



## The effectiveness of mindfulness based cognitive therapy on rumination, perfectionism and thought-action fusion of women suffering from obsessive-compulsive disorder

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### ABSTRACT

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**Background and Aim:** The purpose of the present study was to determine the effectiveness of cognitive therapy based on mindfulness on rumination, perfectionism, and thought-action fusion of women suffering from obsessive-compulsive disorder who are clients of counseling centers in Neka city. **Methods:** The present research method is practical in terms of purpose and in terms of field situation and in terms of quasi-experimental method with pre-test and post-test design and follow-up with reference group and random assignment. The statistical population of this research included all women who referred to counseling centers in Neka city in the first three months of 2019. Purposive sampling and 30 women who obtained the highest score in the obsessive-practical research tool of Foa et al. (2002) were selected as a sample and then randomly assigned 15 to the cognitive therapy group based on mindfulness and 15 People were assigned to the control group. The experimental group underwent eight sessions of cognitive therapy based on mindfulness based on the protocol of McKenzie et al. (2018), while the control group did not receive any intervention. Also, the rumination questionnaire of Nalen-Hoeksma and Maro (1991), the identity perfectionism questionnaire of Hewitt and Felt (1991), and the thought-action fusion questionnaire of Shafran et al. (1996) were used in the pre-test, post-test and follow-up stages. Finally, the data were analyzed using ANOVA with repeated measures and Bonferroni's post hoc test. **Results:** The results showed that cognitive therapy based on mindfulness on rumination ( $F=20.17, P<0.001$ ), perfectionism ( $F=17.94, P<0.001$ ) and thought-action fusion ( $F=13.95, P<0.001$ ) women with obsessive-compulsive disorder has an effect. **Conclusion:** It can be concluded that cognitive therapy based on mindfulness is effective on rumination, perfectionism, and thought-action fusion of women suffering from obsessive-compulsive disorder, and this therapy can be used to improve women's psychological problems.



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### Introduction

Obsessive-compulsive disorder and related disorders are the sixth category of disorders in the Diagnostic and Statistical Manual of Mental Disorders (American Psychiatric Association, 2013; translated by Seyed Mohammadi, 2013). Based on cognitive behavioral theories, people with obsessive compulsive disorder have certain emotional schemas that come in the form of negative thoughts such as cognitive avoidance, rumination, and continued worry (Ali et al., 2021). Obsessive-compulsive disorder includes obsessive and compulsive actions or thoughts that are time-consuming and cause great suffering or significant impairment of the individual's functions. Obsessive-compulsive disorder has two main characteristics: first, intrusive, uncontrollable and recurring thoughts that cause anxiety (obsession), and second, repetitive behaviors that are performed with the aim of reducing this anxiety (compulsive action). Patients with obsessive-compulsive disorder try to control their disturbing thoughts with the help of various strategies. The affected person feels a strong compulsion to perform actions to get rid of these disturbing thoughts, which are called obsessive actions (Cheng et al., 2019). One of the cognitive characteristics of these patients is rumination, which includes excessive emotional cognitions that lead to the continuation and aggravation of the symptoms of the disorder. Rumination is defined as persistent and recurring thoughts that revolve around a common topic. These thoughts involuntarily enter the consciousness and divert attention from the desired topics and current goals (Kiverstein et al., 2019).

In addition, in the context of exacerbating OCD, factors such as worry about making mistakes, high standards for others, need for approval, organization, lack of control, criticism, catastrophizing, detailed planning, rumination, and striving for excellence can be mentioned. (Router et al., 2013). Perfectionism is an attempt to avoid something unpleasant, and in fact, perfectionism grows to avoid uncertainty or to create control over one's environment (Mantzari, 2012). People with obsessive-compulsive disorder are tormented by an internal tendency for certainty and perfection. The lack of such absolute certainty increases the likelihood that patients will doubt whether they have performed a particular procedure correctly.

