



Effectiveness of Mindfulness-Based Cognitive Therapy on Reducing Smoking among Addicts

Homa Shahyar,¹ and Farhad Jomehri^{2,*}

¹General Psychology, College of Humanities and Social Sciences, Islamic Azad University, Science and Research Branch, Tehran, Iran

²Assistant Professor, Department of General Psychology, College of Psychology and Education, Allama Tabatabai University, Tehran, Iran

*Corresponding author: Farhad Jomehri, Assistant Professor, Department of General Psychology, College of Psychology and Education, Allama Tabatabai University, Tehran, Iran. E-mail: jomehri.fs@gmail.com

Received 2016 April 27; Accepted 2017 April 17.

Abstract

Background: Substance abuse is one of the most important problems nowadays that has found the world range. A disaster that destroys millions of lives, and big national funds are spent to fight or compensate its damages.

Objectives: This study was conducted with the aim of examining the effectiveness of mindfulness-based cognitive therapy on reducing smoking among addicts in Tehran.

Methods: The method used in this study in terms of the applied purpose and data collection, was quasi-experimental design with pretest-posttest group and control group. Statistical population of the present study consisted of all male smokers aged 20 to 40 years living in Tehran, who had been referred to the stop smoking clinic in Tehran municipality and Javanmardan park for treatment. Convenience sampling method was used to choose samples from statistical population. In this way, 30 persons who smoked cigarette daily were chosen and referred for treatment; they were randomly divided into one experimental group and one control group. Thus, 15 persons were randomly assigned to the control group and 15 ones to the experimental group (mindfulness). The Self-made questionnaire for smoking rate was used in this study. Using SPSS software, obtained data from questionnaires were analyzed and divided into two parts, descriptive and inferential.

Results: According to the obtained results, there was a significant difference between the experimental and control groups ($P < 0.05$). The results showed that mindfulness is effective in reducing smoking in the persons aged 20 to 40 years.

Conclusions: Based on the findings of this study, it can be stated that some solutions should be considered in order to conduct the mindfulness-based cognitive therapy in counseling centers.

Keywords: Mindfulness, Cognitive Therapy, Smoking, Addiction

1. Background

Substance abuse is one of the most important problems nowadays that has found the world range. A disaster that destroys millions of lives, and big national funds are spent to fight or compensate its damages. The number of drug use victims is increasing every day and its complications include physical, psychological, familial, cultural, social, and economic disorders that are a threat to the human health (1). One of the most important preventable causes of premature death in the world is smoking (2). Despite the complexity of interventions designed to stop smoking, most people confront with difficulty for stopping. So, it is essential to use special techniques for stop smoking (3).

Various treatment techniques effect stopping the drug use, one of these techniques is mindfulness. Mindfulness is the main technique used in Buddhist meditation that is rooted in the mentioned religion. The foundations of this

concept can be traced in the most ancient Buddhist texts, Mindfulness is recognized as a target of meditation religions especially Buddhism (4). And it is defined as a state of the excited attention and awareness of what is happening at the present moment (5) and also it emphasizes on the refrain from judgment, targets awareness and focuses on the present moment in the individual attention.

Mindfulness technique is going to help client through mental training not only in the change of functional and clinical course of the clients' mind but also in the change of performance and relationship (6). Mindfulness involves special behavioral, cognitive and meta cognitive strategies to focus attention process which in turn leads to avoidance of negative thinking and mood causes, tendency to worrying responses and growing of new sight and formation of opinions and pleasant emotions (7). In other words, mindfulness means being in the present moment, without

judgment, without commenting on what is happening; it means experience of sheer reality without explanation (7).

Mindfulness, due to its underlying mechanisms, such as acceptance, increasing awareness, desensitization, being in the moment, observation without judgment, confront and release in conjunction with traditional cognitive behavioral therapy techniques because of the impact for the process can help reducing the symptoms and consequences after stop smoking, increasing the effectiveness of treatment and prevention of relapse. Results of the researches carried out by Pakizeh and Nazari (2015), Dehghani Firuzabadi et al. (2013), Hamed, Shahidi and Khademi (2013), Golpour Chamarkuhi & Mohammad Amini (2011), Ahmadvand, Heydari Nasab & Shaeiri (2011), Narimani, Ariapour, Abolghasemi & Ahadi (2010), Witkiewitz, Bowen, Douglas, & Hsu (2013), Sauer, Walach and Kohls (2011), CaldwellKingeston, Chadwick, Meronc, & Skinner(2010) and Kingeston, Chadwick, Meronc, and Skinner (2007) have also shown that mindfulness-based cognitive therapy is effective in drug addicts (8-17).

Further scientific studies are needed to show the use of mindfulness in reducing smoking and high rates of substance abusers in Iran. Accordingly, the researcher wants to answer this question: Whether mindfulness-based cognitive therapy is effective in reducing smoking among male smokers?

