Research Paper

The Investigation of the Effect of Group Cognitive-behavioral Counseling on Stress and Anxiety in Menopausal Women: A Randomized Clinical Trial

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Abstract

Background and objectives: Several reasons have been identified as the causesof menopause anxiety and stress. Among these causes, diseases and symptoms associated with estrogen deficiency such assleep disturbances and hot flashes as well as cultural issues such as negative attitudes towards menopause can be mentioned. Consultation can be use fulto assist women in coping with these changes and reduce problems. Therefore, the objective of this study was to determine the effect of the cognitive-behavioral therapy on stress and anxiety in post-menopausal women in Tuyserkan, Iran.

Materials and method: In this randomized clinical trial, 76 menopausal women who referred to health centers of Tuyserkan from September to December 2016 participated in this study. Six CBT sessions were held. The Depression, Anxiety, and Stress Scale (DASS-21) was applied. After completing six CBT sessions and also one month later, the measurements were done. The data were analyzed using the Mann-Whitney and Friedman tests.

Results: Comparisons of stress and anxiety scores between the two groups before initiating CBT was not significant (P> 0.05). Within-group comparisons of stress and anxiety scores before and after CBT and one month later showed significant changes in CBT group (P< 0.001). These changes were not significant in thecontrol group(P> 0.05).

Conclusion: It is suggested to use CBT for menopausal women to improve the quality of life of this group.

Keywords: stress; anxiety; menopause; cognitive-behavioral therapy.

Introduction

Menopause is defined retrospectively as the last menstrual period followed by 12 months of amenorrhea. Average age at menopause is 51 years (1). In Iran, average menopause age is 47.8 years (2). Despite the rise in life expectancy for women, menopause age has remained constant. Therefore, with the increased life expectancy, women spend nearly one-third of their lifespan after menopause. According to the latest population and housing census by the Statistical Center of Iran in 2011, there were 8,070,430 women in the age range of 50 to 65 years (10.74% of the total population) (3). Since the ovaries stop producing significant amounts of estrogen after menopause, the symptoms and diseases associated with estrogen deficiency become important in women health (1). Along with the menopause and reverse metabolic changes that occur during the transition from pre-menopause to post-menopause phase, women are susceptible to various diseases such as osteoporosis, osteopenia (4, 5), high blood pressure, and cardiovascular diseases (6-8). Also,

psychological and cognitive consequences of menopause can affect the women's quality of life. These include sleep disturbances, fatigue, impaired short-term memory, irritability, stress, anxiety, feelings of sadness, anger, lack of motivation, difficulty in concentration, mood changes, and depression (2). Many women report difficulty in concentration and emotional instability during this period (1). Research shows that depressive symptoms occur more frequentlyin theperimenopausal period (9) such that 26 to 33% of women experience their first depressive episode in their menopause (10).

Several factors have been identified asthecausesof anxiety and stress associated with menopause. Among these causes, cultural issues, the loss of a motherhood role, the empty house syndrome, the inevitable death of the spouse, the care of the elderlyparent, negative attitude towards menopause, long-term menopause, chronic pain and disability, and menopausal symptoms such as change in sexual desirescan be mentioned(11). In a study by Rabieiet al. (12), it was shown that 9.2% of menopausal women had depression and 4.2% had anxiety. These problems not only cause significant stress and disability for women but also exert a double burden on the health care system (2).Considering physical and psychological problems that threaten women in this period, it seems that treatments that can help women cope with these problems, especially psychological ones, will be useful. One of the effective ways is cognitive-behavioral therapy (CBT). This therapy helps individual to think differently and as the result of this new thinking, he/she can confront undesirable events with more acceptable behaviors (13). Nowadays, CBT is used in the management of many conditions such as anxiety, depression, phobia, and stress (14).

There is limited attention to menopausal women in health centers and in the orders of the Ministry of Health and Medical Education. Considering and the effect of mood changes in menopausal transit time on the quality of life of the affected women, this study was done to assess the effect of CBT on stress and anxiety in menopausal women in Tuyserkan, Iran in 2016.

Materials and Method

This was a randomized clinical trial. The participants were sampled using the convenience sampling method. The population consisted of menopausal women who referred to Health Centers of Tuyserkan, Iran.

The inclusion criteria consisted of normal menopause (not as the result of medication or removal of the ovaries), age range of 47 to 57 years, the time passed from beginning of menopause as 1 to 4 years, no acute or chronic systemic condition in the past 12 months resulting in the inability of the participant to attend the sessions, no grief for a family member in the past 3 months, no stressful factor such as severe disease of spouse or children, no use of hormonal therapy to reduce menopausal symptoms, able to speak Persian, not having severe mental diseases or use of psychotropic medications, not being addicted to drugs, not having suicidal thoughts, not having previous history of psychosis or suicide, and not attending relaxation, yoga and similar classes. Exclusion criteria were not attending two or more CBT sessions, using hormonal therapy during the study, occurrence of an unexpected stressful event during the study, and unwillingness to continue participation in the study.