Doubts about actions and whether things have been done correctly are part of the symptoms of perfectionism in people with obsessive-compulsive disorder (Grote et al., 2015). Therefore, the characteristics of negative perfectionism are the explanation factor and the basis of the tendency towards obsession, which include the need for confirmation, worry about mistakes, parental pressure, and rumination (Pinto et al., 2017). Although these factors along with ritual behaviors are effective in reducing anxiety in the short term. However, in the long term, not only anxiety does not decrease, but a strong tendency in the need for confirmation, organization, and rumination will increase anxiety and then lead to obsessive-compulsive behavior (Grote et al., 2015). In general, it can be said that the existing views on the memory problems of patients with obsessive-compulsive disorder can be divided into three categories: In the first view, the main source of doubts of these patients is related to a general failure in memory or its sub-systems. Based on this point of view, people with obsessive-compulsive disorder face serious problems, defects and functional defects in memory. Another view holds that these individuals have memory biases and deficits only for threatening material (i.e., objects and events that are relevant to the specific subject of their obsession). Finally, the third point of view suggests that these patients do not have a problem in the field of memory, but their confidence in their memory is low, which constantly causes doubts in them (Jones et al., 2018). On the other hand, people who are involved in the process of thought-action fusion experience extreme responsibility and a lot of guilt towards their intrusive thoughts. In thought-action fusion (association between thoughts with actions or unfortunate events) it leads to a feeling of extreme perceived responsibility and experience of guilt from intrusive thoughts. Therefore, people who feel that their intrusive thoughts may harm their friends and relatives and act out, feel guilty about these thoughts (Lee et al., 2020). Various therapeutic methods have been used to reduce rumination, perfectionism, and the symptoms of thought-action fusion and its consequences, including cognitive therapy based on mindfulness. Cognitive therapy based on mindfulness has high effectiveness for the

treatment of clinical disorders and physical diseases due to the fact that they affect both physical and mental dimensions (Strauss et al., 2018). The process of mindfulness and concentration practice increases internal capacities, including tolerating, waiting and waiting in stressful situations, so that mindfulness in a person reduces negative attitudes. It can lead to a reduction of worry and negative thoughts, negative thoughts may affect a person's evaluations of his ability to solve problems, which with mindfulness-based exercises, the process of self-evaluation is done correctly and with more focus. (Kim et al., 2018).

With this introduction, the present study will be conducted with the aim of comparing the effectiveness of schema therapy and cognitive therapy based on mindfulness on rumination, perfectionism and the fusion of thought-action of women suffering from obsessive-compulsive disorder who are clients of counseling centers in Neka city. Therefore, this research seeks to answer the question "Is cognitive therapy based on mindfulness effective on rumination, perfectionism, and thought-action fusion of women suffering from obsessive-compulsive disorder who refer to counseling centers in Neka city?"

### Method

This research is practical in terms of purpose and in terms of field location and in terms of semi-experimental method with pre-test and post-test design and follow-up with the reference group. The statistical population of this research includes all the women who referred to counseling centers in Neka city in the first three months of 2019, and their number is 496. By using targeted sampling and women referring to counseling centers in Neka city in 2020, women who get the highest score in the research tool (Foua et al. (2002)) were identified. Then, based on the criteria for entering and exiting the research, 45 people are selected as sample people and then randomly assigned, 15 people are assigned to the cognitive therapy group based on mindfulness and 15 people are assigned to the control group. The entry criteria include those selected to be willing and interested in participating in the study. have obtained the required score of Fawa et al.'s (2002) obsessive-compulsive questionnaire. Be able to share their information and experiences. Not having a history of

physical disorder that involves mental effort. The people selected for the research should be between 40 and 55 years old. The exclusion criteria included absence of more than three sessions, declaration of non-satisfaction to continue cooperation by individuals and parents, those who incompletely answered the questionnaires, having a history of one of the musculoskeletal, vision, hearing diseases. In this research, two methods of data collection have been used. One of these methods is the library method and the other method is the field method. In the library method, in order to collect the information needed to collect the theoretical foundations and background of this research, the articles and books that exist in this field are used. The field method has been used to collect data to measure the variables of this research among the statistical sample.

### Materials

**1. Nalen-Hoeksma and Marrow (1991) Rumination Questionnaire:** It is a 22-question questionnaire that was designed and implemented in order to check the amount of rumination in people. This questionnaire has 22 questions and 3 components, which are: "distraction, pleasure, deep in thought". Questions 1 to 8 measure the distraction component. Questions 9 to 16 measure the goodness component. Questions 17 to 22 measure the preoccupation component. This questionnaire is scored on a five-point Likert scale: always (4), almost always (3), almost never (2), never (1). The range of scores in this test is from 22 to 88, and the total rumination score is calculated by the sum of all items. Trainor, Gonzalez and Nolen-Hoeksma (2003) have reported the alpha coefficient of this scale as 0.90 and the test-retest reliability as 0.67. Cronbach's alpha of this scale was 0.89. Cronbach's alpha obtained in the Iranian sample is reported to be 0.90 (Kaviani et al., 2005).

