Quarterly of Clinical Psychology Studies
Allameh Tabataba'i University
Vol. 9, No. 33, Winter 2019, Pp 1-24.

Effectiveness of Metacognitive Therapy on Dysfunctional Beliefs, Inflated Sense of Responsibility, and Intolerance of Uncertainty in Patients with Obsessive-Compulsive Disorder (OCD)

Received: 11 November, 2018 *Accepted: 2 September, 2018*

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Abstract

The present study aimed at investigating the effectiveness of metacognitive therapy on dysfunctional beliefs, inflated sense of responsibility, and intolerance of uncertainty in patients with obsessive compulsive-disorder (OCD). The design used in the present study is semi-experimental, pretest-posttest with control group and a tree-month follow-up stage. The statistical population consisted of all patients with OCD in Mahallat, a city located in Markazi province, Iran in 2018. The participants first screened by using inclusion and exclusion criteria. Then sixteen patients with OCD selected as the sample of the study through available sampling method and assigned randomly into two groups: one experimental group and one control group (eight patients in each group). Each participant in the experimental group received 12 treatment sessions according to Well's metacognitive therapy method for OCD. The participants were measured both before and after interventions as well as three months later in the follow-up phase by the Yale-Brown Obsessive-Compulsive Scale (Yale-BOCS; Goodman, 1989), the Obsessive Beliefs Questionnaire (OBQ-44; OCCWG, 2005), the Salkovskis Responsibility Attitude Scale (RAS; Salkovskis, 2000) and the Intolerance of Uncertainty Scale (IUS; Feriston, 1994). Data analyzed

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by multivariate co-variance analysis. The results indicated that metacognitive therapy had a significant effect on reducing dysfunctional beliefs, the inflated sense of responsibility and the variable intolerance of uncertainty ($p<0.050$), and its effect remained three months after treatment ($p<0.050$). The findings of the study support the effect of metacognitive therapy in improving the dysfunctional beliefs, inflated sense of responsibility and uncertainty of intolerance in patients with OCD.

Keywords: Obsessive-compulsive disorder (OCD), Dysfunctional beliefs, Inflated sense of responsibility, Intolerance of uncertainty, Metacognitive therapy

Introduction

The principal feature of Obsessive–Compulsive Disorder (OCD) is the occurrence of obsessions and compulsions. Obsessions are intrusive thoughts, images, and impulses that occur against the individual's will, and they are experienced as repugnant and uncharacteristic of the self. Obsessions are actively resistant. The person realizes that they are the product of his or her mind. Compulsions are overt or covert repetitive behaviors performed in response to obsessions. They are intendance to reduce distress or discomfort or to prevent some dreaded event. Patients may have particular rules or systems for conducting their rituals (Wells, 2009, p.154; APA, 2013). The issue of the relative importance of dysfunctional cognitive beliefs and meta-cognizance in the development and maintenance of obsessive-compulsive symptoms (OCD) remains the subject of controversy (Hansmeier, Exner, Rief, Glombiewski, 2016). Cognitive theories of compulsive OCD are central to the role of the dysfunctional beliefs in the usual interventions in the development and maintenance of Obsessive-Compulsive Disorder (Frost & Steketee, 2002). Many individuals with OCD have dysfunctional beliefs. These beliefs can include an inflated sense of responsibility and the tendency to overestimate threat; perfectionism and intolerance of uncertainty; and over-importance of thoughts (APA, 2013, p. 238).

There is a clear evidence of the role of the dysfunctional beliefs in the creation and maintenance of obsessive-compulsive disorder. Dysfunctional beliefs are considerd as irrational assumptions and ineffective attitudes about the individual, his outside world, and thoughts that are constant throughout the situations (Salkovskis, 2007). Conley and Wu (2018) also interpreted the ineffectiveness of dysfunctional beliefs in creation and maintenance of obsessive-

compulsive disorder. In the context of OCD, the Obsessive Compulsive Cognition Working Group (OCCWG, 1997) recently identified three dimensions of OCD related beliefs; (a) inflated personal responsibility and the tendency to overestimate threat (responsibility and threat estimation), (b) perfectionism and intolerance of uncertainty (perfectionism and certainty), and (c) over-importance and over-control of thoughts (importance and control of thoughts). All of the obsessive-beliefs sub-scales supported the correlation between obsessive-compulsive symptoms and beliefs about responsibility and threat estimation, perfectionism and certainty, and importance and control of thoughts. Kim, McKay, Taylor, Tolin, Olatunji, Timpano, and Abramowitz (2016), Cheie and Miu (2016), Raines, Carroll, Mathes, Franklin, Allan, and Constans (2019), and in Iran Bakhshipour, Alilou, Pourfaraj Omran (2016), Halvaiepour and Nosratabadi (2016), also emphasized the role of dysfunctional beliefs in obsessive beliefs and the creation and continuation of obsessive-compulsive disorder.

Cognitive models of obsessive-compulsive disorder also indicating that responsibility assessment is involved in the etiology and preservation of symptoms of OCD (Mantz, & Abbott, 2017). According to Salkovskis (2000), the overwhelming perception of responsibility in OCD has a central role. He asserts that people with OCD interpret normal intrusive thoughts as indicative of harm or danger and feel responsible for preventing harm to themselves or others. The findings of Arntz, Voncken and Gossen (2007) and in Iran Rahimi, and Haghighi (2015) showed responsibility plays a causal role in OCD. Evidence collected supports this concept, and initial data suggest that modifying a liability assessment in treatment can play a role in reducing symptoms in people with OCD. Coles and Schofield (2008) stated that inflated responsibility beliefs are one of the main attributes of OCD. Pugh, Luzon and Ellett (2018), Luppino, Tenore, Mancini and Basile (2018), Altin, and Karanci (2008), Foa, Amir, Bugert, Molnar, and Przeworski (2001) also emphasized the key role of inflated responsibility in obsessive-compulsive disorder.

