

## Abstract

**Objective:** The present study was an attempt to examine the effectiveness of group mindfulness based cognitive therapy in reducing depression and obsessive rumination among women under methadone treatment. **Method:** A quasi-experimental research design along with pretest-posttest design and a control group was employed to conduct this study. Considering the inclusion criteria, a total of 24 female substance abusers who were under methadone treatment were selected from Omide Farda and Javeneh Sabz clinics in Mashhad via purposive sampling method. The experimental group received eight training sessions of mindfulness-based group cognitive therapy, while the control group did not receive any intervention. Two scales, namely obsessive rumination scale and Beck's depression questionnaire were used for data collection purposes. **Results:** Results of analysis of covariance showed that group mindfulness-based cognitive therapy has reduced obsessive rumination and depression scores. **Conclusion:** Mindfulness-based group cognitive therapy can be included in intervention programs for substance abusers.

**Keywords:** Mindfulness-Based Cognitive Therapy, Obsessive Rumination, Depression, Addicted Women under Methadone Treatment

# The Effectiveness of Mindfulness-Based Group Cognitive Therapy in Reducing Depression and Obsessive Rumination among Women under Methadone Treatment

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## Introduction

In contrast to the past decades that drug abuse was limited to men, drug addiction is one of the women's hygienic, therapeutic and social problems in recent times. Not only do women's addiction lead to severe and fundamental physical and mental problems, but it also causes social damages such as an increase in divorce, crime, unemployment and prostitution (As'adi, 2001). One of the areas directly influenced by addiction is the addicts' mental health. There is at least one psychological disease in narcotics addicts in a such way that 85 percent of these people are suffering from different personality disorders and 65 percent are struggling with Axis I disorders (Narimani & Rajabi, 2013). A common syndrome of psychological pathology among addicts is depression. Depression disorder and anxiety, to some extent, play a role in addiction and affect the patients' mental and physical dysfunction and quality of life, in a sense that many sufferers tend to use drug and alcohol in an effort to avoid these unpleasant conditions (Vernig & Orsillo, 2009). On the other hand, in etiology of drug abuse disorders, researchers have reported a defect in emotion regulation, low distress endurance, thoughtless behavior and rumination (Blume, 2005). One of the major variables in depression is obsessive rumination (Wathkinz & Baracaia, 2001). Rumination is defined as recurrent and resistant thoughts over a matter. These thoughts penetrate into the consciousness involuntarily and draw the attention away from intended matters and immediate objectives (Joormann, 2006). In minor or major depression, the individual is involved in rumination on negative issues. Wathkinz & Moulds (2005) relate rumination to feelings of sorrow and refer to it as rumination on sadness. Rumination usually provides a mechanism which turns to dangerous grounds for depression and, in fact, leads to an increase in pressure and severer neurosis and decreases social support and optimism (Nolen-Hoeksema & Davis, 1999). Rumination makes the depressed patients' mental-cognitive infrastructure dissonant and correlates with psychological incompatibility and escalation of negative feelings such as anger and mental pressure (Wenzolf and Wehner, 2000). The studies on cognitive models of depression outlined the role of rumination as risk factors of depression (Lo, Ho & Hollon, 2008; Roelof, Huiber, Peerters & Arntz, 2008). Hyde, Mezulis & Abramson (2008) refer to rumination as one of the cognitive components of depression. Donaldson, Lam & Mathews (2007) have also suggested that depression is accompanied by an intentional bias to negative information with the aim of self-assessment, which this negative bias is reinforced in patients with rumination. The response of rumination to a poignant experience extends and exacerbates the depressed mood periods. Moreover, rumination makes people's thoughts be negatively oriented and causes a decrease in the individual's problem-solving ability (Wisco, & Lyubomirsky, 2008). Various therapeutic methods have so far been used for the treatment of drug addicts' depression and rumination, examples of which are