**2. Hewitt and Felt's Perfectionism Questionnaire (1991):** It is a 30-question questionnaire that was designed and implemented in order to check the level of perfectionism of people. This questionnaire has 30 questions and 3 components, which are: "self-oriented perfectionism, other-oriented perfectionism, society-oriented perfectionism". The scoring method of this questionnaire is based on a five-point Likert scale: I completely agree (5), I agree (4), I have no opinion (3), I disagree (2) and I completely disagree (1).

Higher scores indicate more perfectionism (Hashmi & Latifian, 2009). The range of alpha coefficients for this scale is reported between 0.74 and 0.89 (Hashmi & Latifian, 2009). Hashemi and Latifian (2008) obtained the alpha coefficient for the self-oriented and community-oriented perfectionism subscales equal to 0.80 and 0.72, respectively, which indicates the high internal consistency of the scale. In their research on a sample of 263 people, Felt and Hewitt (2006) declared the internal consistency of their scale to be acceptable. It was 0.88, 0.74, and 0.81 for self-centered, other-centered, and community-centered perfectionism dimensions, respectively. In Basharat's (2007) research, in a sample of 500 students, the Cronbach's alpha coefficient of the questionnaires for self-oriented, other-oriented, and society-oriented perfectionism subscales was reported as 0.90, 0.91, and 0.81, respectively. It indicates good internal consistency for this scale.

**3. Shafran et al.'s thought-action fusion questionnaire (1996):** The thought-action fusion scale is a self-report tool designed and built by Shafran et al. in 1996 and has 19 items. The 12 items of this scale are related to "morality of thought-action fusion" (1-12) and the next 7 items are related to "probability of thought-action fusion". This instrument is graded by subjects on a 5-point Likert scale from 1 (completely disagree) to 5 (completely agree). The range of scores of this scale is from 19 to 95, and higher scores indicate more severe thought-action fusion in the individual. Shafran and Rachman (2004) reported Cronbach's alpha of this scale and its subscales between 0.85 and 0.96. Eurolmaz, Yilmaz, and Genkoz (2004) reported Cronbach's alpha coefficient of 0.92 for thought-action fusion, 0.85 for morality of thought-action fusion, and 0.86 internal consistency for the overall scale. Gottman's

binomial reliability coefficient was reported as 0.92 for the overall scale, 0.92 for the 7 items of the probability of thought-action fusion, and 0.88 for the 12 items of the ethics of thought-action fusion. These researchers have reported the content validity of the present questionnaire as favorable. The validity of the present questionnaire in the research of Asli Azad et al. (2019) was calculated by Cronbach's alpha coefficient for the probability scale of thought-action fusion, 0.90, for the ethics of thought-action fusion, 0.89 and for the total score of the questionnaire, 0.90.

**4. Foa et al. (2002) obsessive-practical questionnaire.** This questionnaire is a self-assessment scale to evaluate the severity and symptoms of OCD in clinical and non-clinical population. This questionnaire has 18 items that are graded on a five-point scale from zero to four. This tool has six subscales of washing, obsession, accumulation, order, verification, and neutralization. 3 items are considered for each subscale. The internal consistency of the subscales was high and for different groups it was between 0.34 and 0.93. The correlation between the subscales was between 0.31 and 0.57. The correlation between the subscales and total scores was also between 0.63 and 0.80 (Foa et al., 2002). The Persian version of this tool also had an internal consistency of 0.85 for the entire scale. In addition, for the subscales of obsession, accumulation, washing, order, verification, and neutralization, 0.66, 0.69, 0.72, 0.63, 0.69, and 0.50 were obtained, respectively. (Mohammadi & Fatty, 2008).

**5. Cognitive therapy based on mindfulness:** cognitive therapy sessions based on mindfulness were implemented during eight 60-minute sessions, once a week (eight weeks) based on the protocol of McKenzie et al. (2018).