Intolerance of uncertainty (IU), which means the tendency to avoid ambiguous situations and inability to deal with uncertainty is a major damage to obsessive compulsive-disorder (Fergus & Wu, 2011). Intolerance of uncertainty is a kind of cognitive bias that affects how an individual receives, interprets, and reacts to an uncertain situation

in the emotional, cognitive, and behavioral levels. Evidence suggests that obsessive individuals act as a mechanism for threatening ambiguities and potential impacts, as well as for gaining an increasing sense of control over abusive triggers, which raises uncertainty (Dugas, Schwartz & Francis, 2004). Purdon and Clark (1999) argue that there are beliefs in obsessive individuals that these beliefs cause wrong assessment of unwanted thoughts and make it difficult for a person to Intolerance of uncertainty is a kind of cognitive bias that affects how an individual receives, interprets and reacts to an uncertain situation in the emotional, cognitive and behavioral levels. Patients with OCD are able to tolerate uncertainty fewer rather than normal people, and this can resulted on their uncertainty, doubt, and checking behaviors that are most relevant to Intolerance of uncertainty (Kazemi, Rezaei, Saeidpoor, Samimi, Parooi, & Afzoon, 2017). Tolin, Abramowitz, Brigidi, and Foa (2003) have also argued that intolerance of uncertainty may play a major role in obsessive-compulsive disorder. Samuels, Bienvenu, Krasnow, Wang, Grados, Cullen and Rasmussen, (2017) concluded in their research, that the uncertainty in obsessive-compulsive disorder has a tremendous importance that so far has not been addressed in psychiatry treatment of obsessive-compulsive disorder and is well responsive to cognitive and behavioral therapies.

The researches by Gillett, Bilek, Hanna, and Fitzgerald (2018); Counsell, Furtado, Iorio, Anand, Canzonieri, Fine, and Katzman (2017); Faleer, Fergus, Bailey, and Wu (2017); also in Iran: Almardani someeh, Narimani, Mikaeeli, and Basharpoor (2017); Ahadi and Moradi (2018); Salmani and Hasani (2016); Shahjoee, Mahmood Aliloo, Bakhshipour Roodsari, and Fakhari (2012**)** showed that attention to the fundamental role of intolerance of uncertainty and positive meta-cognitive beliefs in obsessive-compulsive disorder are necessary in treatment.

Patients suffer from obsessive compulsive-disorder because they are at risk of experiencing OCD (Salcovskis, 2007). OCD is a heterogeneous disorder and has different therapeutic approaches (Tolin, Worhunsky, Brady, & Maltby, 2007). Treatment requires the change of beliefs and the removal of disturbing thoughts and inflated responsibility and behaviors related to the preservation of these beliefs. Different approaches integrated into a fully effective behavioral therapy program and combined the principles of

confrontation along with response avoidance; Cognitive-behavior therapy and exposure and response prevention are the most effective psychological treatments for obsessive–compulsive disorder (OCD). However, these approaches often produce variable results with the majority of treated individuals remaining symptomatic (Fisher & Wells, 2008).

Metacognition therapy is a new form of cognitive therapy based on meta-cognitive model of Wells for OCD. Metacognitive model of OCD predicts that metacognitions must change in order for psychological treatment to be effective (Solem, Håland, Vogel, Hansen, & Wells, 2009). The results showed that the metacognitive therapy might be effective and affordable for OCD (Fisher & Wells, 2008). Metacognition examines the processes and structures of knowledge that revise and control various aspects of cognition. Therefore, metacognition is a kind of information processing system that reviews, interprets, and evaluates its content and processes. The term metacognition refers to as obsessive-compulsive cognitive processes that are involved in controlling the aspects of cognition. According to Wells (2009), obsessive-compulsive thoughts activate metacognitive beliefs in relation to the meaning of thoughts, as with cognitive-behavioral approach, metacognitive therapy also assumes that biased thinking causes psychological disorder, but metacognitive therapy provides another explanation of its nature and causes. Negative beliefs do not necessarily lead to disruptive thinking patterns and the continuation of emotional distress. Based on metacognitive theories, disturbance in thinking and emotion comes from metacognition. Metacognition is different from other thoughts and beliefs that emphasized in cognitive-behavioral therapy (Wells, 2009).

Although both patterns emphasize the importance of evaluating obsessive-compulsive thoughts, the content of these assessments is different in two patterns, in the Salkovskis (1985) pattern of responsibility and in Wells pattern (2000) metacognitive beliefs about thoughts and neutralization responses considered as the main feature of obsessive-compulsive disorder. Myers, Grøtte, Haseth, Guzey, Hansen, Vogel, and Solem (2017) stated the metacognitive model of obsessive-compulsive disorder (Wells, 1997; Chiniforoushan, Sohrabi, Golzari, & Farokhi, 2017) emphasizes the role of metacognitive beliefs on both thoughts and rituals (Myers, et.al, 2017). In Meta-cognitive therapy, while beliefs are challenge, recognition based on

self-beliefs (Wells, 2009, p. 4). Findings of the importance of metacognitive beliefs in the treatment of obsessive-compulsive disorder are supported in the study of Solem et al. (2009). Since confirmation of the effectiveness of a therapeutic technique requires conducting numerous studies by independent researchers, further studies on this therapeutic model, which is considered as an innovation in cognitive therapies, seems necessary (Mousavi Moghadam, Bairami, Bakhshipour & HamidPour, 2017).

The present study examined the effect of metacognitive therapy in patients with OCD, which was proposed by Wells in 2009. Metacognitions' influence on obsessive-compulsive symptoms was evaluated and compared to the role of three central cognitive beliefs; dysfunctional beliefs, inflated sense of responsibility, and intolerance of uncertainty. No research has been conducted to examine the role of all these factors in relation to the symptoms of OCD. Therefore, researchers of the current study decided to do it for the first time this project. Since patients with obsessive-compulsive disorder were available in the Mahallat, and they had a high inclination to cure, we decided to carry out research at the psychological centers of the city. Therefore, the present study investigated the effect of metacognitive therapy on dysfunctional beliefs, inflated of sense responsibility, and intolerance of uncertainty in patients with OCD.

Method

Participants: The sample of the study included 16 patients who selected through available sampling method. The inclusion criteria for the participants were having OCD according to DSM5, and age range between 20 to 40, having university education; middle-income, having no mental or somatic disorders. The exclusion criteria were drug dependency, mental disorders, having obsessive-¬compulsive disorder for more than ten years, and absence from the treatment sessions. After selecting the sample, the participants assigned randomly into two groups: eight participants as the experimental group and eight participants as the control group. The participant in the experimental group received 12 treatment sessions according to Well's metacognitive therapy method for OCD while their counterparts did not.

