Original Article

The effectiveness of mindfulness-based cognitive therapy consultation on improving sexual satisfaction of women in reproductive age: A clinical trial study in Iran

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ABSTRACT

Background: Satisfaction with sex is a key element in satisfying marital life, and improves the quality of life. Based on Iranian culture, debate concerning women sexual activity may be considered as a cultural taboo, so sexual dissatisfaction should be taken into account as a warning factor may lead to a reduction in marital instability throughout life and need to be treated. **Objective:** To evaluate the effectiveness of mindfulness-based cognitive therapy on the sexual satisfaction. **Materials and Methods:** This controlled randomized study was conducted on the women who referred to the health centers of … in 2016. Forty eligible women participated in the study and randomly allocated based on computerized scheduling number table into mindfulness-based cognitive therapy and waiting list groups (number in each group = 20). The mindfulness group participated in two groups of 10 women in 8 counseling sessions with a mindfulness-based cognitive therapy approach to improving sexual satisfaction, and the waiting list group received routine sexual consultation in health care centers. Participants' sexual satisfaction as main outcome was measured using Larson Sexual Satisfaction Questionnaire at baseline, 8 and 12 wks following treatment. **Results:** The maximum sexual satisfaction score of the Larson questionnaire was 125 and the scores of the mindfulness group before the intervention, at the 8th week and the 12th week were 69.55 ± 4.70, 108.25 ± 8.75 and 111.00 ± 8.45 and the waiting group were 66.70 ± 4.49, 60.80 ± 8.91 and 57.85 ± 9.33 respectively ($p < 0/001$). The results showed that mindfulness-based cognitive therapy has increased the sexual satisfaction of women of reproductive age compared with the waiting list group. The total score of satisfaction due to conducting mindfulness technique in the mindfulness group at the 8thwk was 10.00±0.008 and at the 12thwk was 9.90±0.45 out of 10 ($p=0.955$). **Conclusion:** Results showed sexual dissatisfaction without appropriate psychological intervention would be increased and group mindfulness-based cognitive therapy was effective and feasible in improvement of sexual satisfaction in women with low sexual satisfaction; and could be used in management and education of affected women.

Keywords: Cognitive therapy, Mindfulness, Sexual Satisfaction, Women, Iran.

Introduction

Sexual satisfaction as one of the elements of marital satisfaction is an important index for a successful marriage, survival and health of the family [1]. It defines as couple's satisfaction with their sexual relationship and their ability to enjoy themselves and each other [2, 3]. This issue not just physical pleasure and includes all of the remaining emotions after the positive and negative aspects of the sexual relationship [4-6]. Sexual dissatisfaction has been purposed to be associated with triggering of many psychosomatic symptoms including migraine headaches, symptoms of premenstrual syndrome, and chronic arthritis and also depth marital problems in couple's relationship [7-9].

It seems that many Iranian couples are suffering from sexual dissatisfaction but shame, embarrassment or distress might

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prohibit them from discussing their concerns with either a psychologist or a physician [10, 11]. Learning the necessary skills for having a satisfactory sexual relationship could be achieved by providing appropriate education for the couples, counseling programs which are provided by well-educated health professionals might increase couples' sexual satisfaction [12, 13]. By providing counseling, education and necessary information about the physiology of human's sexual response, problems would gradually be resolved and the couples would be able to effectively and successfully encounter their sexual problems [14]. Therefore it is important to evaluate the condition of the sexual relationship which has an important role in creating a pleasant marital life [15].

So far various methods including interactive behavior analysis, interventions based on the cognitive-behavioral theory of choice, solution-oriented counseling, emotion-focused treatment and mindfulness-based cognitive therapy approach have been used for increasing the sexual satisfaction of couples [10, 11, 15, 16].

