*SD*)	M (*SD*)	M (*SD*)	M (SD)	M (SD)	M (SD)
RAS	4.16 (1.01)	3.85 (0.75)	3.48 (1.01)	4.69 (1.01)	4.47 (0.83)	3.57 (0.94)	4.75 (1.25)

function differently for different subtypes (Cougle et al., 2007; Rachman, 2002; Mancini et al., 2001).

In summary, the findings suggest that there seems to be consistency in responsibility concerns among different cultures (Ghassamzadeh et al., 2005; Libby et al., 2004; Mather and Cartwright-Hatton, 2004; Matthews et al., 2007; Salkovskis et al., 2000; Smari et al., 2003), as responsibility attitudes of young adults from a non-Western country, Turkey, appear similar in range to the young adult samples from elsewhere (Table 3). In supporting factorial congruence and stability of the RAS, the current study highlights the role of responsibility in OC phenomena, and presents further evidence for the impact of this construct in adolescents and young adults. Furthermore, these findings contribute to the knowledge on the OC symptom cluster differentiation from a non-Western country; thus, this elicits theoretical consistency in OC symptomatology in the international context by means of such an important cognitive mediator. A limitation of the study is the participation of non-clinical samples that do not match/have a psychiatric diagnosis, although OC symptom scores on MOCI of the adolescent samples seem to be within the clinical range (>14) (Rachman et al., 1995), and their scores of responsibility attitudes are as high as the adolescents with OCD in UK (Libby et al., 2004). Nevertheless, the replication of the present study with clinically diagnosed OCD patients is strongly encouraged.

References

Albert, U., Maina, G. and Bogetto, F. (2000). Obsessive-compulsive disorder and triggering life events. *European Journal of Psychiatry, 14*, 180–188.

Altın, M., Yorulmaz, O. and Karancı, A. N. (2004). *Inflated Responsibility and Obsessive-Compulsive Symptomatology in Different Samples*. Presentation in the XIII. National Psychology Congress, Ankara/Turkey.

American Psychiatric Association (1994). *Diagnostic and Statistical Manual of Mental Disorders* (4th ed.). Washington, DC: APA.

Barrett, P. and Healy, L. (2003). An examination of the cognitive processes involved in childhood obsessive–compulsive disorder. *Behaviour Research and Therapy, 41*, 285–299.

Beck, A. T., Steer, B. F. and Garbin, M. G. (1988). Psychometric properties of the Beck Depression Inventory: twenty-five years of evaluation. *Clinical Psychology Review, 8*, 77–100.

Burns, G. L., Formea, G. M., Keortge, S. and Sternberger, L. G. (1995). The utilization of nonpatient samples in the study of obsessive-compulsive disorder. *Behaviour Research and Therapy, 33*, 133–144.

Clark, D. A. and Purdon, C. L. (1995). The assessment of unwanted intrusive thoughts: a review and critique of the literature. *Behaviour Research and Therapy, 33*, 967–976.

Compas, B. E., Howell, P. C., Phares, V., Williams, R. A. and Guinta, C. T. (1989). Risk factors for emotional/behavioral problems in young adolescents: a prospective analysis of adolescent and parental stress and symptoms. *Journal of Consulting and Clinical Psychology, 57*, 732–740.

Cougle, J. R., Lee, H. J. and Salkovskis, P. (2007). Are responsibility beliefs inflated in non-checking OCD patients? *Journal of Anxiety Disorders, 21*, 153–159.

Emmelkamp, P. M. G. and Aaardema, A. (1999). Metacognition, specific obsessive-compulsive beliefs and obsessive-compulsive behavior. *Clinical Psychology and Psychotherapy, 6*, 139–145.

Erol, N. and Savaşır, I. (1988). *Maudsley Obsesif Kompulsif Soru Listesi'nin Türkiye uyarlaması. (Adaptation of Maudsley Obsessive-Compulsive Inventory into Turkish)*. CIBA-GEIGY Yayınları, İstanbul.

Flament, M. F., Whitaker, A., Rapoport, J. L., Davies, M., Berg, C. Z., Kalikow, K., Sceery, W. and Schaffer, D. (1988). Obsessive compulsive disorder in adolescence: an epidemiological study. *Journal of the American Academy of Child and Adolescence Psychiatry, 27*, 764–771.

Foa, E. B., Sacks, M. B., Tolin, D. F., Preworski, A. and Amir, N. (2002). Inflated perception of responsibility for harm in OCD patients with and without checking compulsions: a replication and extension. *Journal of Anxiety Disorders*, *16*, 443–453.

