ORIGINAL ARTICLE

A Comparative Study of Mindfulness Efficiency Based on Islamic-Spiritual Schemes and Group Cognitive Behavioral Therapy on Reduction of Anxiety and Depression in Pregnant Women

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Abstract

Background: Anxiety and depression during the pregnancy period are among the factors affecting the pregnancy undesirable outcomes and delivery. One way of controlling anxiety and depression is mindfulness and cognitive behavioral therapy. The purpose of this study was to compare the efficiency of mindfulness based on the Islamic-spiritual schemas and group cognitive behavioral therapy on reduction of anxiety and depression in pregnant women.

Methods: The research design was semi-experimental in the form of pretest-posttest using a control group. Among the pregnant women in the 16th to 32nd weeks of pregnancy who referred to the health center, 30 pregnant women with high anxiety level and 30 pregnant women with high depression participated in the research. Randomly 15 participants with high depression and 15 participants with high anxiety were considered in the intervention group under the treatment of mindfulness based on Islamic-spiritual schemes. In addition, 15 participants with high scores regarding depression and 15 with high scores in anxiety were considered in the other group. .The control group consisted of 15 pregnant women with high anxiety and depression. Beck anxiety-depression questionnaire was used in two steps of pre-test and post-test. Data were analyzed using SPSS, version 20, and $P \leq 0.05$ was considered as significant.

Results: The results of multivariate analysis of variance test and tracking Tokey test showed that there was a significant difference between the mean scores of anxiety and depression in the two groups of mindfulness based on spiritual- Islamic scheme ($P<0.001$) and the group of cognitive behavioral therapy with each other ($P<0.001$) and with the control group($P<0.001$). The mean of anxiety and depression scores decreased in the intervention group, but it increased in the control group.

Conclusion: Both therapy methods were effective in reduction of anxiety and depression of pregnant women, but the effect of mindfulness based on spiritual- Islamic schemes was more.

Keywords: Mindfulness, Cognitive-behavior, Anxiety, Depression, Pregnant

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Introduction

Anxiety and depression in pregnancy period are the predictors of adverse effects of delivery for both mother and baby. Anxiety in pregnancy period is related to the preterm and after that it is related to the neurological growth as well as problems of children.[1]

Most of prospective studies showed that if mother during the pregnancy is anxious, worried and distressful, the probability of the newborn weight loss and encounter with unpleased results after birth such as the emotional problems and the symptoms of hyperactivity disorders as well as problems in cognitive development would increase. Although we cannot ignore the role of genetic and cultural issues, anxiety or depression of the mother accounts for 10 to 15 percent of emotional and behavioral problems of children.[2] Based on the existing evidence, having stress during the pregnancy period may have serious effects on the fetus' health because stress may affect the application of hormones and the mother's immune system may also create neurological and immunity problems for the fetus.[3]

Mother's stress may have lasting effects on the following items:

1) Fetus health status, 2) Growth and function of the fetus' immunity system, and 3) Neurological development of the fetus.3 The obtained results of research showed that the mothers' depression, anxiety and stress led to neurological, biological and behavioral disorders in their fetuses and infants.[3]

The effect of both anxiety and depression together in comparison with that of each of them alone on the mood conditions of pregnancy period as well as nervous and chemical results of this period can be different.[4,5]

Cognitive-behavioral therapy is a brief and organized view for reduction of acute depression by increase of communication with incentive references such as booster thought that can increase the rate of activity and also reduce barriers to the solution of the problem.[6] From the perspective of multi-disciplinary research, the treatment methods, especially those used in the cognitive-behavioral therapy, are useful in the pregnancy period.[7,8]

Mindfulness is a form of meditation based on the Buddhist traditions and during the two recent decades has been applied for treatment of mental problems.[9,10]