2. Objectives

This study was conducted with the aim of examining the effectiveness of mindfulness-based cognitive therapy on reducing smoking among addicts in Tehran.

3. Methods

The method used in this study in terms of the applied purpose and data collection was quasi-experimental design with pretest-posttest group and control group. Statistical population of the present study consisted of all male smokers aged 20 to 40 years living in Tehran, who had referred to the stop smoking clinic in Tehran municipality and Javanmardan park for treatment. Convenience sampling method was used to choose samples from the statistical population. We used convenience sampling method because it allowed us to receive basic data without any complications of using another version of randomized sampling method. In this way, 30 persons who smoked cigarette daily were chosen and referred for treatment; and they were randomly divided into one experimental group and one control group. Thus, 15 persons were randomly assigned to the control group and 15 persons to the experimental group (mindfulness). Meanwhile, content validity

was used to test the validity of the questionnaire; therefore, the questionnaire was confirmed by relevant experts.

The tools for data collection listed as follows:

3.1. Self-Made Questionnaire for Smoking Rate:

This questionnaire has been defined based on Likert scale that 5 means too much smoking, 4 means heavy smoking, 3 means the average consumption of cigarettes, 2 means low consumption of cigarettes and 1 means very low consumption of cigarettes. Thus, the number 5 means the consumption of more than 25 cigarettes per day, the number 4 means the consumption of 15-20 cigarettes per day, the number 3 means the consumption of 10 - 15 cigarettes per day, the number 2 means the consumption of 5 - 10 cigarettes per day and the number 1 means the consumption of lower than 5 cigarettes per day. So, those who had a higher score were reported with more consumption of cigarettes. In the present study, the Cronbach alpha was higher than 0.70 and this means that the questionnaire has a reliability to measure the smoking rate.

3.2. Summary of Therapy Sessions Contents

Mindfulness-based cognitive therapy was taught in 8 sessions. Each session training lasted an hour and a half (18).

Descriptive and inferential statistics were used to analyze the data in this study. In the descriptive statistics, frequency tables and graphs were used to display better information. Non-parametric tests such as Wilcoxon were used to test hypotheses in inferential statistics. Due to the reason that examining the effectiveness of the independent variables on the dependent variable was in ordinal scale, nonparametric tests were applied to this study.

4. Results

Frequency distribution of the sample in this study is presented in the Table 2.

As can be seen from Table 2, range of 20 - 25 age group has the most frequency and 34 - 40 age range group has the least frequency. Furthermore, 7 participants were single in both experimental and control groups, and 8 ones were married in both groups.

The table 3 was scored based on the rating of smoking. As can be seen, the score of 1 means the lowest rates of smoking or non-smoking, and 5 means the highest rates of smoking or addiction to smoking. According to the results, the consumption of smoking has declined in the experimental group (received mindfulness-based cognitive therapy). The number of people who quit smoking, and the

Table 1. Contents of the Presented Therapy Sessions

Sessions	
First session	Conducting pre-test, communication and conceptualization, necessarily use of mindfulness training and familiarity with the relaxation
Second session	Relaxation training for 14 groups of muscles, including the forearm, upper arm, calf muscles, legs, thighs, abdomen, chest, shoulders, neck, lips, eyes, jaw, forehead, lower and upper forehead.
Third session	Relaxation training for 6 groups of muscles, including the hands, arms, legs and thighs, abdomen, chest, neck and shoulders, jaw and forehead, lips and eyes and homework of relaxation.
Forth session	Breathing mindfulness training, and briefly review of the previous session, familiarity with breathing mindfulness, breathing techniques training with relaxation and without thinking about something else and breathing watching techniques training and mindfulness breathing homework before bed for 20 minutes.
Fifth session	Body detection techniques training, training of technique of attention to the movement of the body when you breathe, focus on the body and their movements and seek physical senses (hearing, taste, etc.) and eating mindfulness homework (eating calmly and attention to taste, and food sight).
Sixth session	Thoughts mindfulness training, pay attention to mind, positive and negative thoughts, pleasant or unpleasant thoughts training, allowing to enter negative and positive thoughts into mind and removing them easily without judgment and a strong focus on them and homework of writing positive and negative experiences without judging about them.
Seventh session	Complete mindfulness, repeating of training 4, 5 and 6 sessions each for 20 to 30 minutes.
Eighth session	Wrapping-up training sessions.

Table 2. Frequency of Distribution of Experimental and Control Group Based on the Age Range

Statistical Indicators Age, y	Frequency	
	Control Group	Mindfulness Group
20 - 25	6	6
26 - 33	5	5
34 - 40	4	4
Total	15	15

Table 3. Distribution of Two Groups Based on the Changes

Rate of Smoking	Control Group	Mindfulness Group No. (%)
1	0	12 (80)
2	0	2 (13)
3	0	1 (0.06)
4	6	0 (0)
5	9	0 (0)

percentage of positive change in therapy in the experimental group have been shown in the [Table 3](#).