One of the treatment methods is mindfulness-based approach as one of the newest developments in cognitive therapies [17, 18]. This treatment is a short-term intervention using the mindfulness-based stress reduction model and the principles of cognitive therapy have been added to it [17]. Mindfulness is an accepting awareness without judging anything that is occurring at the present moment [17-19]. Although stress reduction is one of the main mechanism of this approach, besides strengthening the individual against stressful factors, mindfulness exercise would help the individual feel peace and tranquility in every activity and releases them from the negative thoughts about past incidents and future probabilities; therefore it would decrease the stress [20, 21]. Stress has a significant negative effect on sexual relationships [22]. So stress and anxiety are barriers to achieving healthy interpersonal relationships and since these relationships have an important role in sexual satisfaction, the barriers could be resolved by present-moment non-judgmental awareness and acceptance [11]. The main mechanism of mindfulness seems to be self-regulation, because the repeated focusing of attention on a neutral stimulus or physiological sign, such as breathing, creates a suitable environment that increases the overall attention of the woman and reduces the disturbing stimuli and stresses include sexual stress. This process involves emotional / cognitive changes. In turn, the reduction of the levels of the sexual inhibition system (SIS) might result from unknown neurobiological changes. The probable effect of this variable is to enable individuals to be aware of their strengths and weaknesses and their shared life at any moment, and this awareness, in the words of Burpi and Langer, provides a conceptual harmony for couples and enables them to communicate, evaluating and restoring the self and its problems [23], then this change has a significant effect on improving the quality of sex by increasing the ability of people to perceive their physical symptoms. Paying attention to the genitalia significantly increases the feelings and ability of women. At stimulation, their perception of penis flexibility increases. Improvement of focus was taught as a direct result of the skills of the conscious mindfulness of medicine, responsible for the change in sexual stimulation. These mechanisms involved in the effects of mindfulness, cognitive / emotional involvement, and not direct physiological change [24].

Mindfulness-based intervention could have a positive effect on sexual desire, arousal, lubrication, orgasm, sexual satisfaction and sexual boredom among women with sexual problems [3, 25, 26]. The aim of the mindfulness exercises is to focus on finding joy in the sexual partner [27]. Results of the studies showed that the desire, arousal, orgasm and sexual satisfaction, anxiety and sexual problems of the women in the intervention group who received mindfulness therapy was significantly improved compared to the control group [28, 29]. Although two studies have indicated the effectiveness of mindfulness approach on treating sexual problems, this effect on sexual satisfaction has not been deeply and specifically evaluated in Iran [11, 30].

Considering the importance of sexual satisfaction in marital life and the undesirable effect of sexual dissatisfaction on physical and mental health and its relationship with the health of family and society: it has not been integrated into the Iranian health education and consultation programs, yet. Recommended approaches for promoting sexual and marital satisfaction are often time-consuming and expensive and require multiple sessions and somehow incompatible with Persian-Islamic culture and their acceptance in the community is low. [31] Therefore considering feasible solutions, fast-acting treatments which are compatible with culture can be very efficient and necessary.

Regarding cultural issues related to sexual matters in Iran such as the lack of sufficient information on sexual issues and the existence of inappropriate beliefs and attitudes towards this issue, debate concerning women sexual activity is considered as a cultural taboo, it is among the families, especially the newly married couples, which has resulted in the ruin of many families. [31, 32], the researchers are considering whether mindfulness-based intervention approach is effective in other countries, like Iran. This study was aimed to evaluate the effectiveness of group counseling with mindfulness–based cognitive therapy approach on improvement of sexual satisfaction among women in reproductive age.

Materials and Methods

Design

In this parallel controlled randomized trial participants were all of productive-age women who referred to four health centers of … (……, and … health centers) that were randomly selected from the four major geographical regions of … (North, South, West, East), The purpose of this sampling was to reduce the choice of bias and, on the other hand, to have more access to those who have the conditions to enter the study. The methodology of the study is summarized in diagram 1.