Table 1. Content of cognitive therapy sessions based on mindfulness

Session	Subject	Content
1	Automatic guidance	Getting to know the group members and their expectations, determining the group policy and explaining about depression, practicing eating raisins, practicing body check meditation.
2	Challenge with obstacles	Homework: doing one of the daily tasks with mindfulness, providing homework.
3	Mindfulness while moving	Ten minutes of mindful breathing, body check practice.
4	Staying in the moment	Homework: Bring attention to another daily activity, record pleasant events, body check and ten minutes of mindful breathing, provide homework.
5	Accept and allow	Practicing stretching movements with mindfulness, practicing conscious

		walking, practicing body inspection.
6	Thoughts are not reality	Homework: Conscious walking, body inspection, recording unpleasant experiences, submitting homework.
7	self care	Listening and thinking mindfulness practice, story of hungry tigers, three minute pause practice, body check practice.
8	Application of learning in the future	Homework: body inspection, using vehicles with mindfulness, providing homework.

**Implementation**

After obtaining the necessary permits and referring to Neka city counseling centers, the people who will meet the entry criteria and who are willing to participate in the research will be identified. Then, Fawa et al.'s (2002) obsessive-compulsive questionnaire is distributed among women. 30 women who obtained the quorum score in Fawa et al.'s (2002) obsessive-compulsive questionnaire will be selected and randomly assigned to the experimental and control groups. In the next stage, which was the pre-test, questionnaires were given to people to measure the dependent variables (pre-test). After this stage, the subjects of the experimental groups were talked to in order to participate in the treatment sessions. After completing the treatment sessions, the subjects of all three groups were examined again in terms of the dependent variable as a post-test (pre-test). After one month, the subjects of all three groups were examined again in terms of the dependent variable (follow-up). Finally, the data obtained from the pre-test and post-test were analyzed. In addition, detailed explanations were provided regarding the purpose and benefits of these meetings, non-payment of fees for the meetings, confidentiality of information and other matters raised in the meetings. After selecting the

sample people, when distributing the questionnaire, detailed explanations about how to hold and the conditions of the treatment sessions were given to them as follows: Before starting the work, written consent was received from the participants; The private and personal information of the volunteers was protected; The results were interpreted for them if desired; Participation in the research did not cause any financial burden for the participants; This research has no contradiction with the religious and cultural standards of the subject and the society. Descriptive statistics (frequency and frequency percentage and mean graph) and inferential statistics (Kolmogrov-Smirnov test and variance analysis test with repeated measurements and Bonferroni post hoc test) are used for data analysis. Spss version 24 software is used for data analysis.

**Results**

The demographic findings of the present study indicated the homogeneity of the statistical sample of the study. In Table 2, the descriptive findings of each variable of rumination, perfectionism and thought-action fusion according to the experimental and control groups in the pre-test, post-test and follow-up stages are presented.

**Table 2. The mean and standard deviation of the variables of rumination, perfectionism, and thought-action fusion of the test and control groups in the pre-test, post-test and follow-up stages.**

Stages	Group	Variable	N	Mean	SD
<b>Pre-test</b>	Control	Rumination	15	58/07	4/728
		Perfectionism	15	104/20	6/920
		Combination of thought and action	15	54/07	5/284
	Experimental	Rumination	15	61/53	5/842
		Perfectionism	15	106/20	9/002
		Combination of thought and action	15	59/40	6/243
<b>Post-test</b>	Control	Rumination	15	60/27	5/230
		Perfectionism	15	105/07	11/653
		Combination of thought and action	15	53/93	4/527

<b>Follow-up</b>	Experimental	Rumination	15	54/47	4/533
		Perfectionism	15	92/40	5/841
		Combination of thought and action	15	51/33	7/078
	Control	Rumination	15	59/73	5/405
		Perfectionism	15	103	10/156
		Combination of thought and action	15	55/27	7/535
	Experimental	Rumination	15	49/20	4/586
		Perfectionism	15	88/53	6/760
		Combination of thought and action	15	42/40	8/814

According to Table 2, it can be stated that the average scores of variables of rumination, perfectionism and thought-action fusion have changed in the experimental groups in the post-

test and follow-up compared to the pre-test, but in the control group, no noticeable changes are observed.

