



Original Article

Effectiveness of mindfulness-based cognitive therapy on clinical syndrome and body image in women with bulimia nervosa

Marjan Moradi¹; Ali Akbar Samari^{2*}

¹MS. in clinical psychology, Islamic Azad University, Branch of Neyshabur, Neyshabur, Iran

²Assistant professor of psychology, Islamic Azad University, Branch of Kashmar, Kashmar, Iran

Abstract

Introduction: The purpose of present research was to investigate the effectiveness of mindfulness-based cognitive therapy on clinical syndrome and body image in women with bulimia nervosa disorder.

Materials and Methods: This is a quasi-experimental study with pre-test, post-test, and control group. The study population consisted of all women who referred to two nutrition and diet therapy clinics in Mashhad between February and May 2015, among which 30 women with inclusion and exclusion criteria were selected as the sample using convenience sampling. The 30 participants were randomly assigned to two 15-person groups. The first group received mindfulness-based cognitive therapy and the second group was the control group that was placed on a waiting list. Binge Eating questionnaire (Gormally, 1982), Fisher's image inventory and Depression Anxiety Stress Scale (DASS-21) were used to collect data. Data analysis was conducted using analysis of covariance in SPSS.

Results: Based on the test results, mindfulness-based cognitive therapy significantly reduced depression ($P<0.05$), anxiety ($P<0.05$) and stress ($P<0.05$). Furthermore, the therapy increased the body image scores in experimental group compared to the control group at post-test stage ($P<0.05$).

Conclusion: The results showed that mindfulness-based cognitive therapy reduces depression, anxiety and stress, as well as improves body image in people being treated. Thus, the use of this therapy is recommended for patients with bulimia nervosa.

Keywords: Body image, Bulimia nervosa, Clinical syndrome, Cognitive therapy, Mindfulness

Please cite this paper as:

Moradi M, Samari AA. Effectiveness of mindfulness-based cognitive therapy on clinical syndrome and body image in women with bulimia nervosa. *Journal of Fundamentals of Mental Health* 2017 Aug-Sep; 19(5): 394-400.

Introduction

The most challenging psychiatric disorder to treat is eating disorder (1), which has been named as feeding and eating disorder in DSM-5. Eating disorders are syndromes in which cognitive changes related to food, body weight and wrong eating patterns can lead to nutrition and medical life-threatening complications. Feeding and eating disorders in DSM-5 are Pica disorder, rumination disorder, food avoidance/restrictions disorder, anorexia nervosa, bulimia nervosa, binge eating disorder and unknown feeding and eating disorder. Bulimia nervosa is a disorder in which the patient eats large amount of food and feels out of control in eating. Compensatory behaviors to avoid weight gain are also seen in the patients. These behaviors are, on average, seen twice

a week or three months during bulimia nervosa. Bulimia nervosa is a psychiatric disorder characterized by eating large amount of food in a short period and then adjusting extra calories by vomiting or other extreme actions (2). The mean prevalence of bulimia nervosa has been reported to be 1 percent for women and 0.1 percent for men in West Europe and United States (3). In Iran, an epidemiological study on eating disorders indicated the presence of 0.9% anorexia nervosa, 3.23% bulimia nervosa and 63.6% mild syndrome of eating disorder in a sample of 3100 subjects (4). Iran, like many developing countries, is experiencing an obesity epidemic and its complications. The recent epidemiological studies showed that the prevalence of overweight and obesity in Iran is equal to, or greater than Europe and United States. People with overweight and obesity are more likely to have adverse psychological, economic and social consequences, and overweight adolescents, compared with normal-weight peers, are more likely