In this study, nonparametric Wilcoxon test was used to measure the effectiveness of the independent variable on the dependent variable that we explained and provided information for the intended test below.

Wilcoxon test was used to answer the research hypothesis examining the pre-test and post-test. The results are presented in the following [Table 4](#).

The inserted information in [Table 4](#) has obtained from

Table 4. Results of Wilcoxon for Examination of Effectiveness of Mindfulness^a

Variable	Number	Z	Sig
Reduction of smoking	15	3.45	0.001

^a P < 0.05

examination of reducing rate of smoking in the pre-test and post-test as shown in the table and according to the results, z is significant in the intended level and it means that mindfulness is effective in reducing smoking.

5. Discussion

The aim of the current study was examination of the effectiveness of mindfulness-based cognitive therapy in reducing smoking in smokers aged 20 to 40 years in Tehran. According to the obtained results, there was a significant difference between the experimental and control groups ($P < 0.05$). In a study conducted by Garland and Schwarz, Kelly, Wait and Howard (2010), it was shown that mindfulness training is an effective technique in reducing addictive behaviors (19). Also in the research by Wupperman, Marlatt, Cunningham, Bowen, Berking and et al. (2012), increasing mindfulness was recognized as an effective technique in reducing drug abuse (20). Meanwhile, in the research of Aghayousefi, Orki, Zare and Imani (2013), mindfulness was recognized as an effective technique in reducing addiction and drug abuse in persons (21). The results of Terlur, Lee Booth and Karaterz's research (2010) suggest that training of prevention technique with mindfulness can have relatively successful impacts on judgment and

disdain for injecting drug users and it is consistent with the present study (22). The result of another study showed that mindfulness training is effective in the treatment of substance use disorder and their finding is consistent with the present study showing that mindfulness training is effective in reducing the amount of cigarette in smokers. In explaining of the above findings, it can be said that mindfulness can be used in the field of addiction in order to cope with temptation. It can be in the form of community-based addiction treatment, and it may provide the necessary training to prevent and reduce drug use. In fact, by creating the relative compatibility in mind, it can be used successfully in the early stages of treatment in order to prevent relapse, and it should also be noted that some studies have spoken about the effect of mindfulness on mental health promotion.

In this study, we found that mindfulness is effective in reducing smoking in smokers and our research also confirms the previous findings; therefore, the positive impact of mindfulness can be involved in reducing the problems of drug abusers.

5.1. Limitations and Suggestions

Among the limitations of this study was sampling method that was convenience sampling and it is one of the non-probability sampling methods. So, it is difficult to generalize the results of the study. Since the sample contains a certain group of people, generalization to other people is difficult in the present study. Also, social networks may affect reducing smoking, not necessarily mindfulness training. Therefore, it is suggested that paying attention is required to mindfulness topics in working with people with substance abuse. Also, using the prevention programs and informing the persons about them should be concentrated. Using this method is effective in reducing anxiety, depression and other problems of substance abusers in addition to reducing substance using. And it is recommended to the therapists who work in the field of psychological treatment that use the components of mindfulness in consultation with smokers interested to reduce their substance use.