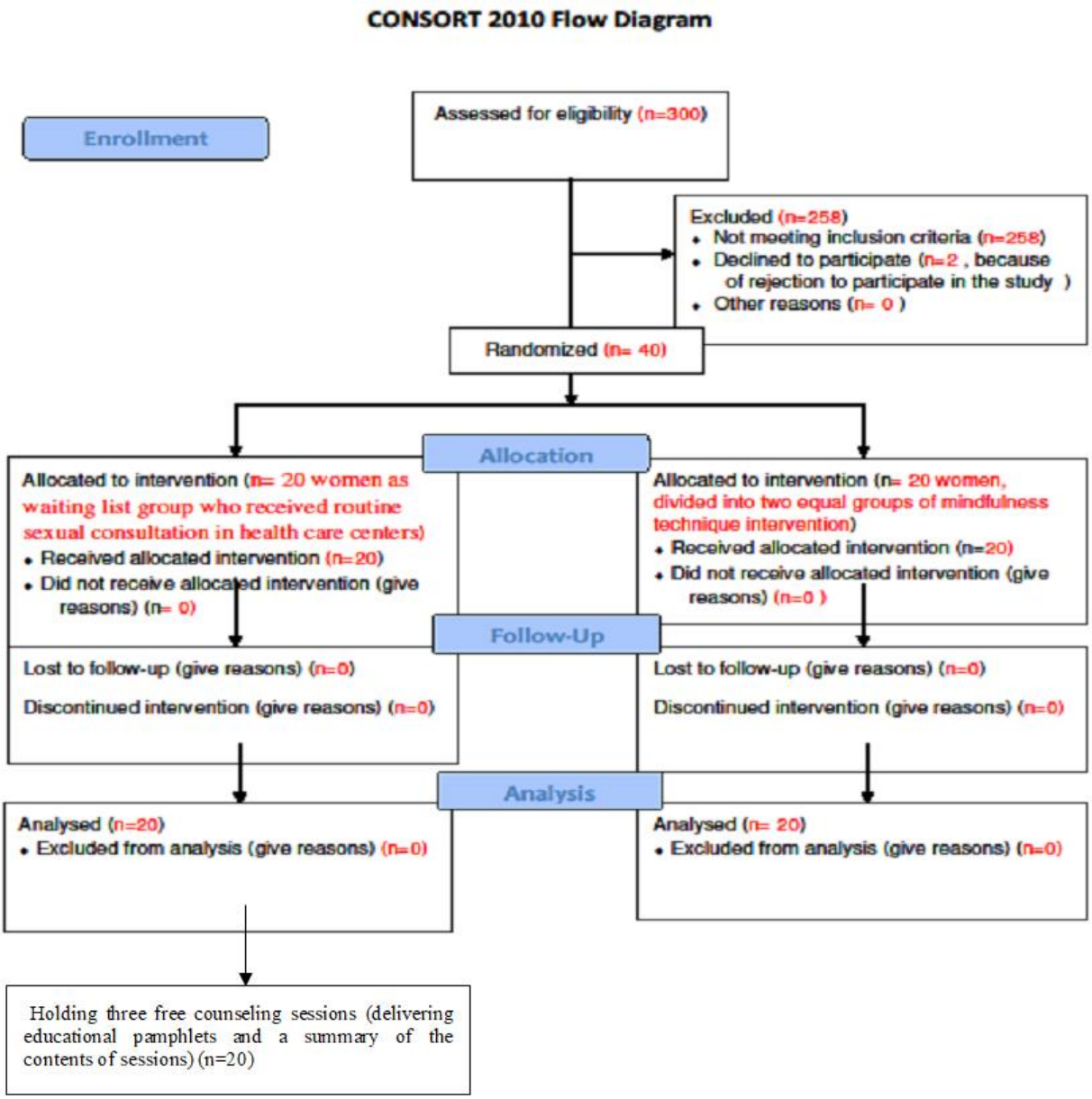

Figure 1. Steps of conducting the study

Participants

After obtaining written informed consent (by explanation of study aim and benefits for her and other women like her in community and awareness of her sexual satisfaction score) three hundreds 15-49 yr old Iranian married women for at least 1 yr who were, able to read and write completed the Larson Sexual Satisfaction questionnaire in order to exact select women with sexual satisfaction<75 from the Larson Sexual Satisfaction Questionnaire as one of inclusion criteria and assessing other inclusion criteria. Inclusion criteria were a score of <75 from the Larson questionnaire, having a shared room or bed with husband, willingness to participate in the study, not receiving another psychological intervention at the same time, not being on the verge of divorce or separation (not having appointment or a registration folder for a divorce in the court or not having the intentions for it),lack of underlying chronic physical and mental diseases according to the participates history , non-use of drugs affecting sexual function, not having a diagnosed sexual problems by a psychiatrist. The exclusion criteria were unwillingness to participate in the study at any time, ,occurrence of inconvenient incidents during the past 6 months that had led to decreased sexual and marital satisfaction (such as death or severe illness of the loved ones and relatives, decision for separation and filing for divorce at the court), missing more than two sessions, not completely answering the questionnaire, not performing the homework and getting pregnant during the sampling process and not changing living place during sampling period. Being not committed for performing the exercises defined as withdraw criteria (participating in all the sessions or at least 7 counseling sessions and performing at least 75% of the homework according to the counselor's report)