multi-systemic therapy (Stanlye, 2011), cognitive-behavioral therapy for suicide prevention (Stanlye, 2011), fan-based therapy (Donaldson et al., 2007), Supportive relation (Hyde et al., 2008), dialectical behavioral therapy (Hashemi, Aliloo & Hashemi, 2011) and metacognitive therapy (Hashemi et al., 2011). In recent years there has been a major change in treatment of these problems as new patterns like Mindfulness Based Cognitive Therapy have been formed (Finucane & Mercer, 2006). Mindfulness based cognitive therapy originates from extensive study in the area of recognition of predictive cognitive processes causing the relapse into depression (Crain, 2009). This treatment method is a promising sign in advancement of the cognitive-behavioral approach for depression treatment because mindfulness training along with metacognitive acquisitions and behavioral strategies lead to developing new thoughts, decreasing unfavorable emotions and reducing rumination and distressing responses (Carighead, 2003). Mindfulness refers to an effortful conscious controlled processing status which is the opposite point of inattention (Bishop, Lau, Shapiro, Carlson & Carmody, 2004). Mindfulness has two basic components. The first is controlling attention so that attention is focused on the immediate and instant experience and as a result the possibility of identification of current mental events increases; the second is the adoption of curiosity orientation, openness and acceptance of current experiences of the self (Barnhofer, Crain, Hargus, Amarasingh & Williams, 2009). Mindfulness based cognitive therapy integrates the concept of mindfulness with the principles of cognitive behavioral theory. This approach embraces elements of the cognitive therapy which separates the self from one's thoughts; for instance remarks such as "thoughts are not realities" and "I am not my thoughts". Mindfulness based cognitive therapy has been designed to lessen the relapse into depression, so that people learn how to observe their thoughts and reflections without judgment and watch them simply as mental recurrent events which some of their aspects do not necessarily present the reality. In this approach, individuals learn how to avoid the pitfalls of their rumination patterns. (Teasdale et al., 2002; quoted in Omid & Mohamadkhani, 2009). Some studies have demonstrated the effectiveness of mindfulness based cognitive therapy on the mental wellbeing, anxiety and depression (Grossman, Tiefenthaler-Gilmer, Raysz, & Kesper, 2006), suicide prevention (Williams, Duggan, Crane & Fennell, 2006), pain tolerance, mental health (Kingston, Chadwick, Meron and Skinner, 2007), declining in physical and mental symptoms of patients suffering from Rheumatoid Arthritis (Pradhan, Baumgarten & Langerberg, 2008), decreasing the syndromes of mental-practical obsession (Fairfax, 2008), decreasing rumination and depression (Dimidjian et al., 2014; Mckim, 2008; Paul, Stanton., Greeson, Smoski & Wang, 2012), and reducing temptation to use drug (Edward, 2010; Khanna & Greeson, 2013).

Considering the above-mentioned points, it appears that mindfulness based cognitive therapy could contribute to a reduction in rumination and depression of female drug addicts. Therefore, the objective of the present study is the

investigation of mindfulness based cognitive therapy on decreasing rumination and depression of addicted women under methadone maintenance treatment.

## **Method**

### **Population, sample, and sampling method**

This study which in terms of objective falls into category of applied research, used a quasi-experimental design with pretest-posttest and a control group. The statistical population included the women who referred to Omid-e-Farda and Javane Sabz rehabilitation centers in Mashhad from September 2012 to September 2013 for addiction treatment. A sample of 30 individuals were selected by purposive sampling, considering the inclusion criteria (perception of diagnosis of major depression, failure to perceive a diagnosis of personality disorder based on a structured diagnostic clinical interview, minimum education of diploma, no history of psychosis, no use of anti-psychosis drugs, passing at least one week from their successful detoxification). Then the subjects were asked to express their consent to participate in the research in written and verbal forms and the selected sample was put in two groups by random replacement; so that in the first place there were 15 subjects in each group. In the course of intervention 3 participants left the research experimental group and were not post-tested. Also, 3 participants were out of the researcher's reach in the post test and excluded from the study; therefore, eventually the number of members in each group was reduced to 12 and the final analysis was done on these members.