The sample size was calculated as 90 participants (45 in each group) using the formula of comparing a quantitative variable between two groups and similar study (15). Randomization was done by writing numbers on separate piece of papers and then asking the participants to pick a paper. Ninety numbers were written on the papers and put in a bowel. Those who picked even numbers were assigned to control group. Those who picked odd numbers were assigned to theintervention group. To ensure that randomization is done at its best form, a colleague who was a midwife and blinded to the process was asked to manage group assignment and randomization.

After getting informed consent, the Depression, Anxiety, and Stress Scale (DASS-21) wasapplied. Those who had high numbers on this scale which indicated severe depression or anxiety were referred to psychiatrists.

Blinding was done for both examiner and the subject. The participants were blinded to control or intervention group. Also, the participants in the groups were identified by codes (for example, 1and 2) and the colleague who performed the analyses was blinded to the participants. As the intervention was done by the researcher and he was aware of the intervention type and the groups, blinding was not done for the researcher.

The DASS-21 is a standard scale and its reliability and validity have been verified in Iran. In a previous study, it was shown that the correlation coefficient between stress and depression was 0.48, a coefficient of 0.53 between anxiety and stress, and coefficient of 0.28 between anxiety and depression (16). In another study, to determine the reliability of this scale in Iran, Cronbach's alpha for depression, anxiety, and stress was respectively 0.81, 0.74, and 0.78 (17). In another study, thecorrelation between the DASS subclasses with Beck's Depression Inventory was 0.70, between stress subscale of the DASS and Zung Anxiety Scale was 0.67, and between Stress subscale and the Perceived Stress Scale was 0.49 (18).

Each subscale of the DASS has 7 questions and the total score is the sum of scores to the related questions. Each question is scored from 0 (not true about me at all) to 3 (true about me always). The total score of each of these subscales should be doubled. Then, the severity of symptoms can be determined (18).

The next tool used was a data collection form which contained 19 questions about demographic information and obstetric data. This form was developed by the researcher and approved by the faculty of Nursing and Midwifery, Kermanshah, Iran.

For the intervention group, CBT sessions were performed in group sessions consisting of 11-12 participants. The total number of sessions was six and each session lasted from 60 to 90 minutes. The sessions were held in the consultation room of the Welfare Center of Tuyserkan. This location was selected becausethis place was very quiet, well-lit with enough appliances.

The collected data were analyzed using SPSS software 23 and applying independent t-test, chi-square, Kolmogorov-Smirnovtest, Mann-Whitneytest, Friedmantest, ANOVA, Tukey'stest, and Kruskal-Wallis test. The significance level was set at 0.05.

The contents of each session were as follows:

Session one: Welcome, the introduction of members and being familiar with each other, emphasis on confidentiality of the issues discussed in each session, describing the physiology of menopause.

Session two: Discussion about the effect of thought on emotions, social supports and the related issues, discussion about the effect of activities on mood, relaxation training by both lecture and practical method (gradual relaxation of muscles, respiration techniques, etc), providing participants with assignments to be done at home.

Session three: The review of previous session assignments and group feedback, becoming familiar with negative thoughts and opinions and the ability to separate them from reality, being familiar with evaluating emotions and the degree of belief in negative thoughts about menopause, doing 10 minutes of relaxation, raising positive thoughts and avoiding negative thoughts in self-care, providing assignment at home.

Session four: Review of the previous session assignment and group feedback, being familiar with automatic thoughts and cognitive errors, decreasing anxiety regarding not being supported by others, becoming familiar with respiratory relaxation techniques, providing home assignment.

Session five: Review of previous session assignment and group feedback, becoming familiar with confirmatory and rejecting evidence of negative beliefs about menopause, performing relaxation for 10 minutes using respiratory techniques, providing home assignment.

Session six: Reviewing the previous session assignment and group feedback, encouraging the participants to talk about the stress and anxiety as a result of menopausal symptoms and discussing about them, developing positive thoughts and decreasing negative thoughts in doing physical activity, exercise, and adhering to healthy diets through becoming familiar with exercise benefits and diet,discussing the side effects of unhealthy diets and sedentary lifestyle, solving misinterpretations through group discussion and Socrates communication, and final conclusion.

After completing the sessions, the measurements were done by the research team in both groups and repeated once more 1 month later. For ethical purposes, the control group received one session of consultation after completion of the second-stage measurements.

Results

In this study, 76 menopausal women in two groups of intervention (38 participants) and control group (38 participants) were studied. Mean (±SD) age of the sample was 53±2.86 years. The proportions of married participantsin intervention and control groups were 81.6% and 97.4%. In the intervention group, 100% of the participants werehousewives and in control group, 94.7% of the participants were housewives(Table 1). Meantime passed from menopause was 2.65 years in both groups. The chi-square test was used to determine whether two groups are matched regarding demographic variables such as marital status, educational level, occupation, body mass index (BMI), number of children, number of deliveries, exercise activity, and income. The results showed that except for income, other factors were comparable in two groups (Table 1).

The results showed that mean values for stress in intervention and control groups before CBT were 10.60 (±4.16) and 9.28 (±2.95). After the study, this score decreased to 4.31 (±2.40) in theintervention group and 8.60 (±3.08) in thecontrol group. One month after completion of the study, this score decreased to 4.38 (±2.36) in theintervention group and 9.21 (±3.23) in the control group (Table 2).