One of the principles of mindfulness is qualifying the inner consciousness; this is possible to be done through scanning and reviewing physical reactions, and emotional and cognitive schemas.[11] Changing the underlying mechanisms compiled in this study are as follows: As we know, Islam is derived from the word "Salm" meaning surrender; also, in Western meaningfulness, acceptance is one of the underlying principles. Accordingly, one of the fundamental principles of this plan is surrender to God's satisfaction and accepting the commendation. Another principle of Western mindfulness is the qualification of the inner consciousness that is done through training mindfulness in Islam besides self-knowledge that is considered precedence over theology. Moreover, self-knowledge is considered as the most beneficial aspect of education; doing the work wholeheartedly is much emphasized, as well**.** The other common aspect in the mindfulness and religious protocol is that in Western mindfulness for creating internal peace and concentration a kind of terms or mantrais is used. In Islam, using the prayer for inside peace and having connection with God is recommended. This therapeutic approach is a compilation of mindfulness, schema therapy, spiritual therapy and Islamic teachings. In formulation of this therapeutic approach, the existing common principles between Western mindfulness and Islamic spiritual teachings have been emphasized. There has been an attempt to extract the useful practical tips and medical techniques in the verses and hadiths for reducing the social anxiety; they have also been formulated. The activation process of a religious or spiritual scheme does not have any difference with the activation of public

processes of the other cognitive schemes.[12]

Based on cognitive psychology, a scheme is a set of beliefs or fully automated, organized and regular knowledge about the intentions and capabilities of an individual that is stored in the long-term memory and creates the efficiency criteria for adjusting the focus, coding, restoring data and making a strong association with the other parameters of the system, such as physiology and emotion.[13]

Despite mounting evidence that prenatal maternal stress and anxiety present risks to the mother and the baby, few stress-reduction programs have been tested in randomized controlled trials in pregnancy. Preliminary evidence from the limited number of studies exploring mind-body approaches to prenatal maternal stress reduction suggests that progressive muscle relaxation, yoga and meditation may be helpful for improving maternal psychological well-being and prenatal outcomes.[14]

However, these studies are typically limited by methodological flaws, such as lack of a control group or random assignment, use of non-specific samples of all consenting pregnant women regardless of the risk and failure to measure process variables.

Literature on mindfulness training during pregnancy does not support general conclusions about the efficacy of this stress-reduction approach due to a lack of methodologically rigorous studies.[15] We sought to address the Comparative Study of Mindfulness Efficiency Based on Islamic-Spiritual Schemes and Group Cognitive Behavioral Therapy on Reduction of Anxiety and Depression in Pregnant Women in this study.

Materials and Methods

This study was carried out in multi-stages as a simple randomized controlled clinical trial on 75 pregnant women referred to Shohadye Valfajr Health Center Clinic during 3 months (June to August 2015). They were selected on the basis of the aim and by sample size determination with an error of 5%, confidence of 95%, a power of 80%, an effect size of 6.0 (mean=4 and standard deviation=6), using the following formula:

$$n = \frac{2\left(z_{1-\frac{\alpha}{2}} + z_{1-\beta}\right)\delta^2}{d^2}$$

To consider the possibility of loss of 15% of the study, we used the formula

$$n' = \frac{n}{1 + \frac{n}{N}}$$

Finally, the sample size in each group was determined 30.

The inclusion criteria were being pregnant women in the 16th to 32nd week of pregnancy who referred to the Shiraz health centers, having a high level of anxiety and/or high depression or till now at least one referral to the clinic due to a mental illness such as anxiety and depression.

Exclusion criteria included being pregnant during the study, being under psychotherapy and trainings out of the research intervention, and being absent in more than two sessions of training course; also, the pregnant women in the experiment and control groups who had been faced with a severe stress, such as bereavement and/or severe marital dispute during the intervention and training were excluded from the research.

In this semi-experimental research design, we used pretest-posttest with control group. At first, after coordination with Shohadaye Valfajr Health Center, ten health centers were selected via available sampling, a briefing with the pregnant women in 16th to 32nd week of pregnancy was held. Altogether 205 pregnant women attended the meeting. The telephone number of the participants in the research, who themselves claimed they had a high level of anxiety and/or high depression or at least had referred to the clinic for one time due to a mental illness such as anxiety and depression, was recorded by the researcher. In the next session held in the presence of volunteers from the previous session, Beck anxiety and depression test was taken from them and those whose score in the depression scale was more than 14, and in the anxiety scale it was more than 7 (from mild to severe

anxiety and depression) were selected; in addition, they were asked to indicate whether a particular mental disorder exists or not; then, the pregnant women who acknowledged that they had mental disorders were excluded from the study.