### **Instrument**

1. Beck Depression Inventory: the questionnaire was first introduced by Beck in 1961, revised in 1971 and published in 1978. It generally contains 21 items concerning different symptoms and the subject is asked to rate each item on a scale of 0 to 3. The questionnaire is a self-evaluation test and takes 5-10 minutes to finish. To understand the items, primary school education suffices. The scores range from 0 to 63. The internal consistency coefficient was reported to range from 0.73 to 0.93 with the mean of 0.86, and test-retest reliability coefficient via intervals of run times and type of population is in range of 0.48 to 0.86. The result of the tests of content and concurrent validity, and discriminant factor analysis is reported to be generally favorable. The items of the questionnaire have been designed based on the clinician's opinions about the symptoms of depression with considerations regarding the Manual of Mental Disorders-IV. In addition, this questionnaire demonstrates a moderate correlation with other scales assessing depression such as Hamilton Depression Scale (0.71), The Beck Depression Inventory (0.68) and Depression, Anxiety, Stress Scale (0.88) (Marnart, 2008). The scale reliability by internal consistency was reported 0.78

and by test-retest 0.73. (Hanasab Zade Esfahani, Yekeh Yazdan Doost, Gharaei & Asghar Nejad, 2010).

2. Ruminative scale Questionnaire: the scale was developed by Nolen-Hoeksema & Morrow (1991) and assesses four different kinds of reactions to negative mood. Response Style Questionnaire is comprised of Ruminative Response Scale and Distractive Response Scale. Ruminative Response Scale includes 22 items which participants are asked to rate on a scale of 1(never) to 4(always). Based on the empirical evidence, this scale has a high internal consistency with Cronbach's alpha coefficient ranging from 0.88 to 0.92 and test-retest reliability coefficient of 0.67. The scale has been validated and translated to Farsi by Bagheri Nejad, Salehi Fadardi and Tabatabaei (2011). The coefficient of correlation between this scale and the scores of depression and anxiety in a sample of Iranian students came out 0.63 and Cronbach's alpha was 0.88.

3. Structured Clinical Interview for Disorders: this is a structured clinical interview developed by Spitzer et al. for assessment of various kinds of disorders Axis I and II. All the areas of this clinical interview are according to specific criteria of DSM for different disorders. Because of its comprehensiveness and compliance with DSM criteria, this instrument is more reliable than clinical scales and is considered as a standard comprehensive diagnostic means of assessment in research, legal and clinical contexts. The reported reliability of the instrument ranges from 0.81 to 0.84 and Sharifi et al. (2005) reported a moderate to fair diagnostic agreement for that in Iran (quoted in Imani et al, 2014).

### Procedure

After preparation of intervention program, all the subjects selected as a sample were invited and informed of the start time and date. Before the implementation, the training package, which was written based on the book Mindfulness Based Cognitive Therapy by Rebecca Crane (2009), was confirmed by two professors of psychology and piloted to a group of three and limitations were eliminated. The procedure for presenting the materials in every session was first a review of the contents of the previous session followed by presentation of new contents. The content of the sessions is presented in the table below.

**Table 1. The sessions of mindfulness based cognitive therapy**

<i>session</i>	<i>Content</i>
<b>First session</b>	Before starting, the therapist and his colleagues made their acquaintance with the group members and they were informed of the research-based nature of the study. In this session all 8 sessions were explained to members in nutshell followed by an explanation of the relationship between addiction and its side effects and emotional problems, in particular depression and rumination. Then, the members' objectives and expectations of the treatment were specified. At last, body scan meditation was taught and practiced followed by presentation of meditation assignment for home, body scan meditation, and eating with mindfulness.