Fontenelle, L. F., Mendlowicz, M. V., Marques, C. and Versiani, M. (2004). Trans-cultural aspects of obsessive-compulsive disorder: a description of a Brazilian sample and a systematic review of international clinical studies. *Journal of Psychiatric Research, 38*, 403–411.

Freeston, M. H., Ladouceur, R., Thibodeau, N. and Gagnon, F. (1992). Cognitive intrusions in a non-clinical population. II. Associations with depressive, anxious and compulsive symptoms. *Behaviour Research and Therapy, 30*, 263–271.

Frost, R. O., Steketee, G., Cohn, L. and Griess, K. (1994). Personality traits in subclinical and non-obsessive-compulsive volunteers and their parents. *Behaviour Research and Therapy, 32*, 47–56.

Ghassemzadeh, H., Bolhari, J., Birashk, B. and Salavati, M. (2005). Responsibility attitude in a sample of Iranian obsessive-compulsive patients. *International Journal of Social Psychiatry, 51*, 13–22.

Hisli, N. (1989). Beck Depresyon Envanteri'nin üniversite öğrencileri için geçerliliği, güvenilirliği [Reliability and validity of Beck Depression Inventory for university students]. *Türk Psikoloji Dergisi [Turkish Journal of Psychology], 23*, 3–13.

Koçkar, A. I. and Gençöz, T. (2004). Personality, social support, and anxiety among adolescents preparing for university entrance examinations in Turkey. *Current Psychology: Development, Learning, Personality, Social, 23*, 138–146.

Ladouceur, R., Rheaume, J. and Aublet, F. (1997). Excessive responsibility in obsessional concerns: a fine-grained experimental analysis. *Behaviour Research and Therapy, 35*, 423–427.

Libby, S., Reynolds, S., Derisley, J. and Clark, S. (2004). Cognitive appraisals in young people with obsessive-compulsive disorder. *Journal of Child Psychology and Psychiatry, 45*, 1076–1084.

Lopatka, C. and Rachman, S. (1995). Perceived responsibility and compulsive checking: an experimental analysis. *Behaviour Research and Therapy*, *33*, 673–684.

Maina, G., Albert, U., Bogetto, F., Vashetto, P. and Ravizza, L. (1999). Recent life events and obsessive-compulsive disorder: the role of pregnancy/delivery. *Psychiatry Research, 89*, 49–58.

Mancini, F., Gragnani, A., Orazi, F. and Pietrangeli, M. G. (1999). Obsessions and compulsions: normative data on the Padua Inventory from an Italian non-clinical adolescent sample. *Behaviour Research and Therapy, 37 (10)*, 919–925.

Mancini, F., D'Olimpio, F. and D'Ercole, S. (2001). Responsibility attitudes, obsession and compulsion: further support in a non-clinical sample. *Clinical Psychology and Psychotherapy, 8*, 274–281.

Mather, A. and Cartwright-Hatton, S. (2004). Cognitive predictors of obsessive-compulsive symptoms in adolescence: a preliminary investigation. *Journal of Clinical Child and Adolescent Psychology, 33*, 743–749.

Matthews, L., Reynolds, S. and Dersley, J. (2007). Examining cognitive models of obsessive-compulsive disorder in adolescents. *Behavioural and Cognitive Psychotherapy, 37*, 149–163.

McKay, D., Abramowitz, J. S., Calamari, J. E., Kyrios, M., Radomsky, A., Sookman, D., Taylor, S. and Wilhelm, S. (2004). A critical evaluation of obsessive-compulsive disorder subtypes: symptoms versus mechanisms. *Clinical Psychology Review, 24*, 283–313.

McKeon, J., Roa, B. and Mann, A. (1984). Life events and personality traits in obsessive-compulsive neurosis. *British Journal of Psychiatry, 144*, 185–189.

Neziroglu, F., Anemone, R. and Yaryura-Tobias, J. A. (1992). Onset of obsessive-compulsive disorder in pregnancy. *American Journal of Psychiatry, 149*, 947–950.

Obsessive-Compulsive Cognitions Working Group (1997). Cognitive assessment of obsessive-compulsive disorder. *Behaviour Research and Therapy, 35*, 667–681.

Öner, N. and Le Comte, A. (1985). *Durumluluk-Süreklilik Kaygı Envanteri elkiatbı. (Turkish Manual of State-Trait Anxiety Inventory)*. İstanbul: B.Ü. Yayınları.

Rachman, S. (1997). A cognitive theory of obsessions. *Behaviour Research and Therapy, 35*, 793–802.

Rachman, S. (1998). A cognitive theory of obsessions: elaborations. *Behaviour Research and Therapy, 36*, 385–401.