*Corresponding Author: Islamic Azad University, Branch of Kashmar, Kashmar, Iran
samari@iaukashmar.ac.ir
Received: Apr. 10, 2016
Accepted: Jun. 11, 2017

to have concerns and intellectual engagement about their weight and behavioral inhibition such as binge eating and chronic regimes (4). Eating disorders and especially bulimia nervosa endanger public health of adolescents (5). Attitudes and behaviors toward eating are characterized by multiple psychological factors such as stress, anxiety and depression and the variables play a very important role in the formation and development of eating disorders (6). In addition to the effect of stress or psychological stressors on susceptibility to eating disorders, "perception of body image" is among other variables that play a determining role in creating bulimia nervosa and anorexia. The pressure of being thin that has a deep impact on a person can be well seen in the media and publications. According to social comparison theory, women often compare themselves to thin models and characters in the media and in magazines, and when they find a discrepancy between the ideal and what they perceive their bodies to be, they may engage in dieting or disordered eating (7). Studies conducted on students revealed that women, in comparison to men, build their self-esteem upon different structures such as perfectionism and body image (6). Many women and girls have problems about their body image. Disability in the diet, disinhibition and negative body image are among the characteristics of people with bulimia nervosa (8). Impaired perception of body size and weight, obsessive thoughts about food, exercise and distorted body image are symptoms that people with this disorder suffer from (9). Body image is a central concept for self-concept. Body image is not just a phenomenon resulted from social structure, but also is associated with the issue that how a person experiences his/her interactions with others. In this way, people who perceive themselves as unattractive are more likely to have social phobia (10). Mindfulness-based interventions are considered as a third-generation or third-wave cognitive-behavioral therapy. Mindfulness is a form of meditation rooted in eastern religious teachings and rituals, especially the Buddhism (11). Bishop believes that mindfulness in contemporary psychology is an approach to raise awareness on responding to mental processes including novel emotional disorders (12). Since mindfulness-based therapies deals to both physical and mental aspect, they have shown a high efficacy for the treatment of some clinical disorders and physical illnesses. In the last two decades, a large number of interventions and mindfulness-based therapies have emerged (13). In recent years, the ability of mindfulness has been recognized as a skill

to control disease, stress and life challenges in Western life (14). In a research on the effects of mindfulness on depression, Schulman concluded that mindfulness reduced depression by 70 percent. In a study using a methodology based on the presence of mind on 25 depressive patients with 2-year follow-up. It was seen that the therapy not only reduces depression but also is effective in preventing recurrence of depression (15,16). In a prospective study, Sullivan et al applied mindfulness-based psychological intervention to reduce anxiety and depression in patients with myocardial infarction. The results showed that during the next 12 months, psychological symptoms had improved in experimental group compared to control group (17). In another research, Zeidan et al. showed that mindfulness improves mood and its short-term training reduces depression (18). Although studies have used extensive research methods, most of them are cross-sectional or correlational studies. Therefore, a limited number of these studies are directly linked with eating behavior. Finally, although the existing literatures have confirmed the nature and origins of the pathology in the field of interest variables in eating disorders, but they are deficient in the field of treatment related studies. Given the above, and the importance and impact of body image and psychological stress on eating disorders, the purpose of present research was to investigate the effectiveness of mindfulness-based cognitive therapy on clinical syndrome and body image in patients with binge eating disorder.

Materials and Methods

The research method is clinical trail with pre-test, post-test and unequal control group. In this study, treatment is the independent variable and its levels are mindfulness-based cognitive therapy and non-intervention. Clinical syndrome variables (depression, anxiety, stress) and body image were considered as dependant variables. The population included women referring to nutrition clinics in Mashhad. The study used a non-probability sampling (targeted) method included 30 subjects. After filling out the Gormally's Binge Eating questionnaire, getting the diagnosis of bulimia nervosa and checking the inclusion criteria, the subjects were randomly assigned to two groups: 15 subjects for mindfulness-based cognitive therapy (experimental group) and 15 subjects for waiting list (control group). It should be noted that two subjects were excluded from intervention group because of three-session absence and finally the intervention

group was consisted of 13 subjects. Similarly, two subjects of the control group were excluded from the group because of being absent in posttest session and not filling out the questionnaires. The inclusion criteria for the research project were: female gender, minimum age of 18 years and maximum age of 40 years, minimum education of diploma, filling the overeating questionnaire and having a minimum score of 18 (having bulimia nervosa disorder), no simultaneous participation in other treatment programs and not receiving individual counseling or medication, no acute and chronic physical disease, no special diet under supervision of nutrition doctor, desiring to continue the project after taking the necessary explanation about the time, place and type of sessions. Gormally's Binge Eating questionnaire, Fisher's body image inventory and Depression Anxiety Stress Scale (DASS-21) were used to measure the intended variables.