<i>session</i>	<i>Content</i>
<b>Second session</b>	The second session started by reviewing the previous session assignments and obstacles to its implementation and afterwards the ways of overcoming the barriers were explained. Then body scan meditation and breathing with mindfulness were practiced and thinking about the practices followed. As an assignment, body scan meditation and 3-minute breathing space with mindfulness and directing attention to daily routine such as brushing the teeth with focus and consideration were presented.
<b>Third session</b>	The content of the third session included physical postures with mindfulness; therefore, starting with 3-minute breathing space it was followed by sitting meditation, and members came to realize the wandering mind through body scan and breathing. Then, there was a discussion of unpleasant daily experiences. And finally, the training pamphlets were handed out; and 3-minute breathing with mindfulness, and logging the pleasant daily events was assigned for the first, third and fifth days of the week.
<b>Forth session</b>	This session was to teach how to stay in the present. It started by 45-minute body scan followed by 5-minute watching or hearing with mindfulness. Then there were a discovery of unpleasant experiences, definition of chronic and severe fatigue causing from depression. The next was a practice of 3-minute breathing for the conditions that one experiences hard feelings. The home assignment were sitting meditation and walking with mindfulness.
<b>Fifth session</b>	The fifth week started by acceptance with sitting meditation. Then there was 3-minute breathing and acceptance and discovery of thoughts and feelings and creating a new relationship different from the experiences. Sitting meditation and 3-minute normal breathing was assigned for home practice.
<b>Sixth session</b>	In this week, the reflections with no true origin were considered and the subjects' problems and their emotions they involve in while doing the assignments were reviewed. Then, there were a 45-minute body scan and review of the discussion on the unreal reflections. The assignments were 3-minute sitting meditation, bringing the daily experiences to awareness, and working on a personal relapse prevention plan.
<b>Seventh session</b>	The seventh session taught how to best take care of ourselves by sitting or 4-dimension meditation. It was followed by exploring the relation of the mood and activity, and preparing a list of favorable daily activities and those which arouse unfavorable feelings in the individual. Then, there was a discussion on how to increase the useful activities and to avoid those which cause a recurrent relapse. Finally, 3-minute breathing and a statement of a problem and exploring its effect on the mind and the body followed. The assignments were 3-minute breathing space for a pleasant event and mindfulness of a new daily routine.
<b>Eighth session</b>	This session started by a 45-minute body scan and 3-minute breathing. Then, whatever that is learned in the classes were reviewed. And finally, some questions were raised with regard to all the sessions such as whether the participants' expectations have been fulfilled.

## Results

In the experimental and control group, 66.7 percent, 16.7 percent, 8.3 percent and 8.3 percent of the members were married, single, widowers and divorced respectively. In the experimental group, 83.3 percent had diploma degrees, 8.3 percent held associate degrees, and 8.3 percent held masters/bachelor's degrees. In the control group, all members had diploma degrees. The mean of the participants' age in the experimental group was 30.92 and in the control group was 33.2 years. The mean of the subjects' duration of drug abuse in the experimental group was 8.28 and in the control group was 8.66.

The descriptive statistics of the variables by the scales and groups have been presented in the table below.

**Table 2. Descriptive statistics of the variables by the scales and groups**

Variable	Group	Number	Pretest		Posttest	
			Mean	SD	Mean	SD
Depression	Experimental	12	21.43	3.14	16.54	3.22
	Control		19.87	3.46	19.03	3.66
Rumination	Experimental	12	79.13	6.54	74.12	7.15
	Control		78.11	5.98	77.87	7.11

To investigate the effectiveness of group mindfulness based cognitive therapy on decreasing the participants' rumination and depression, Multivariate analysis of covariance was used. Before running the analysis, the assumption of homogeneity of variances was tested. The result of Levene's test shows that the data did not violated the assumption both in depression variable ( $F=1.396$ ,  $P>0.05$ ) and in rumination ( $F=3.313$ ,  $P>0.05$ ). The assumption of equality of covariance matrices was checked by Box's test, which the result showed that the assumption has been met ( $F=0.78$ ,  $P>0.05$ ). The result of multivariate analysis suggest a significant difference in the linear combination of variables (Wilks'  $\Lambda=0.452$ ,  $F=2.93$ ,  $P>0.01$ ). To investigate the difference in patterns, univariate analysis of variance was used as below.

**Table 3. The results of univariate analysis of variance representing difference in patterns**

Variable	df	F	Sig.	Size effect	Eta Squared
Depression	1	7.967	0.009	0.235	0.776
Rumination	1	8.074	0.009	0.237	0.781

As it is observed, mindfulness based cognitive therapy has caused a decrease in depression and rumination scores.