By reviewing similar studies and considering a significant level of 0.05, test power of 80%, S = 5 as the score of sexual satisfaction and a minimum score of 4 for achieving a significant difference, the sample size was calculated as 34 and after

considering a 15% for drop out, the sample size was increased to 40 (20 for each group) calculated by the following formula:

$$n = \frac{(Z_{\frac{\alpha}{2}} + Z_{\beta})^2 2s^2}{(\bar{x}_1 - \bar{x}_2)^2}.$$

Participants were recruited and selected by the Second Author as MSc student in Midwifery consulting under supervision a Reproductive Health specialist in research team, after conducting personal interviews about sexual satisfaction and necessary vaginal examination for rejecting organic reasons for sexual dissatisfaction if the women consented to undergo bimanual examination and speculum examination in health care center.

From 300 women who completed the Larson Sexual Satisfaction questionnaire, and were assessed regarding other inclusion criteria, 42 women who had all mentioned inclusion and exclusion criteria selected as study subjects but two of them did not consent to continue participation in the study. Finally forty [33] women participated in the study. The women were randomly allocated (using computerized scheduling number table) to two groups (of equal number), receiving either group mindfulness approach(n=20) or women who recieved routine sexual consultation in health care centers after awareness of their low sexual satisfaction as waiting list group (n=20) for eight weeks. Control group entitled as waiting list group because they were informed regarding their low sexual satisfaction after completing Larson Sexual Satisfaction Questionnaire and they needed to seek resolving their sexual problem in health care center by consultation. They should wait to recieve needed consultation based on mindfulness technique if effectiveness of mindfulness technique would be approved at the end of study. The number of participants in group sessions with mindfulness approach should not exceed 14, because the effectiveness of psychotherapy would decrease as the numbers of participants increase [17]. Therefore, the mindfulness group was divided into two therapeutic groups using the table of random numbers.

Outcome Measures

Participants' sexual satisfaction as main outcome was measured using Larson Sexual Satisfaction Questionnaire at baseline, 8 and 12 wks following treatment. Women in mindfulness-based cognitive therapy and waiting list groups completed the Larson sexual questionnaire at baseline, 8 and 12 wk after intervention as follow up sessions. Also the level of satisfaction with the mindfulness method was measured using 5 questions with a linear scale from 0 (dissatisfaction) to 10 (complete satisfaction) that was put at the end of the questionnaire, which were answered by the intervention group at the 8th and 12thwk of the intervention.

Larson Sexual Satisfaction questionnaire

Data gathering tool was the Larson Sexual Satisfaction questionnaire with Cronbach's α of 0.9, reliability of 0.93 and validity of 0.76 that has 25 items and questions 4, 5, 6, 7, 8, 9, 11, 14, 15, 18, 20, 24 and 25 are scored in reverse. Questions are scored based on a 5-point Likert scale from 1 = never to 5 = always [34]. Scores were categorized as sexual dissatisfaction for a score of 25-50, low sexual satisfaction for a score of 51-75, moderate sexual satisfaction for a score of 76-100, and high sexual satisfaction for a score of 101-125 [15]. In Iran, the validity and reliability of this questionnaire has been reported as 0.90 and 0.98 respectively and its Cronbach's α was 0.93 [14]. Other tools were used including genital examination, bimanual examination and interview in order to taking gynecologic history in this study.

Procedure

Sampling was conducted in two groups in health care centers. Participants of the mindfulness-based cognitive therapy group attended eight counseling sessions with mindfulness-based cognitive therapy approach for improvement of sexual satisfaction. The sessions were held in two groups of mindfulness-based cognitive therapy (two groups with 10 women=20 women) for 2 hours per week based on prior coordination between the researcher and the participants, preserving Islamic Relics, at a private clinic for providing appropriate physical environment and necessary facilities (mindfulness-based cognitive therapy need a place for appropriate space in order to relax of mind and body and other requirements for learning the mentioned technique, so health care centers had not enough space and other required facilities). The other reason for selecting the private clinic as the place for counseling sessions was to separate the intervention group and the waiting group from each other to prevent any possible effect of the interventional program on the waiting group. All of the counseling sessions were free of charge. Table 1 represents the program of the sessions [18, 25, 30]. The content of the sessions were designed based on the mindfulness based treatment protocol by Brotto etal. and were reviewed by the research team [25].