References

- Crockford D, Fleury G, Milin R, Buckley L, Charney D, George TP, et al. Training in Substance-Related and Addictive Disorders, Part 2: Updated Curriculum Guidelines. *Can J Psychiatry*. 2015;**60**(12):1-12. [PubMed: 26720815].
- Ezzati M, Lopez AD. Measuring the accumulated hazards of smoking: global and regional estimates for 2000. *Tob Control*. 2003;**12**(1):79-85. [PubMed: 12612368].
- Mantler T, Irwin JD, Morrow D. Motivational interviewing and smoking behaviors: a critical appraisal and literature review of selected cessation initiatives. *Psychol Rep*. 2012;**110**(2):445-60. doi: 10.2466/02.06.13.18.PR0.110.2.445-460. [PubMed: 22662398].
- Falkenstrom F. Studying mindfulness in experienced meditators: A quasi-experimental approach. *Pers Individ Diff*. 2010;**48**(3):305-10.
- Sanger KL, Dorjee D. Mindfulness training for adolescents: A neurodevelopmental perspective on investigating modifications in attention and emotion regulation using event-related brain potentials. *Cogn Affect Behav Neurosci*. 2015;**15**(3):696-711. doi: 10.3758/s13415-015-0354-7. [PubMed: 25846954].
- Soler J, Cebolla A, Feliu-Soler A, Demarzo MM, Pascual JC, Banos R, et al. Relationship between meditative practice and self-reported mindfulness: the MINDSENS composite index. *PLoS One*. 2014;**9**(1):e86622. doi: 10.1371/journal.pone.0086622. [PubMed: 24466175].
- Garland EL, Hanley A, Farb NA, Froeliger BE. State Mindfulness During Meditation Predicts Enhanced Cognitive Reappraisal. *Mindfulness (N Y)*. 2015;**6**(2):234-42. doi: 10.1007/s12671-013-0250-6. [PubMed: 26085851].
- Pakizeh A, Nazari M. The effects of mindfulness training and emotion regulation on public health among the school students in Yasoj city [in Persian]. *J Med Educ Dev Center*. 2015;**6**(2):158-64.
- Dehghani Firuzabadi S, Ghasemi H, Safari S, Ebrahimi A, Etemadi E. The effectiveness of motivational interviewing group meetings on promoting self-esteem and self-efficacy among women [in Persian]. *J Substance Abuse Addiction Studies*. 2013;**26**:145-8.
- Hamed A, Shahidi SH, Khademi A. Effectiveness of mindfulness and harm reduction counseling on prevention of relapse of drug abuse. *J Addiction, Substance Abuse Research*. 2013;**2**(28):101-18.
- Golpour Chamarkuhi R, Mohammad Amini Z. The effect of training mindfulness on assertiveness techniques among students with anxiety [in Persian]. *J School Psychol*. 2011;**1**(3):82-100.
- Ahmadvand Z, Heydari Nasab L, Shaeiri M. Psychometric properties of the five-sided mindfulness among the student samples [in Persian]. The sixth Seminar mental health of students. University of Guilan. .
- Narimani M, Ariapouran S, Abolghasemi A, Ahadi B. Comparison of the effectiveness of training mindfulness and emotional regulation on physical well-being and psychological among chemical veterans [in Persian]. *J Arak Univers Med Sci*. 2010;**1**(2):91-117.
- Witkiewitz K, Bowen S, Douglas H, Hsu SH. Mindfulness-based relapse prevention for substance craving. *Addict Behav*. 2013;**38**(2):1563-71. doi: 10.1016/j.addbeh.2012.04.001. [PubMed: 22534451].
- Sauer S, Walach H, Kohls N. Gray's behavioural inhibition system as a mediator of mindfulness towards well-being. *Pers Individ Dif*. 2011;**50**(4):506-11.
- Caldwell K, Harrison M, Adams M, Quin RH, Greeson J. Developing mindfulness in college students through movement-based courses: effects on self-regulatory self-efficacy, mood, stress, and sleep quality. *J Am Coll Health*. 2010;**58**(5):433-42. doi: 10.1080/07448480903540481. [PubMed: 20304755].
- Kingston J, Chadwick P, Meron D, Skinner TC. A pilot randomized control trial investigating the effect of mindfulness practice on pain tolerance, psychological well-being, and physiological activity. *J Psychosom Res*. 2007;**62**(3):297-300. doi: 10.1016/j.jpsychores.2006.10.007. [PubMed: 17324679].
- McManus F, Surawy C, Muse K, Vazquez-Montes M, Williams JM. A randomized clinical trial of mindfulness-based cognitive therapy versus unrestricted services for health anxiety (hypochondriasis). *J Consult Clin Psychol*. 2012;**80**(5):817-28. doi: 10.1037/a0028782. [PubMed: 22708977].
- Garland EL, Schwarz NM, Kelly A, Whitt A, Howard MO. Mindfulness-Oriented Recovery Enhancement for Alcohol Dependence: Therapeutic Mechanisms and Intervention Acceptability. *J Soc Work Pract Addict*. 2012;**12**(3):242-63. doi: 10.1080/1533256X.2012.702638. [PubMed: 23280067].
- Wupperman P, Marlatt GA, Cunningham A, Bowen S, Berking M, Mulvihill-Rivera N, et al. Mindfulness and modification therapy for

- behavioral dysregulation: results from a pilot study targeting alcohol use and aggression in women. *J Clin Psychol*. 2012;**68**(1):50–66. doi: [10.1002/jclp.20830](https://doi.org/10.1002/jclp.20830). [PubMed: [21932371](https://pubmed.ncbi.nlm.nih.gov/21932371/)].
21. Agha Yousefi AR, Oraki M, Mohammad Z, Imani S. Mindfulness and addiction: effectiveness of mindfulness-based stress, anxiety and depression reduction in substance abusers [in Persian]. *J Thought and Behavior*. 2010;**7**(27):15–27.
22. Treloar C, Laybutt B, Carruthers S. Using mindfulness to develop health education strategies for blood borne virus prevention in injection drug use. *Drugs (Abingdon Engl)*. 2010;**17**(4):431–42.