Research instrument

- *Binge eating scale*: Gormally et al. designed the scale to measure the intensity of overeating. The scale is consisted of 16 items and each item is consisted of three or four statements. The subjects are asked to choose the statement best describes them. The items are rated from zero to three and total score ranges from zero to 46). A score of 17 or below indicates no binge eating and a score from 18-26 indicates moderate bingeing. Severe bingeing is identified as a score of 27 or higher. English, Portuguese and Italian versions of the scale have good reliability, sensitivity and specificity). In a research, Abolghasemi and Jafari investigated the psychometric properties of Iranian version of binge eating scale. To this end, Dezhkam et al. investigated 60 obese subjects aging from 20 to 50, and 60 subjects with normal weight who were homogenized in terms of age, gender, education, socioeconomic level and marital status. The reliability of the scale was 0.72, 0.67 and 0.85 using test-retest (after 9 to 20 days), split half and Cronbach's alpha, respectively. The sensitivity and specificity of Persian version of binge eating scale, using a cutting point of 17, were 84.6 and 80.8, respectively (19,20).

- *Depression, Anxiety, Stress Scale (DASS-21)*: The Depression, Anxiety, Stress Scale (Lovibond, 1995) was created according to the overlap of depression and anxiety and in order to define and measure the structures of anxiety and depression. In fact, the scale is a set of three self-report scales to measure negative emotional states (depression, anxiety and stress) (21). The questionnaire is scored

based on the intensity and level of anxiety, depression and stress. If the subject has no anxiety, depression or stress, he/she will receive a zero score and if the subject chooses low, high and very high options, he/she will score 1, 2 and 3, respectively. In this questionnaire, each scale consists of seven questions and accordingly a subject's score is calculated in above scales. In this study, we used the short form of DASS questionnaire, which contains 21 questions (7 questions for each scale). The minimum and maximum scores in these subscales are 0 and 21, respectively. The reliability of the scale was measured through internal consistency and its validity was assessed using factor analysis and criterion validity by running Beck depression test, Zhang anxiety test and perceived stress test. In general, the obtained coefficients of reliability and validity of the scale were very satisfactory and significant at $P < 0.001$ level. The correlations between DASS depression subscale and Beck Depression test, DASS anxiety subscale and Zhang anxiety test, and DASS stress subscale and perceived stress test were 70%, 67% and 49%, respectively. There was a significant difference between men and women in the obtained scores. Thus, different norms were presented for men and women. According to the research results, DASS-21 is eligible for use in clinical situations and psychological research (21).

- *Body image questionnaire*: Fisher's body image questionnaire: The body image test (Fisher, 1970) has 46 items. Each item has a score from 1 to 5 (1=very dissatisfied, 2=dissatisfied, 3= neither satisfied nor dissatisfied, 4 = satisfied, 5 = very satisfied). A score of 46 on the test indicates disorder and scores higher than 46 indicate lack of disorder. The calculated correlation coefficient in the first and second run using Pearson method was 0.81 for first-year students, 0.84 for second-year students, 0.87 for third-year students, and 0.84 for the total students. Given the significance level of the coefficients, it is plausible that there is a significant correlation between the scores of the first run and that of the second run. In Asgari et al research, the reliability of body image questionnaire was calculated to be 0.93 and 0.91 using Cronbach's alpha and split-half method, respectively (22).

Cognitive therapy developed by Mohammadkhani et al., includes eight group-training sessions (one session a week) and each session lasts for two hours. The details of this method are shown in Table 1 (23).