The waiting list group received no psychotherapy counseling services based on mindfulness technique but they received routine sexual consultation in health care centers because they were aware of their low sexual satisfaction during the entire time of the study. In case of effectiveness of counseling with mindfulness-based cognitive therapy approach on the improvement of sexual satisfaction among women of reproductive age for the intervention group, educational pamphlets and a summary of the contents of sessions were provided for the waiting group too.

The sessions were conducted by the first author who is studying a Master degree on counseling in Midwifery and has also passed a complementary course about mindfulness-based approach, under supervision of the third author as a clinical sexologist and MSc in Psychology.

Reminding the homework and participation in group sessions were conducted by daily messages from the first author. Since the waiting list group received no intervention based on mindfulness technique except receiving routine sexual

consultation in health care centers), to regard the ethical considerations, at the end of the study educational pamphlets and a summary of the sessions were distributed among the participants of the waiting group and three free counseling sessions were held for them.

Table 1. The interventional mindfulness-based cognitive therapy approach program for improvement of sexual satisfaction of women

Sessions	Topic	Contents
First	Automatic guidance	Conducting the baseline test, determining the aims of the study, setting the general ground rules considering the confidentiality of individuals' personal lives, inviting the participants to from 2-person groups and introduce themselves to each other and then to the other members of the group, mindfulness eating a raisin (it is a kind of meditation in which the participants would spend few minutes for evaluating the sensory-visual, olfactory, taste and touching features of a raisin), exercising physical examination Homework: performing physical examination for 6 days. Discussing the schedule for weekly sessions and distributing the pamphlets of the first session
Second	Encountering obstacles	Exercising physical examination, reviewing the exercise, reviewing the homework, exercising thoughts and emotions, recording pleasant incidents, seated meditation for 1-10 min Homework: Daily mindfulness performing of a routine activity (brushing the teeth, eating the food…)
Third	Presence of mind	Exercising seeing and hearing meditation, seated meditation, breathing space for 3 min Homework: recording pleasant incidents, focus on how to talk to husband concerning sexual desires, focus on having pleasant dialogue regarding sexual relationship with husband of sex life
Fourth	Remaining in the present moment	Exercising seeing and hearing meditations, 40 min of seated meditation, awareness of breathing, body, sounds and thoughts, exercising revision, sexual anatomy and physiology, exercise on increasing sexual self-efficacy homework, determining the homework Homework: seated meditation
Fifth	Acceptance	40 min of seated revision meditation, exercising revision, homework, breathing space, reviewing, Scans the body with attention and concentration of reproductive organs, focus on the pleasant moments of sex life, focus on ways to open a spouse's sexual intercourse about couples' sexual desire, focusing on how to flirt and enjoy this phenomenon. Homework: guided seated meditation
Sixth	Thoughts are not real	40 min of seated visualization meditation, seated meditation, exercising revision, homework, preparation for ending the course Homework: short guided meditations for at least 40 minutes, 3-minute breathing three time a day, focus on feelings and genital changes such as warming up, getting licked, learning to focus on sensitive points in both couples preparation for ending the course, emphasizing the availability of privacy space to reduce stress for marital relationships.
Seventh	Self-care	Indicating the relation between creation and activity Homework: 3-min breathing space not just three time a day but whenever felt stress or difficult emotions in sexual relationship and their solutions in view of the women
Eighth	Applying the educations	Reviewing past topics, feedback, summing up the sessions, and performing the post-test

Editorial consideration

The present study was approved under the ethical code of IR.SSU.REC.1395.31 by University of Medical sciences Shahid Sadoughi Yazd and registration code IRCT2016062128560N1

Statistical analysis

Data were analyzed via SPSS (Statistical Package for the Social Sciences, version22.0, SPSS Inc, Chicago, Illinois, USA) using paired t-test, repeated variance analysis, Bonferroni post hoc test and Wilcoxon test with a significant level of $p<0.05$.Kolmogrov-Smirnov test was used to examine the normality of sexual satisfaction and marital satisfaction,