**Table 3. The results of the normal distribution of scores and homogeneity of variances test**

Variable	Group	K-S			Levene's test			Mauchly		
		Df	Statistics	Sig.	Df	Statistics	Sig.	Df	Statistics	Sig.
<b>Rumination</b>	Exp.	15	0/616	0/776	28	1/754	0/196	2/55	0/77	0/35
	Control	15	0/846	0/424						
<b>Perfectionism</b>	Exp.	15	0/973	0/304	28	2/33	0/18	2/69	0/91	0/27
	Control	15	0/437	0/947						
<b>Combination of thought and action</b>	Exp.	15	0/545	0/922	28	2/391	0/133	3/16	0/84	0/47
	Control	15	0/620	0/845						

According to the information in Table 3, the assumption of normality of variables is acceptable for all variables, considering probability values greater than 0.05. The results of the analysis of variance of repeated measurement of several variables among the studied groups in the variables of rumination, perfectionism and thought-action fusion showed that the effect between the subject (group) is

significant. This effect means that at least one of the groups differs from each other in at least one of the variables of rumination, perfectionism and thought-action fusion. The within-subject effect (time) was also significant for the research variables, which means that there was a change in at least one of the average variables during the time from pre-test to follow-up.

**Table 4. Analysis of variance with repeated measures to compare pre-test, post-test and follow-up of rumination, perfectionism and thought-action fusion in experimental and control groups**

Variable	Source	SS	Df	MS	F	Sig	Eta <sup>2</sup>
<b>Rumination</b>	Group*Time	760/689	2	380/344	15/240	0/001	0/352
	Group	1536/51	1	1536/51	20/17	0/001	0/42
<b>Perfectionism</b>	Group*Time	810/422	2	405/211	5/652	0/006	0/168
	Group	1475/10	1	1475/10	17/94	0/001	0/26
<b>Combination of thought and action</b>	Group*Time	1248/956	2	624/478	12/623	0/001	0/311
	Group	563/52	1	563/52	13/95	0/001	0/15

The results from Table 4 showed that the F ratio obtained in the groups factor is significant ( $p < 0.01$ ) in the dimensions of rumination, perfectionism and thought-action fusion. This finding indicates that cognitive therapy training based on mindfulness improved rumination, perfectionism, and thought-action fusion, but did not have a significant effect on coping in

them. In this regard, an analysis of variance with repeated measurements was performed for the experimental group in three stages of therapeutic intervention, where the F ratio was observed in improving the dimensions of rumination, perfectionism, and thought-action fusion.

**Table 5. The results of Tukey's post hoc test to compare the mean of pre-test, post-test and follow-up in the variables of rumination, perfectionism and fusion**

Variable	Stage	Stage	Mean diff.	Std err.	Sig
<b>Rumination</b>	Pre-test	Post-test	2/433	1/085	0/033
		Follow-up	5/333	1/380	0/001
	Post-test	Pre-test	-2/433	1/085	0/033
		Follow-up	2/900	1/381	0/045
	Follow-up	Pre-test	-5/333	1/380	0/001
		Post-test	-2/900	1/381	0/045
<b>Perfectionism</b>	Pre-test	Post-test	6/467	2/150	0/006
		Follow-up	14/433	2/141	0/000
	Post-test	Pre-test	-6/467	2/150	0/006
		Follow-up	7/967	2/266	0/002
	Follow-up	Pre-test	-14/433	2/141	0/000
		Post-test	-7/967	2/266	0/002
<b>Combination of thought and action</b>	Pre-test	Post-test	4/100	1/566	0/014
		Follow-up	7/900	2/136	0/001
	Post-test	Pre-test	-4/100	1/566	0/014
		Follow-up	3/800	1/697	0/033
	Follow-up	Pre-test	-7/900	2/136	0/001
		Post-test	-3/800	1/697	0/033

As can be seen in Table 5, there is a difference between the pre-test and the post-test and the follow-up of the rumination variable at an error level of less than 0.05. There is a difference between post-test and follow-up. There is a difference between the pre-test, post-test and follow-up in the perfectionism variable at an error level of less than 0.05. There is a difference between post-test and follow-up. There is a difference of less than 0.05 between pre-test, post-test and follow-up in the thought-action fusion variable. There is also a difference between post-test and follow-up.