Procedures: After diagnosing OCD by a psychologist based on DSM5, the participants interviewed as pretest. A contract form signed

with the participants of the experimental group and some information regarding the number of therapy sessions provided. They were all assured that their privacy would be kept in line with ethical codes. Then based on the results, the participants in each group paired up in terms of some characteristics such as age, education level. The treatment sessions held for the participants of the experimental group. At the end of treatment period, all participants were required to fill a questionnaire as the posttest. A delayed posttest administered after three months. The collected data analyzed using the statistical software SPSS version 23. An independent t-test and a MANCOVA employed for the required statistical analyses. Moreover, a Benferron's post hoc test used to examine the difference between mean pretest, posttest, and follow-up.

Metacognitive therapy: Meta-cognitive therapy based on Wells metacognitive therapy protocol.

This therapeutic process involves:

1. Introducing obsessive-compulsive disorder as an emotional disorder, charting and knowledge of metacognitions,
2. Enhancing patient's skills in using a mentally retarding strategy,
3. Evaluating and modifying metacognitive beliefs related to the mixing of thought-event, thought, action, and thought,
4. Confronting difficult situations and preventing responses,
5. Creating alternative strategies for guidance and behavior,
6. Of repeated practice of alternative behaviors and strategies in the face of difficult situations.

Structure of Treatment: Treatment sessions usually held on a weekly basis. Up to 12 sessions is typical although more may be required if OCD occurs in the context of perfectionistic personality traits. Treatment sessions scheduled to last 45–60 minutes. An important early task in treatment is shifting the patient from an object mode to a metacognitive mode of processing. This is achieved via socialization and intensive use of DM and related strategies such as ERC. The stages of treatment are:

1. Case conceptualization
2. Socialization
3. Training detached mindfulness (and shifting to the metacognitive mode)
4. Modifying metacognitive (fusion) beliefs about intrusions
5. Modifying beliefs about rituals and stop signals

6. Reinforcing new plans for processing
7. Relapse prevention. (Wells, 2009, p.167).

Agenda of metacognitive therapy sessions:

Table 1. OCD Treatment Plan (Wells, 2011)

Session 1	Generate case formulation. Socialize to model. Run suppression experiment. Practice detached mindfulness (DM) -neutral thought. Practice DM-obsessional thought. Homework: Apply DM to intrusions.
Session 2	Review homework and OCD-S. Continue socialization-problem is beliefs about thoughts. Further practice of DM. Introduce exposure and response commission (ERC) or ritual postponement. Homework: Apply ERC or ritual postponement.
Session 3	Review homework and OCD-S, especially fusion beliefs. Further practice of DM and ERC. Verbal challenge of TEF, TAF, and TOF. Run in-session behavioral experiments for TEF, TAF, and TOF. Homework: Apply DM to intrusions. Run behavioral experiments.
Session 4	Review homework and OCD-S, especially fusion beliefs. Continue the verbal challenge of TEF, TAF, and TOF. Run in-session behavioral experiments for TEF, TAF, and TOF. Homework: Continue DM. Run specific behavioral experiments.
Session 5	Review homework and OCD-S, especially fusion beliefs. Continue the verbal challenge of TEF, TAF, and TOF. Run further behavioral experiments in session. Explore beliefs about rituals. Homework: Run specific behavioral experiments (e.g. exposure and response-prevention experiments).
Session 6	Review homework and OCD-S, especially fusion beliefs and rituals. Continue challenging TEF, TAF, and TOF. Challenge beliefs about rituals. Homework: Ban rituals to test predictions about consequences. Increase exposure to thoughts.
Session 7	Review homework and OCD-S, especially fusion beliefs and rituals. Continue working on TEF, TAF, and TOF (use exposure experiments) .Continue to modify beliefs about rituals. Explore and begin to change stop signals. Homework: Ban rituals, practice alternative criteria for knowing, increase exposure.
Session 8	Review homework and OCD-S, especially residual avoidance and beliefs. Continue working on TEF, TAF, and TOF (use exposure experiments). Continue to change the signals and criteria for knowing. Devise a new plan for dealing with intrusions. Homework: Implement a new plan, increase exposure.
Session 9	Review homework and OCD-S, especially residual avoidance and rituals. Work on remaining fusion beliefs. Work on banning remaining rituals/avoidance. Begin therapy blueprint. Homework: Ask the patient to work on a blueprint. Implement the new plan.

	Review homework and OCD-S, especially any remaining beliefs, avoidance, and rituals.
Session 10	Work on residual beliefs and behaviors. Relapse prevention: Consolidate new plan for dealing with obsessions in the future. Finalize the therapy blueprint. Schedule booster sessions. Homework: Specify continued application.
Relapse Prevention:	Working on the therapeutic blueprint commences in the final two sessions of treatment. The blueprint consists of an example of the case formulation, a list of patient's metacognitive beliefs about intrusions, and a summary of evidence challenging them that have been obtained through verbal and behavioral methods. The blueprint consists of summary statements about the disadvantages of performing rituals and a detailed exposition of the old and new plan for processing / behavior. The therapist checks for remaining fusion beliefs and the presence of rituals / avoidance as markers for remaining dysfunctional beliefs or plans that require further modification respectively.

Instruments: the instruments employed in this study were interview diagnosis based on DSM-5 to measure the severity of OCD; Yale–Brown Scale (Y-BOCS), the Obsessive Belief Questionnaire (OBQ-44), the Salkovskis Responsibility Attitude Scale (RAS) and the Intolerance of Uncertainty Scale (IUS).

Obsessive-Compulsive Scale Yale-Brown (Y-BOCS)

(Goodman, Price and Rasmussen, 1989): The Yale-Brown Obsessive-Compulsive Scale was designed to remedy the problems of existing rating scales by providing a specific measure of the severity of symptoms of obsessive-compulsive disorder that is not influenced by the type of obsessions or compulsions present. The scale is a clinician-rated, 10-item scale, each item rated from 0 (no symptoms) to 4 (extreme symptoms) (total range, 0 to 40), with separate subtotals for severity of obsessions and compulsions. The Yale-Brown Obsessive-Compulsive Scale is a reliable instrument; with an internal stability of 0.89 by Goodman, Price, Rasmussen, Mazure, Fleischmann, Hill, et al., (1989). For the Persian version, Esfahani, Motaghipour, Kamkari, Zahiredin & Janbozorgi (2012), validated the scale. The internal consistency scores of symptom checklist (SC) and severity scale (SS) were 0.97 and 0.95, and the reliability index of SC and SS using split-half method were 0.93 and 0.89 respectively.