Result

No sample loss occurred during conducting the study, and all of the questionnaires were filled completely and their data were analyzed. The mean age and standard deviation of the mindfulness group was 33.75±4.33 yr and of the waiting group was 35.70 ± 6.9 yr ($p=0.261$). Regarding the educational level, most of the women in the mindfulness group (55%) and 60% of the waiting group had diploma ($p=0.494$).In the mindfulness group before the intervention questions 6, 7, 8, and 10 of the Larson question had the lowest scores and questions 5 and 22 had the highest scores. At the 8thwk questions 9, 11, 18 and 21 had the lowest scores and questions 14, 15, 16, 20, 22, and 25 had the highest scores. The lowest scores at the 12th week of intervention belonged to questions 3 and 13 questions and the highest scores belonged to questions 1, 2, 6, 14, 15, 17, 19 and 20. Table 2 represents the results of variance analysis with repeated measures for comparing the mean scores of sexual satisfaction between both groups at three measurement stages (before the intervention, at the 8th and the 12thwk of the intervention) ($p<0.001$). Results of table 3 shows that according to the Bonferroni post hoc test for interaction

effects, comparing the mean scores of sexual satisfaction between before the intervention and at the 8th and the 12thwk of the intervention in the mindfulness group, the mean score of sexual satisfaction before the intervention was significantly lower than the 8th and the 12thwk of intervention (p<0.001), but no significant difference was observed between the mean scores of sexual satisfaction at the 8thwk and at the 12thwk (p=1.000). Also according to the results of post hoc test for interaction effects, comparing the mean score of sexual satisfaction before the intervention and at the 8th and the 12thwk of intervention in the waiting group, the mean score of sexual satisfaction was significantly higher before the intervention compared to the 8th and 12thwk (p<0.001), and no significant difference was observed between the scores at the 8th and the 12thwk (p=0.943). Results of table 4 shows that, according to post hoc test for interaction effects for comparing the mean scores at three measurement stages between both groups, the mean score of sexual satisfaction had no significant difference between both groups before the intervention (p = 0.057), but at the 8th and the 12thwk of intervention, the mean scores of intervention were significantly higher in the mindfulness group compared to the waiting group (p<0.001).Table 5 indicates that the mean and standard deviation of the total score of satisfaction with mindfulness technique, which were measured by 5 questions with a maximum score of 10 for each (adds up to 50 for all the 5 questions), at the 8thwk was 10.00±0.0 and at the 12thwk was 9.90±0.45. According to the Wilcoxon test, no significant difference existed between the total score of satisfaction with mindfulness technique between the 8th and the 12thwk (p=0.955).

Table 2. Comparison of the mean sexual satisfaction scores in the mindfulness and waiting list groups before intervention, week 8 and week 12

Change source	Variable	Type III Sum of Squares	DF	Mean Square	F	P
Intergroup	Group	35673.00	1	35673.00	623.18	*<0.001
	Error	2175.25	38	57.24		
Inside the group	Measure time	7128.80	2	3564.40	58.89	*<0.001
	Time of measurement * Group	15172.46	2	7586.23	125.35	*<0.001
	Error	4599.40	76	60.51		

Repeated measures analysis of variance

Statistically significant*

Table 3. Comparison of mean changes in sexual satisfaction score in the mindfulness group and waiting list group before intervention, week 8 and week 12

Variables	MEASURE_1	MEASURE_2	Mean Difference	Std. Error	p-value
Mindfulness group	Before intervention	Week 8	-38.70*	2.28	<0.001*
	Week 8	Week 12	-2.75	2.89	1.000
	Before intervention	Week 12	-41.45*	2.14	<0.001*
Waiting list group	Before intervention	Week 8	5.90*	2.28	0.041
	Week 8	Week 12	2.95	2.89	0.943
	Before intervention	Week 12	8.85*	2.14	0.001*

Bonferroni post hoc test

Statistically significant*

Table 4. Comparison of mean sexual satisfaction scores between the mindfulness and waiting list groups before intervention, week 8 and week 12 according to

Time measurement	Sexual satisfaction*		Mean Difference between the two groups	SE	p-value
	Waiting list group	Mindfulness group			
Before intervention	66.70±4.49	69.55±4.70	2.850	1.452	0.057
Week 8	60.80±8.91	108.25±8.75	47.540	2.792	0.001**
Week 12	57.85±9.33	111.00±8.45	53.150	2.815	0.001**

* Data presented as mean ±SD.