Table 1. Summary of MBCT training sessions

Session	Programs
1	Setting the general policy considering the confidentiality and privacy of people’s life, introducing the members and familiarizing them with each other, a description of the binge eating disorder and its symptoms and treatments, automatic guide training, defining the mindfulness, practice on eating raisins with awareness, homework, discussion and determining the weekly sessions, explaining the tapes and pamphlets of the first session
2	Checking homework, physical verifications exercise, practicing mindfulness in everyday life, thoughts and feelings practice, pleasant event recording, 10-minute sitting meditation, getting feedback
3	Checking homework, conscious “audio” “visual” meditation (30 or 40 minutes), three-minutes breathing space practice, reviewing walking with mindfulness, feedback and discussion about the practice
4	Checking homework, conscious “audio” “visual” meditation (30 or 40 minutes), awareness of breathing, body, sounds and minds, determining the homework, feedback
5	A 40-minute sitting meditation focusing on breathing and sounds with the aim of using meditation techniques in stressful situations, determining the homework, feedback
6	Sitting meditation focusing on breathing and body senses with the aim of controlling rumination using looking-at-yourself-from-the-outside method
7	Sitting meditation focusing on breathing and body senses, the practice of viewing the relationship between activity and mood, reviewing thoughts, preparing for the end of the period
8	Reviewing the past contents and conclusion

Results

The mean and standard deviation of the subjects’ age were 30.07 and 7.85, respectively, with a range of 18 to 40 years. There was no significant difference between experimental (intervention) and control groups in terms of age, education and marital status. Table 2 shows some demographic information of subjects such as education and marital status.

Education	Diploma	4	31%	4	33%
	Associate degree	4	31%	3	25%
	Bachelor’s degree	4	31%	5	43%
	Master’s degree	1	7%	0	0%
Marital status	Single	4	31%	5	42%
	Married	7	54%	7	58%
	Divorced	2	15%	0	0%

Table 2. Demographic information of subjects

Variable	Level	Frequency	Percent	Frequency	Percent
		Intervention		control	

Table 3 shows the mean and standard deviation of research variables in pre-test and post-test for experimental and control groups.

Table 3. Mean and standard deviation of research variables in pre-test and post-test for experimental and control groups

Variable	Control group				Intervention group			
	Pretest		Posttest		Pretest		Posttest	
	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation
Depression	15.25	5.429	14.92	5.125	17.38	6.007	10.54	3.406
Anxiety	11.00	2.796	10.33	2.741	11.31	7.158	8.77	3.961
Stress	22.00	5.908	21.58	5.712	24.00	6.481	16.00	5.759
Body image	163.17	18.507	162.92	17.207	157.23	16.321	169.08	15.223

Table 4 shows the results of Levene’s test for equality of variances. Since significance level of F-statistic was higher than 0.05 (significance level), equality of variances was met in all studied variables for the intervention and control groups.

Table 4. Results of Levene’s test for equality of variances in the intervention and control groups

Variable	Statistic	Significance
Depression	0.002	0.969
Anxiety	0.158	0.694
Stress	0.488	0.492
Body image	1.259	0.273

Table 5. Results of univariate analysis of covariance for studied variables

Variable	Degree of freedom	Statistics	Significance	Effect size
Depression	1	87.63	0.000	0.80
Anxiety	1	13.908	0.001	0.39
Stress	1	223.784	0.000	0.91
Body image	1	108.443	0.000	0.83

According to the Table 5, results of univariate analysis of covariance showed that, in women with bulimia nervosa, there is a significant difference between intervention and control groups in terms of depression (F=87.63, P<0.05). The results also show

that, in people with binge eating disorder, there is a significant difference between intervention and control groups in terms of anxiety ($F=13.908$, $P<0.05$). Moreover, the result showed that, in women with bulimia nervosa, there is a significant difference between intervention and control groups in terms of stress ($F=223.784$, $P<0.05$). In other words, mindfulness-based cognitive therapy reduced depression, anxiety and stress in subjects of intervention group compared to the subjects of control group, in the posttest. The effect of this intervention on reducing anxiety, depression and stress is 80%, 39% and 83%, respectively. In addition, the results showed that, in women with bulimia nervosa, there is a significant difference between intervention and control groups in terms of body image ($F=108.443$, $P<0.05$). In other words, mindfulness-based cognitive therapy reduced negative body image in the subjects of intervention group compared to the subjects of control group, in the posttest. The effect of this intervention on reducing negative body image was 83 percent. This means that 83 percent of total residual variance was due to the effect of the intervention.