Obsessive-Compulsive Inventory

(OBQ-44, OCCWG, 2005): The Obsessive Beliefs Questionnaire-44 (OBQ-44) developed by the Obsessive-Compulsive Cognitions Working Group (OCCWG) to measure beliefs considered important in

the development and maintenance of OCD. In this study an exploratory factor analysis of the questionnaire was conducted with a student population (n=238). Results indicated four factors: (1) perfectionism and intolerance of uncertainty, (2) importance and control of thoughts, (3) responsibility, and (4) overestimation of threat. All four factors were positively associated with obsessive-compulsive symptoms and worry. A series of regression analyses run to test the relative contributions of cognitive and metacognitive factors. In doing so, we controlled for worry and general threat. The metacognitive dimension of importance and control of thoughts emerged as a consistent unique predictor of overall obsessive-compulsive symptoms. Exploratory analyses of predictors of obsessive-compulsive symptom subtypes showed that metacognition and perfectionism contributed to different symptom domains. The data suggests that particular beliefs may be important in OCD. In Iran, Shams, Karamghadiri, Esmaeli and Ebrahimkhani (2004) validated the scale with high validity and reliability.

Responsibility Attitude Scale (RAS)

(Salkovskis, et al., 2000): Responsibility Attitude Scale is a 26 items scale. The goal is to assess general attitudes, beliefs, and predisposing characteristics of responsibility and harm concerns in OCD. The subjects are asked to indicate how much they agree or disagree with specific statements related to responsibility using a 7-point Likert Type scale where one stands for "totally disagree", 4 stands for "neutral" and 7 for "totally agree". In Iran, the Cronbach's Alpha coefficient of 0.94 for reliability and for internal consistency of 0.92 and the predicted validity of 0.52 have been reported for the Maudsley Obsessive-Compulsive Scale. In Persian version of Kabirnezhad (2010), the reliability of the test was assured by test-retest method (r = 0.84), split-half method (r= 0.61) and internal consistency method (r= 0.94).

Intolerance of Uncertainty Scale (IUS)

(Freeston, 1994): It consists of 27 items assessing implications of being uncertain, attempts to control the future, and emotional, cognitive, and behavioral reactions to ambiguous situations. Items (e.g., "I always want to know what the future has in store for me") are answered on a five-point scale (1 = strongly disagree; 5 = strongly agree). The French version of the measure has excellent internal consistency (a=0.91), good test–retest reliability over a five-week

period (r= 0.78) and demonstrated convergent and discriminant validity (test–retest from Dugas et al., 1997; Freeston, 1994). The English version of the measure also has excellent internal consistency (α=0.89), and satisfactory test-retest reliability (r = 0.74), as well as good convergent and discriminant validity. In Iran, Akbari, Hamidpour and Endozes (2010) obtained a Cronbach's alpha 0.88 and test-retest reliability (at interval of 3 weeks) of 0.76 for this scale (Akbari, 2017).

Results

In order to test the research hypothesis, a Multivariate Analysis of Covariance (MANCOVA) test was used. The rationale behind using the test was probability of an initial difference between the experimental and control groups. Before running the test, some assumptions were checked. First, the homogeneity of variance-covariance matrices was checked. Using a Box test, the results of the test showed that sig = 0.05 was assumed to be homogeneous for variance-covariance matrix. Another important assumption of multivariate covariance analysis was the convergence of regression coefficients. The tilt homogeneity of regression coefficients was obtained by group interaction and pre-test. The results of homogeneity of slopes showed that, since F is not calculated for group interaction and the pre-test is less than 0.05 in significance, the data supported the assumption of homogeneity of regression. (Sig = 0.05). To analyze the variance of two groups in the post-test and follow-up stage, the Levin equation test was used. The results (Box's M = 12.769, f =1.625 & sig = 0.134 > 0.05) showed that homogeneity assumption of variance-covariance matrix was accepted.

Table 2. Mean and standard deviation of research variables

		Metacognitive therapy		Control group	
Variable	Test	Mean	Std. Deviation	Mean	Std. Deviation
Dysfunctional beliefs	pre-exam	-57.75	17.277	-66	20.142
	Post-test	50.38	8.035	-63.38	17.663
	Follow-up	55.25	11.523	-	-
Inflated responsibility	pre-exam	135.63	27.759	140.88	11.765

	Post-test	34.63	5.153	142.63	12.894
	Follow up	31	4.375	-	-
Intolerable uncertainty	pre-exam	94.25	2.765	63/99	945/7
	Post-test	33.25	5.392	102.25	8.582
	Follow up	31.75	6.606	-	-

Table (2) shows the mean and standard deviation of professional beliefs, inflated responsibility, and intolerance of uncertainty in three stages of assessment in the experimental group and control groups. Accordingly, the mean of the mentioned indices in the experimental group in the post-test and follow-up stages changed in comparison with the control group.

Table 3. Multiple Statistics Analysis of Covariance

Test	Value	F	df	Significant level(Sig)	Partial Eta Squared(η2)	Observed Power
Pillai's Trace	0.991	334.067	3	0.001	0.991	1
Wilks' Lambda	0.009	334.067	3	0.001	0.991	1
Hotelling's Trace	111.356	334.067	3	0.001	0.991	1
Roy's Largest Root	111.356	334.067	3	0.001	0.991	1

The results in Table (3) show that there was a significant difference between the two groups after eliminating the effect of pre-test. The results of Wilks' Lambda test showed that the effect of the group on dysfunctional beliefs, inflated responsibility, and intolerance of uncertainty were effective and improved these variables. In order to investigate the role of metacognitive therapy, inflated responsibility and intolerance of uncertainty, the Multivariate Covariance Analysis (MANCOVA) test used, the results of which are given in Table (4).