** Statistically significant

Bonferroni post hoc test

Table 5. Comparison of mean and standard deviation of women's satisfaction with mindfulness method at week 8 and week 12 after intervention in the mindfulness group

Variables	Week 8	Week 12	p-value
Total Satisfaction of Mindfulness Method	10.00±0.00	9.90±0.45	0.317
Enjoying from mindfulness exercises	9.30±0.98	9.30±0.98	1.000
Easy to do mindfulness exercises	8.75±1.33	8.45±1.23	0.614

The desire to continuing mindfulness exercises in the future	8.75±1.33	8.85±1.35	0.792
Recommendation of mindfulness exercises to other women with low sexual satisfaction	9.10±1.62	9.35±1.31	0.623
Total	45.90±3.21	45.85±3.27	0.955

Data presented as mean ±SD. Wilcoxon test

Discussion

The present study was conducted to evaluate the effectiveness of counseling with mindfulness-based cognitive therapy approach on the improvement of sexual satisfaction among women of reproductive age. Results showed that the changes in the sexual satisfaction scores during the three measurement stages between the intervention and the waiting list groups were statistically significant and using mindfulness interventional method had significantly increased the score of sexual satisfaction in the intervention group compared to the waiting list group; this result is in line with the results of Shiukhy Soqanloo et al [11]. But in the present study, in the waiting list group, although they received routine consultation provided in health care centers, the score of sexual satisfaction at each measurement stage was lower than its prior stage and the difference between before the intervention and at the 12th week of intervention was statistically significant; this result was not similar to the results of Shiukhy Soqanloo et al regarding their waiting list group. It seems that the reason for this difference might be the differences in the inclusion criteria, the sample size (25 women in the study of Shiukhy Soqanloo etal and 40 in the present study), the rate of sample loss and follow-up period. It must be noted that no sample loss occurred in the present study. Not following up the patients after the end of the counseling sessions and were some of the limitations of the Shiukhy Soqanloo et al study. These limitations did not exist in the present study and the follow-up was conducted one month after the intervention and women's skill was evaluated. Also the reason for the reduction of the scores in the waiting list group (control) was probably due to the presence of the an approved physiologic factor entitled Hawthorne effect that it may have been the reason for this change in scores in control group (This effect may occur when a subject knows she/he is observed in a study). Based on Iranian culture being of the utmost importance on the waiting list for receiving an appropriate intervention based on psychological approach and due to an already-unspoken clearly issues like sexual problems, might be the reason for reduction of scores; although non significant.

Most of the related studies evaluated the effect of mindfulness on different aspects of sexual matters including sexual disorders, sexual distress and sexual disability, sexual cycle, reducing sexual pain, sexual concentration, and sexual satisfaction. In all of these studies, mindfulness-based interventions had an appropriate therapeutic effect on the mentioned Problem [26, 28, 29, 35-39]. Although in the present study the aim was not to treat sexual disorders but to determine sexual satisfaction and the used Larson questionnaire mostly evaluates mental and emotional aspects of sexual satisfaction, it seems that mindfulness might be an appropriate counseling technique for this matter. However, it seems that the reason for similarity between the results of effectiveness of mindfulness in studies about sexual matters and the present study is that mindfulness would lead to the concurrence of sexual stimulation with genital stimulation in women [40]. This might lead to more desire for having sexual relationship and consequently by creating positive thoughts, might cause more satisfaction with the sexual relationship. The main mechanism of mindfulness is affecting emotional processes [21]. Studies that have been conducted in Iran indicated that mindfulness in effective in decreasing negative automatic thoughts, inefficient approach, depression and anxiety, obsessive compulsive disorder and sexual disorders [11]. Spij Kerman et al. also believed that mindfulness has a beneficial significant effect on depression, anxiety, wellness and concentration [33]. Mindfulness would lead to success in couple's relationship, increase in emotional performance and individual's stress management [41]. Therefore mindfulness technique, which is a cognitive therapy method, by causing positive mental and emotional effects, such as decreasing stress and anxiety, might cause improved sexual satisfaction. In a study that was aimed to compare cognitive-behavioral approach with mindfulness-based intervention for women with sexual distress, results indicated that this psychological technique was more effective than cognitive-behavioral approach [42]. On the other hand, it might be concluded that the reason for similarity between the results of the mentioned studies and the present study was the relation between satisfying sexual needs and their resulted sexual satisfaction [13]. Relationships that are associated with anger or frustration would disturb the sexual relationship between the spouses that would consequently result in sexual dissatisfaction or even sexual disorders [1]. couple's communication problems, couple's manner of coping with their emotions that are dominant during their relationship is of great importance and since mindfulness approach isalso focused on emotions [35, 43], it could be one of the most important effective factors on improvement of quality in sexual relationship. Therefore it seems that using this approach might be effective on modification of the emotions processing, improvement of emotional skills, intimacy and quality of couple's relationship [23, 43]. When couples increase the mindfulness quality of their sexual relationship, the intuition, intimacy and quality of their marital relationship would be improved and they would become more predictable for each other [43].