Discussion

The purpose of present research was to investigate the effectiveness of mindfulness-based cognitive therapy on depression, anxiety, stress and body image in women with bulimia nervosa disorder. The findings showed that mindfulness-based cognitive therapy reduced depression in the experimental group compared to the control group. The findings are consistent with the results of Kaviani, Azargoon, Hanasabzade, Esmailian and Nirenberg (24-28). By focusing on individuals' cognitions (an important aspect in the treatment of depression), mindfulness-based cognitive therapy is among factors reducing frequent recurrences and focus on negative thinking patterns, and had lead to the emergence of a new movement on the states of mind. The movement opens us many different and related methods, thereby causing new learning and emergence of useful empirical perspective (29). This change in the state of mind enables participants to view experiences from different perspectives and related with different spaces. This awareness does not necessarily create attitude, but create a new method of viewing cognitive experiences by which we can learn from our experiences. In this way, the person will be able to achieve a better definition of himself/herself, the problem is seen as an inclusive experience and the person tries to solve it with a good way. This method can effectively reduce

depression in people with binge eating disorder. This treatment has reduced the return rate of depression attacks in those with three or more depression attacks (30). Research evidences support the application of mindfulness-based stress reduction method. The findings of this research also suggest that mindfulness-based cognitive therapy has reduced anxiety in the subjects of experimental group compared to the control group. This result is in line with the findings of Schulman, Beyrami, and Farhadi et al. (15,31,32). In explaining this results, we can say that the reason for reduction of anxiety resulted from disorder symptoms is the content of this approach that for overeating can focus on normalizing eating patterns and causes an end to the overeating and purging cycles. According to the conducted studies, it seems that mindfulness interrupts the cycle of negative internal experiences such as expected anxiety about a non-occurred event in the future or rumination of an event in the past (33). Davidson et al. also reported that mindfulness meditation activates a region of brain that is associated with positive emotions and beneficial effects of immunization function (34). In addition, Carlson et al. achieved significant improvement in quality of life, stress syndrome and sleep quality in patients with breast and prostate cancer, after receiving mindfulness-based stress reduction program (35). Additionally, mindfulness-based stress reduction program has significantly increased mental clarity and mental health and reduced body stress (36). Moreover, the findings of this research showed that there is a significant difference between the scores of intervention group and that of control group in terms of body image. In other words, mindfulness-based cognitive therapy has increased the body image in subjects of intervention group compared to the control group. The finding is in line with the studies of Manlic et al., Narimani et al., and Abolghasemi and Jafari (20,37,38). In explaining the finding, we can say that mindfulness-based cognitive therapy uses cognitive practices to improve mental distortions and beliefs related to body image, cognitive errors and the way of dealing with stress such as relaxation, meditation and emotion regulation. The patients are taught to face parts of their body that cause their discomfort with relaxation technique, gradually reduce their stress, discomfort and anxiety, and thereby feel the sense of satisfaction and completeness. So that people with negative body image find mental awareness about values detected during the treatment, including their physical condition, and can improve their body

image by reducing rumination and emotional cutoff and increasing acceptance (38). Therefore, mindfulness therapy through cognitive and emotional strategies has modified and reduced negative body image. One important reason for the formation of bulimia nervosa disorder is disorder in body image and negative attitudes about body image. Given that the above treatment focuses on changing the attitudes to the body, it can be effective in improving the body image. In doing any research, the researchers are faced with limitations. Among the limitations of this study was the limitation of population to women referring to two nutrition clinics in Mashhad that limits the generalizability of our results to other groups in the society. Group limitation and time limitation to implement follow-up studies was among other

limitations of this study. It is suggested that future researches conduct the treatment in larger groups and compare the results with other treatment methods in the field of binge eating and eating disorders, as well as conduct similar research to investigate the effectiveness of MBCT therapy on other psychological variables associated with overeating.