Then, 30 pregnant women with high level of anxiety and 30 pregnant women with high level of depression participated in the research by using random selection table. Randomly 15 participants with high depression and 15 participants with high anxiety were considered in the intervention group under the treatment of mindfulness based on Islamic-spiritual schemes. In addition, 15 participants with high scores in depression and 15 with high scores in anxiety were considered in the other group. Due to the limitations of eligible individuals, 15 people who had depression or stress were used in the control group.

After choosing the case study, to ensure about their satisfaction and the possibility to participant in the research and also to ensure about having required criteria of the research (above-mentioned), an interview was done with them.

The participants with high anxiety and depression passed the course of mindfulness training for 8 weeks with a maximum two-hour session per week based on the reduction of stress according to the Kabat-Zinn treatment protocol 11 (Table 1). In addition, the patients were trained to do the homework 45 minutes a day and six days a week. The homework manuals were given to the patients; the members of the other intervention group with high anxiety and depression were under the treatment of cognitive behavioral therapy for 12 weeks with a maximum two-hour session per week (Table 2). These courses were not held for the control group.

The confidentiality of the patients' data was guaranteed and the participants were assigned a code; they were also told that the results of the research would be used only in the field of training and education.

In this study, the multivariate analysis of variance was used to assess the efficiency of therapeutic methods on the anxiety and depression of pregnant women. Data were analyzed using SPSS, version 20, and $P \leq 0.05$ was considered as significant.

Research tools were Beck anxiety and depression questionnaires. Beck anxiety questionnaire is a self report questionnaire for measuring the severity of anxiety in adolescent and adults. The conducted studies show that the validity and reliability of this questionnaire is high. Some researches in Iran have conducted a study on the psychometric properties of the test. For example, Mohammadi, Birashk & Gharaei (2013) has reported its reliability coefficient of 0.80 with retest method and within two weeks interval.[16] In addition, Kaviani and Mousavi (2009),[17] in assessing the psychometric properties of this test in Iranian population, reported that the validity coefficient was approximately 0.72; and the test–retest reliability coefficient within one month interval was 0.83 Also, the Cronbach's alpha was reported 0.92.[18] This questionnaire is a scale with 21 articles; the participant in each article chooses one of the four options showing the intensity of anxiety. Four options

Table1: The protocol of Mindfulness based on Islamic-Spiritual Schemes

Number of meetings	Content of meetings
First session	Members becoming familiar with each other and expressing the rules of group counseling
Second session	Introduction of physical, emotional and cognitive components of pregnancy anxiety
Third Session	Introduction of mindfulness and spiritual schema
Fourth session	Remembering anxiety situations and recalling experience
Fifth session	Reminding the relation between praying with inner peace
Sixth session	Practical application of spiritual experiences
Seventh session	Introducing the concept of mindfulness and its application in the session
Eighth and ninth sessions	Reviewing the gained experiences in the group and stopping the unfinished feel.

Table 2: The protocol of the groups' cognitive behavior

Number of meetings	Content of meetings
First session	Introducing members, establishing continuity of group, explaining about the rules of the group, objectives and structure of the sessions, explaining about cognitive-behavioral-body interaction with exiting and emphasizing on anxiety and depression, stressing on the importance of doing homework and enhancing motivation of participating in the meetings
Second session	Training the relation of telepathy with mood, behavior and environment
Third Session	Training the recognition of negative and effective spontaneous thoughts (mental images) and its relation with the mood states and grading the negative thoughts
Fourth session	Explaining the downward technique to identify underlying negative assumptions and beliefs of anxiety and depression
Fifth session	Training to achieve a balanced and alternative thinking as well as grading the trust rate of that chosen belief
Sixth session	Training the diagnosis and graduating mood state at the later stage of alternative thinking; and comparison of it with the primary mood state
Seventh session	Training planning for restructuring the structure of daily and normal activities and normalization of quality and quantity of activity level and explaining about the relation and interactive effects of this session trainings with replaced previous learned thoughts and beliefs
Eighth and ninth sessions	Training the communication skills and expressing the moods as well as presenting my rights and the other's rights to improve and enrich the relationships with family members and others
Tenth session	Training the skills based on dealing with unpleasant and damaging behaviors as well as role-playing exercise to deal with stressful situations and behaviors and reducing the apparent avoidance behaviors
Eleventh and twelfth session	Concluding the treatment process generaly; and posing questions for final assessing the effect of the interventions – making attempt on rational evaluating the entire of the course