## Discussion and Conclusion

The present study aimed at investigating the group mindfulness based cognitive therapy on the reduction of rumination and depression of female drug addicts under methadone maintenance treatment. Findings suggest that

participation in sessions of group mindfulness based cognitive therapy leads to a decrease in the addicted women's rumination and depression. The findings are in line with Kingston et al. (2007), Williams et al. (2006), Fairfax (2008), Pradhan et al. (2007), Grossman et al. (2007), Mckim (2008), Paul et al. (2012), Dimidjian et al. (2014), Edward (2010), Khanna & Greeson (2013). The above-mentioned studies indicate to the positive effects of mindfulness based cognitive therapy on decreasing rumination, automatic thoughts underlying depression, depression symptoms and temptation to use drug. A decrease in depression symptoms along with raising the level of mindfulness proposes a relationship between mindfulness and depression and confirms those research findings that suggest a negative correlation between mindfulness and depression. In this regard, Barnhofer et al.'s (2009) study shows that mindfulness correlates with lower anxiety levels and increased wellbeing. Conscious awareness (as one dimension of mindfulness) plays a role in severity of depression. High scores of self-reported conscious awareness relates to less severe self-reported symptoms of depression (Crane, 2013). Jimenez's (2005) study also demonstrates a negative direct correlation between mindfulness and rumination and symptoms of depression (quoted in Fairfax, 2008). The studies show mindfulness based therapy causes a decrease in depression symptoms and supports the existence of such a relationship. A plausible explanation for these findings is that mindfulness based cognitive therapy integrates the interventions related to cognitive behavioral therapies which is based on the principle of "change" with teachings and techniques of Zen's eastern philosophies which is based on the principle of "acceptance", and on this account, it proposes effective interventional methods which could be used in group therapy. The first and one of the most important factors of change in mindfulness based cognitive therapy is the basic mindfulness. Basic mindfulness whose infrastructure is built on acceptance of unfavorable experiences and different emotional states, significantly raises the individual's ability to control the impressibility of his thoughts and emotions, and allows the individual to experience a wide spectrum of thoughts and emotions in his mind without experiencing emotional turmoil. Moreover, while facing the automatic thoughts which in case of having emotional load turn to rumination, basic mindfulness with its high potential to reduce anxiety and stress and to raise focus, causes the individual to keep his emotional stability and not pay unnecessary attention to the annoying thought but watch the thought passing by his mind. This capability prevents the automatic thoughts to develop excessive obsession that they used to bring about, and to turn to rumination (Teasdale et al., 2009).

Mindfulness based cognitive therapy helps the individuals go beyond their patterns of rumination with the aid of variables like increased peace and inner consciousness and through mindfulness techniques, decreasing negative emotions related to unfavorable thoughts and feelings, increasing distress tolerance, training the identification and replacing of inefficient and negative

beliefs and raising people's awareness. In addition, it helps the individual take better cognizance of the forces related to the relapse of the disease in his mental and physical processing, change his cognitive and processing system, prevent his thoughts and emotions to agitate him, realize the antecedent symptoms of his unfavorable thoughts, increase his tolerance and prepare to face them. This causes the individual to be able to lower the effect of negative thoughts on his mood and not to experience depression in the presence of negative automatic thoughts. On the other hand, along with mindfulness, the individual within himself establishes a framework with the behavior of kindness, curiosity and the satisfaction of being in the present moment. Eventually, with true understanding, one realizes that although suffering is part of our experience, there are ways we can develop new habit patterns and contemplate them (Crane, 2013). In general, the findings show that mindfulness based cognitive therapy results in a decrease in rumination and depression of addicted women under methadone maintenance treatment. The results of the present study and the previous researches support the conclusion that intervention and methods of mindfulness based cognitive therapy could improve the mental health of the female addicts who are under the methadone maintenance treatment. One limitation of the study is that the results could not be generalized to male addicts. The other is the limited access to a larger sample which caused the researcher not to compare the effectiveness of this method to another intervention. Another limitation is the lack of long-term comparison as a follow-up measure that limits the conclusions about sustainability of outcomes. It is suggested that researchers compare and contrast this method with other cognitive-behavioral strategies and investigate the effectiveness of this method in drug use temptation and decrease of the relapse into drug abuse.

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