Conclusion

According to the study of mindfulness-based cognitive therapy in reducing the amount of depression, anxiety and stress disorders in women with bulimia nervosa is effective and this technique also improves body image score in these women. Therefore, this therapy can improve the clinical symptoms in patients with binge eating disorder.

References

1. Fairburn CG. Cognitive behavior therapy and eating disorder. New York: Guilford; 2008: 7-22.
2. American Psychiatric Association. Diagnostic and statistical manual of mental disorders. 5th ed. Washington: American Psychiatric Publishing; 2013: 54-329.
3. Reichborn T, Bulik C. Psychiatric and medical symptoms in binge eating in the absence of compensatory behaviors. *Obesity Res* 2009; 12: 1445-54.
4. Rostayi R, Hajifaraji M, Hoshiyaryar A. [Investigating the prevalence of eating disorders and related factors in female high school students]. *Iranian journal of nutrition sciences and food technology* 2013; 8(1): 135-44. (Persian)
5. Hoek H, Van-Hoeken D. Review of the prevalence and incidence of eating disorders. *Int J Eat Disord* 2006; 34: 383-96.
6. Perez M, Joiner TJ. Is major depressive disorder or dysthymia more strongly associated with bulimia nervosa? *Int J Eat Disord* 2008; 36: 55-61.
7. Bekker MH. Gender and stress: in gender role stress? A re-examination of the relationship between feminine gender role stress and disorders. *Stress Health J* 2006; 18(9): 141-9.
8. Hilbert A, Tuschen-Caffier B. Body image interventions in cognitive behavioral therapy of binge-eating disorder: a component analysis. *Behav Res Ther* 2009; 42(11): 1325-39.
9. Wilfey DE, Welch RR. A randomized comparison of group cognitive-behavioral therapy and group interpersonal psychotherapy for the treatment of overweight individuals with binge eating disorder. *Arch Genet Psychiatr* 2006; 59: 713-21.
10. Green P, Pritchard M. Predictors of body image dissatisfaction in adult men and women. *Soc Behav Pers* 2003; 31: 215-22.
11. Ost LG. Efficacy of the third wave of behavioral therapies: A systematic review and meta-analysis. *Behav Res Ther* 2008; 46: 296-321.
12. Bishop SR. What do we really know about mindfulness-based stress reduction? *Psychosom Med* 2002; 64: 71-84.
13. Baer R. Mindfulness-based treatment approaches: Clinicians guide to evidence base and application. USA: Elsevier; 2006.
14. Kabat-Zinn J. Mindfulness-based interventions in context: Past, present, and future. *Clin Psychol Sci Pract* 2003; 10: 144-56.
15. Schulman P. Depression prevention in adults. [cited 2004]. Available from: Schulman@psychupenn.Edu.
16. Michalak J, Heidenreich T, Meibert P, Schulte D. Mindfulness predicts relapse/recurrence in major depressive disorder following mindfulness-based cognitive therapy. *J Nerv Ment Dis* 2008; 196: 630-3.
17. Sullivan MJ, Wood L, Terry J, Brantley J, McGee CA, Johnson V, et al. [The support, education, and Research in Chronic Heart Failure Study (SEARCH): A mindfulness-based psycho-educational intervention improves depression and clinical symptoms in patients with chronic heart failure. *Am Heart J* 2009; 157: 84-90.
18. Zeidan F, Johnson SK, Diamond BJ, David Z, Goolkasian P. Mindfulness meditation improves cognition: Evidence of brief mental training. *Cons Cognit* 2012; 19(2): 597-605.
19. Moloodi R, Dezhkam M, Mootabi F, Omidvar N. [Comparison of early maladaptive schema in obese binge eaters and obese non-binge eaters]. *Journal of behavioral sciences* 2010; 4(2): 109-14.
20. Abolghasemi A, Jafari Esa. [The effectiveness of dialectical behavior therapy on body image and self-efficacy in girls with bulimia nervosa]. *Journal of clinical psychology* 2012; 4(2): 65-79. (Persian)