of a question in a four-point range are scored from 0 to 3. Each of the articles of the best instruments for measuring depression. A study conducted by Azkhosh (2009) in Iran regarding the value of this questionnaire in identifying the depressed patient from healthy individuals showed that the questionnaire has diagnostic value and is able to identify the healthy person from patients.[19]

Dabson and Mohammad Khaani (2007)[20] obtained the Alfa coefficient of 0.92 for outpatient and 0.93 for students and the retest coefficient within one week interval was 0.93. In addition, based on the obtained results of the study on 125 students of Tehran University and Alameh Tabatabaei University that was conducted for assessing the validity and reliability BDI-II on Iranian population, the results showed a Cronbach's alpha of 0.78 and the reliability of retest within two weeks interval was 0.73.[16]

The short form of this questionnaire was standardized by Dadsetan and Mansour (1990)[21] in Iran. Rajabi et al. (2001)[22] reported that the Cronbach's alpha for the questionnaire was 0.87 and reliability coefficient split-half was 0.83; also, the retest coefficient within three week interval was 0.49. This questionnaire is in the form of a self-report questionnaire and it is a scale with 21 articles. In this questionnaire, several question groups are seen; each question expresses a mood in the individual. To implement the questionnaire, is the researcher asked the participants to read the questions and options carefully and select an option from each question that shows the emotion of the person better than the others, i.e. what the person feels exactly at the time of implementation of questionnaire.[18]

Results

The age range of the participants was 24-38 years and their means±SD age was 29.4±3.8 and 27±3.2

and 28.6±4.3 in the mindfulness, cognitive behavior therapy and control groups, respectively.

Table 3 shows the mean and standard deviation of anxiety and depression variables of pregnant women in the pre-test and post-test steps in three groups.

According to the Table, the significant levels of all tests reveal that between the anxiety and depression of pregnant women in the experimental and control groups, at least in one of the dependent variables in the P<0.001 level , there was a significant difference. Based on Table 4, for the variables of anxiety and depression, F was obtained 155.796 and 152.373, respectively; they are significant in the P<0.001 level.

This finding shows that in the aforesaid related variables statistically significant differences are seen between the mindfulness groups based on the Islamic-spiritual schemes and group cognitive-behavioral therapy and control group. To determine the differences in the dependent variables in these three groups, we used the tracking Tukey test, as shown in Table 5.

As seen in Table 5, these findings revealed that both training of mindfulness and group cognitive behavioral therapy in comparison to the control group led to a decrease in anxiety and depression in pregnant women.

The difference between the average of mindfulness group and cognitive behavioral

Table 3: The mean and standard deviation of anxiety and depression variables of pregnant women in the pre-test and post-test steps in three groups

Therapeutic methods	Anxiety		Depression	
	Pre-test mean±SD	Post-test mean±SD	Pre-test mean±SD	Post-test mean±SD
Mindfulness based of Islamic-spiritual schemes	54.53±4.4	11.46±6.23	55.6±27.68	10.6±5.4
Group cognitive behavioral therapy	42.66±12.78	23.6±9.31	39.6±11.68	21.13±12.42
Control	50±6.4	49.86±6.32	52.33±6.91	52.06±7.38

After confirming the homogeneity of dependant variables variances (using Levin test), we used multivariate analysis of variance test.