Table 4. Multivariate covariance analysis for mean of research variables in two groups

Dependent Variable	Source	Sum of Squares	df	Mean Square	F	Sig	Partial Eta	Observed Power

							Squared (η^2)	
Dysfunctional beliefs	pre-exam	1478.986	1	1478.986	16.378	0.002	0.598	0.957
	group	34168.042	1	34168.042	378.370	0.001	0.972	1
Inflated responsibility	pre-exam	240.584	1	240.584	2.562	0.138	0.189	0.310
	group	33754.038.	1	33754.038	359.496	0.001	0.970	1
Intolerable uncertainty	pre-exam	372.956	1	372.956	13.326	0.004	0.548	0.913
	group	11959.724	1	11959.724	427.326	0.001	0.975	1

As Table (4) shows, there were experimental group and control group in the field of indicators (dysfunctional beliefs, inflated responsibility and intolerance of uncertainty). The results showed that there was a significant difference (sig), and the experimental group was more effective than the control group. Therefore, assuming control of the effects of the pre-test, the effects of metacognitive therapy had the effect of improving the dysfunctional beliefs, inflated responsibility, and intolerance of uncertainty.

To distinguish between the groups and the two-dimensional comparison of averages, Bonferroni's post-hoc test used, the results of which presented in Table (5).

Table 5. Bonferroni pair comparison test between two groups in the research variables

Group	Compared to group	Variable	Average difference	Significant level
MCT	Control	Dysfunctional beliefs	107.635	0.001
		Inflated responsibility	-106.981	0.001
		Intolerable uncertainty	-63.680	0.001

The results of table (5) indicated that there was a significant difference between the experimental group (metacognitive therapy) and the control group.

Table 6. Multivariate Covariance Analysis for dysfunctional beliefs and its Components in Two Groups

dependent variable	Source	Sum of Squares	df	Mean Square	F	Meaningful	Partial Eta Squared (η 2)	Observed Power
Dysfunctional beliefs	pre-exam	657.532	1	657.532	5.765	0.043	0.418	0.559
	Group	28786.057	1	28786.057	251.992	0.001	0.969	1
Public beliefs	pre-exam	125.271	1	125.271	5.182	0.042	0.393	0.517
	Group	776.217	1	776.217	321.702	0.001	0.976	1
Perfectionism/ certainty	pre-exam	57.283	1	57.283	2.319	0.166	0.225	0.269
	Group	3645.689	1	3645.689	147.609	0.001	0.976	1
Responsibility / treat estimation	pre-exam	9.017	1	9.017	0.739	0.399	0.090	124.0

	Group	2240.430	1	2240.430	197.094	0.001	0.961	1
Importance and control of thoughts	pre-exam	131.912	1	131.912	17.816	0.003	0.690	0.957
	Group	1621.556	1	1621.556	219.008	0.001	0.965	1
Complete the affairs	pre-exam	4.123	1	40123	0.887	0.374	0.100	0.133
	Group	779.247	1	779.247	167.726	0.001	0.954	1

As can be seen in Table (6), there was a difference between the two groups of experiments and control in the context of the variable of beliefs and its indices, there was a significant difference (sig = 0.05) and the experimental group was more effective than the control group. Therefore, assuming control of the effects of pre-test, the effects of meta-cognitive therapy have the effect of improving on the dysfunctional beliefs and components of it, including general beliefs, perfectionism and certainty, sense of responsibility and threat assessment, the importance and control of thoughts, and complete affairs. The high Eta squared (η2) for all the variables in the research indicated a high impact on the improvement status.

In order to distinguish between groups and the two-dimensional comparison of the averages, a Bonferroni post hoc test used. The results showed that there was a significant difference between the experimental group and the control group. Therefore, according to the findings, it can be concluded that metacognitive therapy results in the promotion of the linguistic beliefs and the components of public beliefs, perfectionism, and certainty, the sense of responsibility and assessment of the threat, the control of thoughts, and full accomplishment of affairs in individuals.

Table7. Test results T Correlated to compare the pairs of interventional periods (pretest, posttest, and follow up) on inflated of senses responsibility:

group	Couples Coupled	Mean	Std. Deviation	STD. error Mean	T	df	Sig. (2-tailed)
MCT	Pre-test -Post-test	101	25.973	9.183	10.99	7	0.001
	Pre-test - Follow up	104.625	25.573	9.041	11.572	7	0.001
	Post-test- follow up	3.625	3.701	1.308	2.770	7	0.028
Control	Pre-test -Post-test	-1.750	8.681	3.069	-0.570	7	0.586

The results of Table 6 showed that there was a significant difference in the comparison of the pairs of changes in the average of inflated responsibility at the pretest stage with post-test and follow-up in the experimental group. (Sig <0.05). In addition, this difference was significant in comparison between the changes in the average of inflated responsibility in post-test with follow-up (sig). Moreover, this significant difference meant improving the status of inflated responsibility in the follow-up phase to the post-test. These results confirm that the effectiveness of metacognitive therapy on inflated of senses responsibility over time had a good sustainability. In addition, there was no significant difference in the mean of inflated responsibility changes in pretest and posttest in the control group. (Sig> 0.05).

Table8.Test results T Correlated to compare the pairs of interventional periods (pretest, posttest, and follow up) on intolerable uncertainty:

Group	Couples Coupled	Mean	Std. Deviation	STD.error Mean	T	df	Sig. (2-tailed)
MCT	Pre-test -Post-test	61	6.141	2.171	28.095	7	0.001
	Pre-test -Follow up	62.50	6.866	2.428	25.746	7	0.001
	Post-test- follow up	1.50	2.976	1.052	1.426	7	0.197
Control	Pre-test -Post-test	-2.625	4.138	1.463	-1.794	7	0.116

The results of Table (8) showed that there was a significant difference in the comparison of the pairs of changes in the mean of intolerance of uncertainty in the pretest with post-test and follow-up in the test groups, (sig <0.05). In addition, this difference was not significant in comparison between the changes in the mean of

intolerance of uncertainty in the post-test with follow-up (sig> 0.05). These results confirmed that the effectiveness of metacognitive therapy on sustained intolerance over time was well established. Moreover, there was no significant difference in the changes in the mean of hesitancy intolerance in the pretest with posttest in the control group, (sig>0.05).