**Conclusion**

According to the obtained results, cognitive therapy based on mindfulness has an effect on the rumination of women suffering from obsessive-compulsive disorder, and the fourth

hypothesis of the research was confirmed. These results are in line with the findings of Ashuri & Pourakhondi (2020), Tabatabaiejad & Ibn Yamin (2020), Abbasi and Khademlou (2017), Kim et al. (2018), Coelho et al. (2017), Brighton et al. (2016).

In the explanation above, it can be said that one of the most common anxiety disorders is obsessive-compulsive disorder, which makes people's lives difficult. The symptoms of this disorder have a significant effect on the general performance of affected people and lead to incompatibility in the family. One of the cognitive characteristics of these patients is rumination, which includes excessive emotional cognitions that lead to the continuation and aggravation of the symptoms of the disorder. Rumination is defined as persistent and recurring thoughts that revolve around a

common topic. These thoughts involuntarily enter the consciousness and divert attention from the desired topics and current goals (Kiverstein et al., 2019). Wellen et al. (2007) state that rumination is one of the main components of obsessive-compulsive disorder. Patients who engage in rumination consider it as a method that they use to gain insight into their problem and through which they focus on themselves, the problematic situation, and their feelings (Smith & Alvey, 2009). In other words, they think that rumination is useful and helps them to solve their problems, but responding to problems through rumination is associated with more problems and tension. The main features related to rumination are: Negative affect and depressive symptoms, negative oriented thinking, poor problem solving, impaired motivation and inhibition of beneficial behaviors, impaired concentration, increased stress and specific problems (for example, threatened physical health, damaged social relationships, stress and impaired emotional adjustment). In general, people naturally feel anxious in many situations in life. Anxiety behaviors are natural adaptive reactions that help a person to respond appropriately to difficult situations (Belfour, 2018). Severe anxiety with inappropriate events and situations causes problems and maladaptive behaviors (Duraes et al., 2020). The emergence of fear, doubt and excessive worry is one of the main features of anxiety and is usually accompanied by physiological symptoms that make a person constantly expect the occurrence of uncomfortable events (Abbas et al., 2019). Some people experience more anxiety and worry due to social and psychological conditions. Problems in concentration, targeted attention and maintaining moment-to-moment awareness are among the problems that people face when the level of stress is high (Harma & Sommer, 2016). In recent years, actions and interventions in the field of mindfulness have become increasingly popular and have attracted a lot of attention, so that mind-based training has found its place as a complementary treatment alongside other physical and psychological treatments. Mindfulness is one of the styles of meditative exercises that refers to the ability to have a non-judgmental experience of existing reality. Mindfulness helps people accept their emotions as they happen (Sahib

Keshaf & Farhani, 2019). People with anxiety thoughts who are suffering from certain mental and emotional problems. As a result of this training, they learn to accept their physical and psychological feelings and symptoms, and by controlling their thoughts and emotions and accepting these feelings, their quality of life and positive emotions improve (Mass et al., 2018). With the increase in mindfulness, people's emotion regulation and self-management power increases and they are able to directly regulate the emotions caused by anxious thoughts, which changes their life level as a result (Sahib Keshaf & Farhani, 2019). Mindfulness can promote deeper awareness and emotional management of feelings and thoughts, reduce stress, and improve health (Griffiths & Auerbeck, 2016). With the method of mindfulness, a person learns to pay attention to situations in a specific and purposeful way without judgment, and learns to be aware of his mental state every moment and to focus his attention on his different mental states (Pris-Blockshear et al., 2016). This non-judgmental and intentional attention to the present moment helps the injured person not to fall into the trap of negative emotions caused by the bitter experience of the spouse's extramarital relationship. Forgiveness is the process of voluntarily renouncing the right to be angry and disgusted by a harmful act (Pepping & Halford, 2016). Teaching the mental management skills program to therapy seekers leads to expanded metacognitive awareness of the content of unpleasant thoughts and emotions, acceptance of negative thinking patterns about different people, and more useful reactions to these experiences (Griffiths & Auerbeck, 2016). During the treatment program, people with anxious thoughts learn to stop focusing on negative thoughts and feelings and allow their mind to switch from automatic thinking pattern to conscious emotional processing. In these approaches, instead of trying to correct behaviors and emotions by changing dysfunctional cognitions and beliefs, the therapist is taught to accept his emotions in the first step and to enjoy more psychological flexibility by living here and now. For this reason, in this group of treatments, cognitive techniques, traditional behavior and mindfulness are combined. Mindfulness-based intervention can increase the effectiveness of the intervention by reducing the symptoms and



consequences of anxiety due to attention to concepts such as acceptance, increasing awareness, desensitization, presence in the moment, non-judgmental observation, confrontation and release. In general, it can be said because mindfulness is a non-judgmental and balanced feeling that helps to accept emotions and physical phenomena as they happen. Therefore, teaching it in anxious people who have more rumination helps them to accept their feelings and psychological symptoms and reduce their attention and excessive sensitivity to its symptoms.