Rachman, S. (2002). A cognitive theory of compulsive checking. *Behaviour Research and Therapy, 40*, 625–639.

Rachman, S. and Hodgson, R. J. (1980). *Obsessions and Compulsions*. Englewood Cliffs, NJ: Prentice Hall.

Rachman, S., Thordarson, D. S., Shafran, R. and Woody, S. R. (1995). Perceived responsibility: structure and significance. *Behaviour Research and Therapy, 33*, 779–784.

Rasmussen, S. A. and Eisen, J. L. (1990). Epidemiology of obsessive compulsive disorder. *Journal of Clinical Psychiatry, 51*, 10–13.

Rasmussen, S. A. and Tsuang, M. (1986). Clinical characteristics and family history in DSM-III obsessive-compulsive disorder. *American Journal of Psychiatry, 143*, 317–322.

Rheaume, J., Ladouceur, R., Freeston, M. H. and Letarte, H. (1995). Inflated responsibility in obsessive-compulsive disorder: validation of an operational definition. *Behaviour Research and Therapy, 35*, 159–169.

Salkovskis, P. M. (1985). Obsessional-compulsive problems: a cognitive behavioural analysis. *Behaviour Research and Therapy, 23*, 571–583.

Salkovskis, P. M. (1989). Cognitive-behavioral factors and the persistence of intrusive thoughts in obsessional problems. *Behaviour Research and Therapy, 27*, 677–682.

Salkovskis, P. M. (1999). Understanding and treating obsessive-compulsive disorder. *Behaviour Research and Therapy, 37*, Supp. 1, 29–52.

Salkovskis, P. M., Wroe, A. L., Gledhill, A., Morrison, N., Forrester, E., Richards, C., Reynolds, M. and Thorpe, S. (2000). Responsibility attitudes and interpretations are characteristic of obsessive-compulsive disorder. *Behaviour Research and Therapy, 38*, 347–372.

Shafran, R. (1997). The manipulation of responsibility in obsessive-compulsive disorder. *Journal of Clinical Psychology, 36*, 397–407.

Shafran, R. and Somers, J. (1998). Treating adolescent obsessive-compulsive disorder: applications of cognitive theory. *Behaviour Research and Therapy, 36*, 93–97.

Sica, C., Novara, C. and Sanavio, E. (2002). Religiousness and obsessive-compulsive cognitions and symptoms in an Italian population. *Behaviour Research and Therapy, 40*, 813–823.

Smari, J., Glyfadottir, T. and Halldorsdottir, G. L. (2003). Responsibility attitudes and different types of obsessive-compulsive symptoms in a student population. *Behavioural and Cognitive Psychotherapy, 31*, 45–51.

Spielberger, C. D., Gorsuch, R. L. and Lushene, R. E. (1970). *Manual for State-Trait Anxiety Inventory*. California: Con Psychologist Press.

Stekeete, G., Frost, R. O. and Cohen, I. (1998). Beliefs in obsessive-compulsive disorder. *Journal of Anxiety Disorders, 12*, 525–537.

Turner, C. M. (2006). Cognitive-behavioural theory and therapy for obsessive-compulsive disorder in children and adolescents: current status and future directions. *Clinical Psychology Review, 26*, 912–938.

Van de Vijver, F. and Leung, K. (1997). *Methods and Data Analysis for Cross-Cultural Research*. London: Sage Publications.

Van Oppen, P. and Arntz, A. (1994). Cognitive therapy for obsessive-compulsive disorder. *Behaviour Research and Therapy, 32*, 79–87.

Weismann, M. M., Bland, R. C., Canino, G. J., Greenwald, S., Hwu, H. G., Lee, C. K., Newman, S. C., Oakley-Browne, M. A., Rubio-Stipec, M. and Wickramaratne, P. J. (1994). The cross

natural epidemiology of obsessive compulsive disorder. *Journal of Clinical Psychiatry, 55*, Suppl. 3, 5–10.

Yorulmaz, O., Karancı, A. N. and Tekok-Kılıç, A. (2002). *Inflated Responsibility in Obsessive-Compulsive Symptomatology*. Presentation at the XII National Psychology Congress, Ankara, Turkey.

Yorulmaz, O., Karancı, A. N. and Tekok-Kılıç, A. (2006). What are the roles of responsibility and perfectionism in checking and cleaning symptoms? *Journal of Anxiety Disorders, 20*, 312–327.

Yorulmaz, O., Yılmaz, A. E. and Gençöz, T. (2004). Psychometric properties of the Thought-Action Fusion Scale in a Turkish sample. *Behaviour Research and Therapy, 42*, 1203–1214.