Discussion and Conclusion

The present study aimed to investigate the effectiveness of meta-cognitive therapy on dysfunctional beliefs, inflated sense of responsibility and intolerance of uncertainty in patients with obsessive-¬compulsive disorder (OCD). The results of the study indicated that there was a significant difference between the experimental group and the control group in terms of dysfunctional beliefs, inflated sense of responsibility and intolerance of uncertainty. Therefore, assuming control of the effects of pre-test, the effect of metacognitive therapy proven to improve dysfunctional beliefs, inflated sense of responsibility and intolerance of uncertainty in OCD patients. Moreover, the high effect size (ETA) and statistical power for research variables indicated high effect on improvement. The findings of the study are in line with those of Wolters, et al (2019); Raines, et al (2019); Conley and Wu (2018); Kim et al., (2016); Cheie and Miu (2016), Calleo et al., (2010); Hamamcı, and EsenCoban (2010); also in Iran Bakhshipour et al. (2016); Halvaiepour and Nosratabadi (2016) which are related to the role of dysfunctional beliefs in obsessive beliefs in the establishment and continuation of obsessive compulsive-disorder are consistent.

The relationship between inflated sense of responsibility and obsessive--compulsive disorder (OCD) has been proven in some research studies. In this regard, the findings of the study are supported by the findings of Mantz and Abbott (2017); Luppino, Tenore, Mancini and Basile (2018); Pugh, Luzon and Ellett (2018); Grøtte, et al,.(2015); Rahimi and Haghighi (2015).

Moreover, the findings of the current study are in line with those of Salmani and Hasani (2016); Samuels et al., (2016), Gillett, Bilek, Hanna, and Fitzgerald (2018); Faleer, Fergus, Bailey, and Wu (2017); Counsell et al., (2017); Almardani ,et al., (2017); Shahjoee et al. (2012). Which considered intolerance of uncertainty plays a causal role in OCD. This study indicated that metacognitive therapy for OCD

patients leads to reduction in dysfunctional beliefs, inflated sense of responsibility and intolerance of uncertainty. For explaining the findings, we can refer to Wells (2009) who stated MCT focuses on developing an alternative way of experiencing thoughts and modifies beliefs about the meaning and importance of thoughts and feelings.

In fact, therapists' metacognition, via controlling the mechanisms of inefficient dysfunctional strategies, clears the patient's attention from repeated engagement with the unpleasant past events, and enables the person to deviate his/her attention and concentration from the trap of emotional and behavioral cognitive disorder and consequently focuses on other aspects of life (Asaszadeh & Mahmoudalilou, 2018).

Treatment also focuses on modifying beliefs about rituals and the inappropriate internal criteria and strategies individuals with OCD appear to use to determine the level of threat in situations.

On the other hand, what causes obsessive-compulsive symptoms and subsequent obsessive behaviors to continue is the patient's misconduct surrounding the inflated sense of responsibility. Therefore, the correction of responsibility misunderstanding can prevent the obsessive-compulsive disorder of the patient to be treated. The findings of Arntz, Voncken, and Goosen (2010) indicated that responsibility plays the role of causality in the obsessive-compulsive disorder. Luppino, Tenore, Mancini, and Basile (2018); Mantz and Abbott (2017); Pugh, Luzon and Ellett (2018) also emphasized the key role of inflated sense of responsibility in obsessive-compulsive disorder. Reduction in inflated sense of responsibility in the treatment of the experimental group in the present research indicates the role of inflated sense of responsibility in patients with OCD. Moreover, the reduction in uncertainty of intolerance in improving the patients in the experimental group confirms the findings of Salmani and Hasani (2016) which indicated that uncertainty of intolerance plays a key role in continuation of the long-term concern, and those of Faleer, Fergus, Bailey and Wu (2017) which proved that uncertainty of intolerance is a severe damage for OCD.

Improvement in the treatment of MCT in the present study indicates the significance of Samuels et al., (2017) findings, which indicated that uncertainty is of great importance in Obsessive-compulsive disorder but no proper attention has so far been given to it in psychiatry.

Improvement at the follow-up stage shows that the effectiveness of the MCT on the variables over time is significant. Such a finding is in line with the findings of Asaszadeh and Mahmoudalilou (2018); Hansmeier, Exner, Rief, Glombiewski (2017); Myers et al., (2017); Van der Heiden et al., (2016). The study showed that MCT was an effective treatment to reduce the symptoms of obsessive-compulsive disorder. Moreover, due to the importance of some variables such as dysfunctional beliefs, inflated sense of responsibility, and intolerance of uncertainty in treatment of the disorder, diagnosis of these variables in patients with obsessive-compulsive disorder can play an effective role in treatment of OCD.

The current study suffered from some limitations. Since the prevalence of obsessive-compulsive disorder in women is slightly higher rate than males in adulthood (APA, 2013, p.239), females constituted a higher proportion than males in this study. During the time of the study, 17 patients with OCD had the inclusion and exclusion criteria of the study and were homogenous in terms of age and education. Therefore, 16 patients selected as the sample based on Morgan table. The generalization of the results of this study should be made cautiously due to a three-month follow-up, limited time and location, and OCD patients.

To date, MCT has not been studied in the population of adolescents with obsessive-compulsive disorder. Moreover, its effectiveness on dysfunctional beliefs, inflated sense of responsibility and intolerance of uncertainty has not been investigated in the given population. It is recommended that interested researchers carry out research with more participants. In addition, it is suggested that longitudinal studies be carried out to examine the long-term effect of the given variables. It is also suggested that in the psychological interventions, the therapists emphasize the cognitive aspects of OCD. It is suggested that in the wider context, research studies are conducted on the effectiveness of metacognitive therapy on the variables of dysfunctional beliefs, inflated sense of responsibility and intolerance of uncertainty in patients with obsessive–compulsive and related disorders and anxiety disorders.

Acknowledgment: This article is from the first author’s Ph.D. dissertation. The authors thank all the people and patients who were kind enough to cooperate in this research. There are also no conflicts of interest between the authors.

References

Ahadi, B., & Moradi, F. (2018). Psychological C Correlates of Intolerance of Uncertainty :(meta-analysis of Persian language Articles). *Journal of Research in Psychological Health*, 12(3), 91-105.

Akbari, M. (2017). The Comparison of the Efficacy of Intolerance Uncertainty Therapy, Buspirone and Combined Treatment in Improvement Symptom of Patients with Generalized Anxiety Disorder. *Clinical Psychology Studies*, 7(27), 89-115.