According to the obtained results, cognitive therapy based on mindfulness has an effect on the perfectionism of women suffering from intellectual-practical obsessions, and the fifth hypothesis of the research was confirmed. These results are in line with the findings of Dehghan Manshadi et al. (2021), and Sattari and Erfani (2019).

In the explanation above, it can be said that perfectionism means having ambitious, ambitious, vague and unattainable goals, as well as having extreme efforts to achieve goals. The main characteristic of perfectionists is that they see everything as either black or white, and for them there is no middle ground or so-called gray (Sasaroli et al., 2008). The main problem in this field is that perfectionist people are always looking for the best and most perfect solution and they always want to have or do everything in high standards, and if they can't reach such standards, they consider themselves complete failures. (Mantzari, 2012). Perfectionism plays an important role in the pathology, etiology and persistence of mental disorders, including obsessive-compulsive disorder (Boisivo et al., 2013). At the clinical level, obsessive-compulsive disorder is associated with intrusive thoughts that produce anxiety, apprehension, fear and worry and perform ritualistic behaviors to reduce anxiety. Meanwhile, the strong tendency to need confirmation, organization and rumination, which are important components of perfectionism, are the main symptoms in people with obsessive-compulsive disorder (Sohrabi et al., 2020). A person with obsessive-compulsive disorder may spend hours doing something. However, because he thinks that he should do his job perfectly and flawlessly, he never gets the desired result and this cycle continues. That is, the obsessive person gets involved in the

cycle of trying to achieve the best result and the thought that I still haven't been able to do my work well (Bernert et al., 2013). Therefore, it can be said that the component of perfectionism is one of the most important aspects and main symptoms of obsessive-compulsive disorder, which should always be viewed as a foundation, continuation and treatment (Sasaroli et al., 2008). Cognitive therapy based on mindfulness has high effectiveness for the treatment of clinical disorders and physical diseases due to the fact that they affect both physical and mental dimensions (Strauss et al., 2018). The process of mindfulness and concentration practice increases internal capacities, including tolerating and waiting in stressful situations. Mindfulness in a person reduces the negative attitude that can lead to the reduction of worry and perfectionism, perfectionism may affect the evaluation of a person's ability to solve his problems. With exercises based on mindfulness, the process of self-evaluation is done correctly and with more focus.

According to the obtained results, cognitive therapy based on mindfulness has an effect on the fusion of thought-action of women suffering from obsessive-compulsive disorder, and the sixth hypothesis of the research was confirmed. These results are in line with the findings of Asli Azad et al. (2019). In the above explanation, it can be said that thought-action fusion refers to beliefs in which thoughts and actions are inseparably connected to each other. Thought-action fusion is a psychological phenomenon in which obsessive thoughts and their associated actions are considered equivalent (Jones et al., 2018). The structure of thought-action fusion includes two main dimensions: probability thought-action fusion and moral thought-action fusion. The thought-action dimension of likelihood reflects a person's belief that thinking about an unacceptable event increases the likelihood of its occurrence; For example, a woman who has intrusive thoughts about her husband's accident feels that these intrusive thoughts increase her risk of having an accident. In fact, by having such a thought, he has put his wife in front of this danger and feels responsible for preventing it, sometimes he tries to neutralize it mentally (Lee et al., 2020). The combination of moral thought and action means having obsessive thoughts about prohibited actions and actually performing these actions are morally equivalent