Another finding of the present study was the level of satisfaction with the interventional method which has not been evaluated in similar studies. It must be noted that in the present study, the level of satisfaction with the mindfulness interventional method, joyousness of the mindfulness exercises, effortlessness of

performing the exercises of mindfulness, willingness to continue the mindfulness exercises in the future, and recommending the mindfulness exercises to other women with low sexual satisfaction, were evaluated. Results showed that women reported good satisfaction with the interventional method and their willingness to continue the exercises after the end of the sessions and even in the future and also recommending the exercises to other women with low sexual satisfaction would indicate their satisfaction with the mindfulness interventional approach. It seems that the reasons for willingness to continue this study and recommending it to others were its affordability, not requiring any special tools or facilities, not being time-consuming, and joyousness of the exercises. Another reason might be that people with high mindfulness would attend their own and their spouse's opinions more carefully and this would lead to a dynamic relationship and prevent coldness in their relationship and eventually improve the quality of their sexual relationship. People with high mindfulness are not only aware of themselves and their inner and outer positions, but are also aware of the changes in the appearance and behaviors of their spouse. Awareness toward changes and empathic attention would be associated with improve quality of sexual relationship [43]. Educating sexual matters and marital counseling have important roles in family health, decreasing sexual violence, preventing sexually transmitted diseases, having positive approach toward sexual relationship, sexual pleasure, and decreasing conflicts in the family and would eventually lead to couple's sexual satisfaction [14, 44]. So, after observing the positive effect of this method on their sexual satisfaction, people would be willing to continue this method.

In the present study, the researchers were intended to use a valid and reliable tool in compliance with the Iranian culture to achieve reliable results; so the Larson questionnaire, was used which has been previously used in many Iranian studies and its psychometric features are acceptable and understanding its questions are appropriate for the target group, but this questionnaire is not have sub scale; therefore the effectiveness of mindfulness on every sub scale and aspect of women's sexual satisfaction was not evaluated. However, this limitation was resolved by presenting questions in the results section with a maximum and minimum score. Performing a similar study on the sexual satisfaction of the couple is recommended. The need for larger randomized controlled trial that uses this treatment approach/intervention is suggested.

Conclusion

Since one of the aspects of satisfaction with life is sexual satisfaction in the marital life, improvement of sexual satisfaction might decrease the deterioration of the marital status and this would lead to increased quality of life and marital satisfaction. Based on Iranian culture, debate concerning women sexual activity is considered as a cultural taboo, so sexual dissatisfaction without appropriate psychological intervention would be increased. According to the results of the present study mindfulness-based counseling approach could be used in improvement of sexual satisfaction in women with low sexual satisfaction the feasibility and the acceptability of mindfulness based cognitive therapy for a sample of Iranian women. When couples improve the mindfulness quality of their sexual relationship, the intuition, intimacy and quality of their marital relationship would be improved and they would become more predictable for each other. Also it would be helpful in the field of sexual health and fertility education and research for improvement of women's sexual satisfaction.

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Conflict of interest

The authors of the article state that there was no conflict of interest in the study.

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