Almardani someeh, Narimani M, Mikaeeli N, Basharpoor S. (2017). The role of intolerance of uncertainty and emotion regulation in the prediction of marital satisfaction in OCD-pateints. *Journal of Cultural Education of Women and Family*, 11(37), 133-151.

Altın, M., & Karanci, A. N. (2008). How does locus of control and inflated sense of responsibility relate to obsessive-compulsive symptoms in Turkish adolescents? *Journal of Anxiety Disorders*, 22(8), 1303-1315.

American Psychiatric Association. (2013). Diagnostic and statistical manual of mental disorders (DSM-5®). American Psychiatric Pub. Washington, DC: American Psychiatric Association. P. 235-295. [BOOK].

Arntz, A., Voncken, M., & Goosen, A. C. (2007). Responsibility and obsessive–compulsive disorder: An experimental test. Behaviour Research and Therapy, 45(3), 425-435. [Link]

Asaszadeh, I., Mahmoudalilou, M. (2018). The Study of the Effectiveness of Metacognitive Therapy on Depressive Symptoms and Life Expectancy of Women with Breast Cancer. *Clinical Psychology Studies*, 8(29), 69-95.

Bakhshipour, A., Alilou, M. M., & Pourfaraj Omran, M. (2016). Comparative study of cognitive factors in obsessive-compulsive, generalized anxiety, and major depression disorders. *Journal of Shahrekord University of Medical Sciences*, 18(6).

Calleo, J. S., Hart, J., Björgvinsson, T., & Stanley, M. A. (2010). Obsessions and worry beliefs in an inpatient OCD population. *Journal of Anxiety Disorders*, 24(8), 903-908.

Cheie, L., & Miu, A. C. (2016). Functional and dysfunctional beliefs in relation to adolescent health-related quality of life. Personality and Individual Differences, 97, 173-177.

Chiniforoushan, M., Sohrabi, F., Golzari, M., & Farokhi, N. (2017). Comparison of the Effectivness of Metacognitive therapy in a group and individual design patients with Obsessive-Compulsive Disorder.

Coles, M. E., & Schofield, C. A. (2008). Assessing the development of inflated responsibility beliefs: the Pathways to Inflated Responsibility Beliefs Scale. Behavior Therapy, 39(4), 322-335.

Conley, S. L., & Wu, K. D. (2018). Experimental modification of dysfunctional interpretations in individuals with contamination concerns. *Journal of behavior therapy and experimental psychiatry*, 59, 56-64.

Counsell, A., Furtado, M., Iorio, C., Anand, L., Canzonieri, A., Fine, A., & Katzman, M. A. (2017). Intolerance of uncertainty, social anxiety, and generalized anxiety: Differences by diagnosis and symptoms. Psychiatry research, 252, 63-69.

Dugas, M. J., Schwartz, A., & Francis, K. (2004). Brief report: Intolerance of uncertainty, worry, and depression. Cognitive Therapy and Research, 28(6), 835-842.

Esfahani, S. R., Motaghipour, Y., Kamkari, K., Zahiredin, A., & Janbozorgi, M. (2012). Reliability and Validity of the Persian Version of the Yale-Brown Obsessive-Compulsive Scale (Y-BOCS). *Iranian Journal of Psychiatry & Clinical Psychology*, 17(4).

Faleer, H. E., Fergus, T. A., Bailey, B. E., & Wu, K. D. (2017). Examination of an experimental manipulation of intolerance of uncertainty on obsessive-compulsive outcomes. *Journal of Obsessive-Compulsive and Related Disorders*, 15, 64-73.

Fergus, T. A., & Wu, K. D. (2011). Searching for specificity between cognitive vulnerabilities and mood and anxiety symptoms. *Journal of Psychopathology and Behavioral Assessment*, 33(4), 446-458.

Fisher, P. L., & Wells, A. (2008). Metacognitive therapy for obsessive–compulsive disorder: A case series. *Journal of behavior therapy and experimental psychiatry*, 39(2), 117-132.

Foa, E. B., Amir, N., Bogert, K. V., Molnar, C., & Przeworski, A. (2001). Inflated perception of responsibility for harm in obsessive–compulsive disorder. *Journal of Anxiety Disorders*, 15(4), 259-275.

Frost, R. O., & Steketee, G. (Eds.). (2002). Cognitive approaches to obsessions and compulsions: Theory, assessment, and treatment. Elsevier.

Gillett, C. B., Bilek, E. L., Hanna, G. L., & Fitzgerald, K. D. (2018). Intolerance of uncertainty in youth with obsessive-compulsive disorder and generalized anxiety disorder: A Trans diagnostic construct with implications for phenomenology and treatment. *Clinical psychology review*, 60, 100-108.

Goodman, W. K., Price, L. H., Rasmussen, S. A., Mazure, C., Fleischmann, R. L., Hill, C. L., ... & Charney, D. S. (1989). The Yale-Brown obsessive-compulsive scale: I. Development, use, and reliability. Archives of general psychiatry, 46(11), 1006-1011.

Grøtte, T., Solem, S., Vogel, P. A., Güzey, I. C., Hansen, B., & Myers, S. G. (2015). Metacognition, responsibility, and perfectionism in obsessive–compulsive disorder. *Cognitive Therapy and Research*, 39(1), 41-50.

Halvaiepour, Z., & Nosratabadi, M. (2016). External criticism by parents and obsessive beliefs in adolescents: mediating role of beliefs associated with inflated responsibility. *Global journal of health science*, 8(5), 125.

Hamamcı, Z., & Esen-Coban, A. (2010). Dysfunctional relationship beliefs of late adolescence in adjustment to university. Procedia-Social and Behavioral Sciences, 2(2), 300-304.

Hansmeier, J., Exner, C., Rief, W., & Glombiewski, J. A. (2016). A test of the metacognitive model of obsessive-compulsive disorder. *Journal of Obsessive-Compulsive and Related Disorders*, 10, 42-48.

Kabirnezhad, S., MAHMOUD Alilo, A. M., & SHARIFI, M. A. (2010). Validity and reliability of the responsibility attitude scale (RAS). *Psychological Research*, 13(1):109-123.