to each other; For example, a mother who has intrusive thoughts about harming her child feels as morally responsible for having such thoughts as for actually harming her child. This mother feels that such thoughts reveal her true nature and since only vile and criminal people have such thoughts, she is also a vile and sinful person for having such thoughts (Asli Azad et al., 2019). When a person believes that the probability of a negative event for himself or others increases by knowing the thought of that event, he considers himself responsible for the occurrence of that risk and starts performing obsessive rituals to prevent the risk he thinks. (Lee et al., 2020). Patients with obsessive-compulsive disorder imagine that their thoughts about unfortunate events for others and themselves increase the probability of these events occurring. Because of having such thoughts, these people consider themselves responsible for the occurrence of unfortunate events and try to prevent them from happening. Thought-action fusion leads to an increase in strong responsibility, shame and guilt in the individual (Kay et al., 2017). Mindfulness-based interventions are considered as one of the third generation or third wave cognitive-behavioral therapies. Mindfulness is a type of meditation that is rooted in Eastern religious teachings and rituals, especially Buddhism (McKennes et al., 2018). Mindfulness requires the development of the three components of refraining from judgment, purposeful awareness, and focusing on the present moment in one's attention, which causes focused attention on the present and processing of all aspects of immediate experience, including cognitive, physiological, or behavioral activities. (Hatami et al., 2015). Through exercises and techniques based on mindfulness, a person becomes aware of his daily activities, he becomes aware of the automatic functioning of the mind in the past and future world. Through moment-to-moment awareness of thoughts, feelings, and physical states, one gains control over them and is freed from the everyday and automatic mind focused on the past and future (Parsons et al., 2017). Mindfulness can help free people from automatic thoughts, habits, and unhealthy behavior patterns, and therefore plays an important role in regulating behavior. Therefore, emphasis is placed on changing awareness and creating a new relationship with

thoughts compared to changing them (Hatami et al., 2015). Cognitive therapy based on mindfulness can be considered a suitable approach in the treatment of psychological components of a person with psychological injuries (Broumand, 2018). It can be said that cognitive therapy based on mindfulness by increasing people's cognitive and metacognitive awareness causes them to gain more ability to control, manage and monitor their thoughts and behavior and experience higher self-regulation (Parsons et al., 2017). Based on this, it can be said that doing exercises based on mindfulness increases a person's awareness of himself, others and situations in the present time, instead of the past and the future. In this way, people with obsessive-compulsive disorder learn that every moment, with a new look at themselves and the environment, they differentiate between themselves and the environment through compromised responses instead of quick reactions to situations, and in this way, errors are created between thought and action. This process allows these people to separate themselves from the entanglement of thought and action. In addition, one of the main learnings of cognitive therapy based on mindfulness is gaining awareness of thoughts, feelings and bodily sensations without judgment and intertwining with them. Therefore, by obtaining this treatment, people suffering from obsessive-compulsive disorder get away from interweaving with their thoughts and create a boundary between their thoughts and actions.

The limitations of the research include the following: The results of this research may change in different gender contexts. Due to the spread of the corona virus, the researcher has faced difficulties in the implementation of the research. Among other limitations of the current research, we can mention the voluntary participation in the group. The research design of this study is a semi-experimental design and the most important task of the research design is the control of interfering substances. Since the quasi-experimental design has low control power compared to the experimental design, it can be said that this design does not have high internal validity, and therefore, all the changes in the dependent variables cannot be attributed to the independent variables.

It is suggested that those counselors who work in the field of reducing the problems and mental

disorders of women suffering from obsessive-compulsive disorder should use the beneficial effects of cognitive therapy based on mindfulness. It is suggested to prepare appropriate programs on radio and television for the effectiveness of promoting and knowing more about this approach and for people to know their behavior. It is recommended that counselors and cultural planners in the family field expand cognitive therapy interventions based on mindfulness in order to increase the awareness of people and especially women with obsessive-compulsive disorder in this field. It is suggested to reduce the incidence of rumination among women through cognitive therapy based on mindfulness. Considering that this research was conducted on women suffering from obsessive-compulsive disorder, it is suggested to investigate the effectiveness of these variables on men suffering from obsessive-compulsive disorder. 2. It is suggested to use interviews to conduct this research in future researches. The length of the follow-up period should be increased to six months and above so that the treatment results can be generalized more strongly. Since the subjects were interested in participating in this treatment, the question arises as to what extent their voluntary participation and high motivation has affected the effectiveness of these methods. Therefore, it is suggested that future research and studies be conducted in different populations.

#### Conflict of Interest

According to the authors, this article has no financial sponsor or conflict of interest.

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