21. Vaezzade S H, Ghanbari Hashem Abadi B, Aghamohamadian Sherbaf H. [The effectiveness of spiritual-religious group therapy on religious orientation, religious coping, depression and anxiety in Afghan refugees of Mashhad]. MS. Dissertation. Mashhad: Ferdowsi University of Mashhad, 2012. (Persian)
22. Asgari P, Pasha Gh, Aminian M. [The relationship between emotional regulation, emotional stressors of life and body image with eating disorders in women]. Iranian journal of psychiatry and clinical psychology 2009; 4: 65-84. (Persian)
23. Mohamadkhani P, Tamanayi Far Sh, Jahani Tabesh E. [Mindfulness-based cognitive therapy for depression]. University of Rehabilitation Sciences and Social Welfare, Tehran; 2005: 120-40. (Persian)
24. Kaviani H, Javaheri F, Bahirayi H. [The effectiveness of mindfulness-based cognitive therapy in reducing negative automatic thoughts, dysfunctional attitude, depression and anxiety]. New cognitive science 2007; 7(1): 49-58. (Persian)
25. Azargoon H, Kajbaf M. [The effectiveness of mindfulness in reducing dysfunctional attitude and automatic thoughts of depressed students in Isfahan University]. Journal of psychology 2010; 14(1): 79-94. (Persian)
26. Hanasabzade M, Yazdandoost R, Nejad Farid A, Gharabi B. [Mindfulness-based cognitive therapy for suicidal depressed patients: A qualitative study]. Journal of clinical psychology 2011; 1(1): 35-45. (Persian)
27. Esmaelian N, Tahmasian K, Dehghani M, Mootabi F. [The effectiveness of mindfulness-based cognitive therapy in reducing symptoms of depression in 10- to 13-year-old children with divorced parents]. Journal of clinical psychology 2013; 5(3): 76-89. (Persian)
28. Nierenberg AA, Peterson TJ, Alpert J. Prevention of relapse and recurrence in depression: The role of long-term pharmacotherapy and psychotherapy J Clin Psychiatry 2003; 64: 15.
29. Segal ZV. Mindfulness-based cognitive therapy for depression: A new approach to preventing relapse. 2nd ed. New York: Guilford 2002: 182-3.
30. Ahmadvand Z. [Explanation of psychological well-being based on components of mindfulness]. Journal of health psychology 2012; 1(2): 60-69. (Persian)
31. Beirami M, Abdi R. [The effectiveness of mindfulness-based techniques in reducing test anxiety of students]. Educational sciences; 2(6): 35-54. (Persian)
32. Farhadi A, Movahedi Y, Karimi Nejad K, Movahed M. [The impact of mindfulness-based cognitive therapy on depression in men with coronary artery disease]. Journal of cardiovascular nursing 2013; 2(4): 70-8. (Persian)
33. Kiani A, Ghasemi N, Poorabas A. [Comparison of the effectiveness of mindfulness acceptance and commitment-based group therapy on the craving and emotion cognitive regulation in methamphetamine users]. Addiction quarterly journal of drug abuse 2012; 6: 27-37. (Persian)
34. Davidson RJ, Kabat-Zinn J, Schumacher J, Rosenkranz M, Muller D, Santorelli SF. Alterations in brain and immune function produced by mindfulness meditation. Psychosom Med 2003; 65: 564-70.
35. Carlson LE, Speca M, Patel KD, Goodey E. Mindfulness-based stress reduction in relation to quality of life, mood, symptoms of stress and immune parameters in breast and prostate cancer outpatients. Psychosom Med 2003; 65(4): 571-81.
36. Javaheri F. [The effectiveness of mindfulness training in prevention of depression in female students living in dormitory of Isfahan University]. MS. Dissertation. Islamic Azad University, Branch of Roudehen, 2006. (Persian)
37. Manlic CF, Cochran SV, Koon J. Acceptance and commitment therapy for eating disorders: Rationale and literature review. J Contemp Psychther 2013; 3(9): 1-9.
38. Narimani M, Ariapooran S, Abolghasemi A, Ahadi B. [The effectiveness of training mindfulness and emotion regulation on Veterans' mental health]. Journal of psychology 2011; 2(4): 66-76. (Persian)