Kazemi Rezaei, A., Saeidpoor, S., Samimi, Z., Parooi, M., & Afzoon, J. (2017). The Comparison of the Intolerance of Uncertainty and Short-Term Memory Capacity in Patients with Obsessive compulsive-disorder and Normal Individuals. *Journal of Cognitive Psychology*, 5(3).

Kim, S. K., McKay, D., Taylor, S., Tolin, D., Olatunji, B., Timpano, K., & Abramowitz, J. (2016). The structure of obsessive-compulsive symptoms and beliefs: A correspondence and biplot analysis. *Journal of anxiety disorders*, 38, 79-87.

Luppino, O. I., Tenore, K., Mancini, F., & Basile, B. (2018). A Theoretical Integration of Schema Therapy and Cognitive Therapy in OCD Treatment: Goals and Beliefs of the Obsessive Mind (Part I). Psychology, 9(09), 2261.

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

Mantz, S. C., & Abbott, M. J. (2017). The relationship between responsibility beliefs, symptoms, and processes in obsessive-compulsive disorder: A systematic review. *Journal of Obsessive-Compulsive and Related Disorders*, 14, 13-26.

Mousavi Moghadam, S., Bairami, M., Bakhshipour, A., HamidPour, H. (2017). The Efficacy of Metacognitive Therapy on Reduction of Pathological Symptoms and Trait Anxiety Intensity in Patients with Generalized Anxiety Disorder. *Clinical Psychology Studies*, 7(27), 23-45.

Myers, S. G., Grøtte, T., Haseth, S., Guzey, I. C., Hansen, B., Vogel, P. A., & Solem, S. (2017). The role of metacognitive beliefs about thoughts

and rituals: A test of the metacognitive model of obsessive-compulsive disorder in a clinical sample. *Journal of Obsessive-Compulsive and Related Disorders*, 13, 1-6.

Obsessive Compulsive Cognitions Working Group (OCCWG). (1997). Cognitive assessment of obsessive-compulsive disorder. *Behavior Research and Therapy*, 35(7), 667-681.

Pugh, K., Luzon, O., & Ellett, L. (2018). Responsibility beliefs and persecutory delusions. Psychiatry research, 259, 340-344.

Purdon, C., & Clark, D. A. (1999). Metacognition and obsessions. *Clinical Psychology & Psychotherapy: An International Journal of Theory & Practice*, 6(2), 102-110. [Link]

Rahimi, C., & Haghighi, M. (2015). Responsibility attitudes in obsessive-compulsive patients: the contributions of meta-cognitive beliefs and worry. *Iranian Journal of Medical Sciences*, 35(3), 195-200.

Raines, A. M., Carroll, M. N., Mathes, B. M., Franklin, C. L., Allan, N. P., & Constans, J. I. (2019). Examining the Relationships between Perfectionism and Obsessive-Compulsive Symptom Dimensions Among Rural Veterans. *Journal of Cognitive Psychotherapy*, 33(1), 58-70.

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

Salkovskis, P. M. (2007). Psychological treatment of obsessive–compulsive disorder. Psychiatry, 6(6), 229-233.

Salkovskis, P. M., Wroe, A. L., Gledhill, A., Morrison, N., Forrester, E., Richards, C. ... & Thorpe, S. (2000). Responsibility attitudes and interpretations are characteristic of obsessive-compulsive disorder. *Behaviour research and therapy*, 38(4), 347-372.

Salkovskis, P., Shafran, R., Rachman, S., & Freeston, M. H. (1999). Multiple pathways to inflated responsibility beliefs in obsessional problems: Possible origins and implications for therapy and research. *Behaviour Research and Therapy*, 37(11), 1055-1072.

Salmani, B., Hasani, J. (2016). The role of intolerance of uncertainty and positive metacognitive beliefs in obsessive-compulsive disorder and depression. *Razi Journal of Medical Science*s, 23(142), 64-72.

Samuels, J., Bienvenu, O. J., Krasnow, J., Wang, Y., Grados, M. A., Cullen, B.… & Rasmussen, S. A. (2017). An investigation of doubt in obsessive–compulsive disorder. Comprehensive psychiatry, 75, 117-124.

Shahjoee, T., Mahmood Aliloo, M., Bakhshipour Roodsari, A., & Fakhari, A. (2012). Intolerance of uncertainty and worry among patients with generalized anxiety disorder and obsessive-compulsive disorder. *Iranian Journal of Psychiatry and Clinical Psychology*, 17(4), 304-312.

Shams, G., Karamghadiri, N., ESMAELI, T. Y., & Ebrahimkhani, N. (2004). Validation and Reliability assessment of the Persian version of obsessive beliefs questionnaire, 44(32), 23-36.

Solem, S., Håland, Å. T., Vogel, P. A., Hansen, B., & Wells, A. (2009). Change in metacognitions predicts outcome in obsessive–compulsive disorder patients undergoing treatment with exposure and response prevention. *Behaviour Research and Therapy*, 47(4), 301-307.

Tolin, D. F., Abramowitz, J. S., Brigidi, B. D., & Foa, E. B. (2003). Intolerance of uncertainty in obsessive-compulsive disorder. Journal of anxiety disorders, 17(2), 233-242.

Tolin, D. F., Worhunsky, P., Brady, R. E., & Maltby, N. (2007). The relationship between obsessive beliefs and thought-control strategies in a clinical sample. *Cognitive Therapy and Research*, 31(3), 307-318.

Van der Heiden, C., van Rossen, K., Dekker, A., Damstra, M., & Deen, M. (2016). Metacognitive therapy for obsessive–compulsive disorder: A pilot study. *Journal of Obsessive-Compulsive and Related Disorders*, 9, 24-29.

Wells, A. (2007). Cognition about cognition: Metacognitive therapy and change in generalized anxiety disorder and social phobia. *Cognitive and Behavioral Practice*, 14(1), 18-25.Wells, A. (2009).

Wells, A. (2009*). Metacognitive therapy for anxiety and depression*. Guilford press.

Wells, A. (2011). *Metacognitive therapy for anxiety and depression*. Guilford press.

Wolters, L. H., Prins, P. J., Garst, G. J. A., Hogendoorn, S. M., Boer, F., Vervoort, L., & de Haan, E. (2019). Mediating Mechanisms in Cognitive Behavioral Therapy for Childhood OCD: The Role of Dysfunctional Beliefs. Child Psychiatry & Human Development, 50(2), 173-185.