Table 4: The results of ANCOVA in two experimental and control groups in terms of difference between pretest posttest scores of variables

Variable	Sum of squares	df	Mean square	f	sig	Partial Eta Squared
Anxiety	12001.118	2	6000.559	155.796	0.001	0.884
Depression	14250.253	2	7125.127	152.373	0.001	0.886

Table 5: The results of the Tukey's test for differences between groups on dependent variables in the post-test

Variable	Groups compared	Differences between averages	Standard's error	sig
Anxiety	Mindfulness based of Islamic-spiritual schemes- cognitive behavioral therapy	-12.133	2.713	0.001
	Group cognitive behavioral therapy-control	-26.266	2.713	0.001
	Mindfulness based of Islamic-spiritual schemes- control	-38.4	2.713	0.001
Depression	Mindfulness based of Islamic-spiritual schemes- cognitive behavioral therapy	-10.53	3.257	0.001
	Cognitive behavioral therapy-control	-30.933	3.257	0.001
	Mindfulness based of Islamic-spiritual schemes- control	-41.46	3.257	0.001

therapy group in anxiety was -12.133 and in the depression variable it was -10.53; this difference was significant in the level of 0.001. Therefore, the mindfulness treatment method in comparison with group cognitive behavioral therapy was more effective on the reduction of anxiety and depression of pregnant women.

Discussion

Due to the risks of psychiatry drugs for the fetus, the use of non-pharmacological methods for solving the psychological problems of pregnant mothers is essential.[23]

According to the findings, Group Cognitive Behavioral Therapy reduced anxiety and depression of the pregnant women. This finding was consistent with those of Guido, Urizar and Ricardo,[24] Tabrizi and Lorestani[25] Hosseini, Tagavi and Ahmadian,[26] Dreh shuri Mohammadi, Bsaknzhad and Sarvghad[27] studies. However, the findings are not in the same line with those of Austin.[28]

The intervention of cognitive behavior therapy through identifying the spontaneous negative thoughts, substituting the positive thoughts, correcting the cognitive errors, exaggerating generalizations, and replacing the irrational beliefs with rational ones by being aware as well as investigating the opportunities reduces anxiety. Through increasing awareness and behavioral skills of anxiety reduction, such as gradual muscular relaxation, conducted imagery, meditation and coping skills and providing social support, this approach is effective on the anxiety of pregnant women. The researchers stated that the cause of inefficiency of interaction in the Austin's study was the awareness of both control and intervention groups about the effect of the intervention in the pre-test and post-test which led to a reduction of their baseline anxiety and depression.[27]

In addition, the intervention of mindfulness based stress reduction reduced the anxiety and depression of pregnant women; this is consistent with the results of the studies by Vieten and Astin,[5] Beddoe,[29] Dunkel Schetter, Bower and Smalley, Dunn, Hanieh, Roberts and Powrie,[30] Gordon,[31] Byrne, Hauck, Fisher, Bayes, Schutze.[32]

Mindfulness affected the rate of self-compassion, repeated thoughts (rumination and worry), coping skills and the beliefs of the individuals, reducing the rate of individual's anxiety.[33]

One of the reasons of good effect of both interventions was the method of sitting in a circle and face to face to each other facilitated the expression of their emotions. The group provided the opportunity for its members to become familiar with people who are in a better or worse condition. All these provide the opportunity so that the individuals through direct interaction with each other become more optimistic about their conditions.

The findings revealed that mindfulness in comparison with cognitive behavior therapy and consistent with the obtained results of the study conducted by Smith[34] is a more effective method in reduction of anxiety and depression of pregnant women.

Our study has notable limitations. The relatively small size of the sample in this pilot trial provided limited power to detect significant differences between the groups, especially given the positive changes over time in both the control and intervention groups. While inclusion of a control group is a strength of the study design, we did not include a third arm of usual care to control for possible placebo effects in the reading condition.

Since the localization and attention to cultural issues have become more important in consultation, it is recommended that therapeutic compiled protocols should be implemented based on indigenous and Islamic issues in our country's culture for each of these disorders and problems separately.

Conclusion

According to our research, we concluded that both mindfulness based on Islamic- spiritual schemes and cognitive behavioral therapy are effective in reduction of anxiety and depression

of pregnant women. Therefore, both types of interventions can be held for pregnant women in classes before delivery. It is recommended that this study should be repeated while assessing other psychological disorders such as stress, anger, quality of life and self-management behaviors in comparison with other psychological therapies such as training the problem- solving skills and stress management. Considering the results of these researches, the mindfulness based on Islamic-spiritual schemes and cognitive behavioral therapy could be a suitable treatment for pregnant women.

Conflict of Interest: None declared.

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