The Friedman test analyses showed that CBT in the intervention group resulted in a change in mean stress scores at different time points (Table 2). However, such changes were not significant in thecontrol group (P= 0.281). In addition, the analyses showed that there is a significantdifference between intervention and control groups regarding mean stress score (P< 0.001). A significant difference was also found one month after CBT between the two groups (P< 0.001); Fig. 1.

The results showed that mean values for anxiety in the intervention and control groups before CBT were 7.73 (±4.18) and 6.36 (±3.70). After the study, this score decreased to 3.36 (±2.19) in the intervention group and 5.71 (±3.04) in the control group. One month after completion of the study, this score decreased to 3.04 (±1.95) in the intervention group and 6.55 (±2.66) in the control group (Table 2).

The Friedman test analyses showed that CBT in the intervention group resulted in a change in mean anxiety scores at different time points (Table 2). However, such changes were not significant in the control group (P= 0.145). In addition, the analyses showed that there is a significant difference between theintervention and control groups regarding mean anxiety score (P< 0.001). A significant difference was also found one month after CBT between the two groups (P< 0.001); Fig. 2.

The Kruskal-Wallis test analyses showed that there was no significant difference between mean score of stress and anxiety in each subgroup of marital status, education, bodymass index, number of children, number of deliveries, sports activity and income in postmenopausal women after the intervention. (P> 0.005).

Table 1: Comparison of demographic variables between intervention and control groups

| Variable		Intervention group	Control group	X^2	df	P value
Marital status	Married	31 (81.6%)	37 (97.4%)	5.19	2	0.074
	Single	5 (13.2%)	1 (2.6%)			
	Divorced/widower	2 (5.3%)	0			
Education	Primary school	11 (28.9%)	5 (13.2%)	2.87	2	0.238
	Secondary school	26 (68.4%)	32 (84.2%)			
	High school diploma and university	1 (2.6%)	1 (2.6%)			
Occupation	Housewife	38 (100%)	36 (94.7%)	2.05	1	0.152
	Clerk and retired	0	2 (2.6%)			
BMI	18.5 to 24.9	9 (23.7%)	6 (15.8%)	1.04	2	0.592
	25 to 29.9	18 (47.4%)	22 (57.9%)			
	> 30	11 (28.9%)	10 (26.3%)			
Number of children	No child	5 (13.2%)	1 (2.6%)	4.82	3	0.185
	1 to 2	5 (13.2%)	9 (23.7%)			
	3 to 4	21 (55.3%)	24 (63.2%)			
	≥ 5	7 (18.4%)	4 (10.5%)			
Number of deliveries	No delivery	6 (15.8%)	1 (2.6%)	2.09	3	0.069
	1 to 2	3 (7.9%)	9 (23.7%)			
	3 to 5	24 (63.2%)	25 (65.8%)			
	≥ 5	5 (13.2%)	3 (7.9%)			
Exercise activity	No exercise	9 (23.7%)	7 (18.4%	0.341	2	0.843
	Regular exercise	8 (21.1%)	8 (21.1%)			
	Sporadic exercise	21 (55.3%)	23 (60.5%)			

Table 2: comparison of depression scores in intervention and control groups before and after the cognitive-behavioral therapy

Variable	Group	Before intervention	Immediately the following intervention	One month after intervention	P value*
		Mean (±SD)	Mean (SD)	Mean (SD)	
stress	Intervention group	10.60 (±4.61)	4.31 (±2.40)	4.38 (±2.36)	0.001
	Control group	9.28 (±2.95)	8.60 (±3.08)	9.21 (±3.23)	0.281
P value		0.095	0.001	0.001	
anxiety	Intervention group	7.73 (±4.18)	3.36 (±2.19)	3.04 (±1.95)	0.001
	Control group	6.36 (±3.70)	5.71 (±3.04)	6.55 (±2.66)	0.145
P value		0.172	0.001	0.001	

*Friedman test
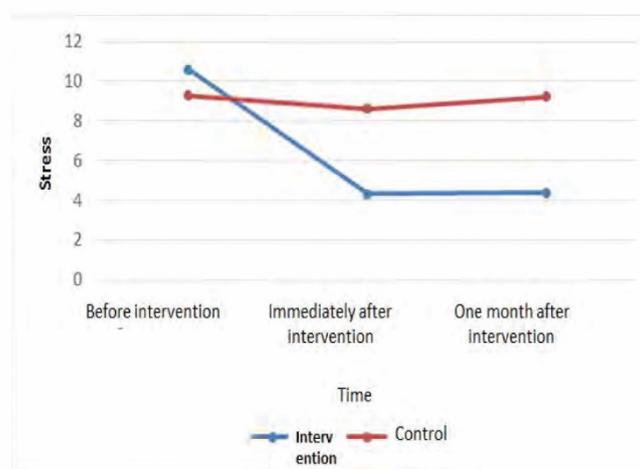
Fig 1: Changes in stress scores at different time points in intervention and control groups
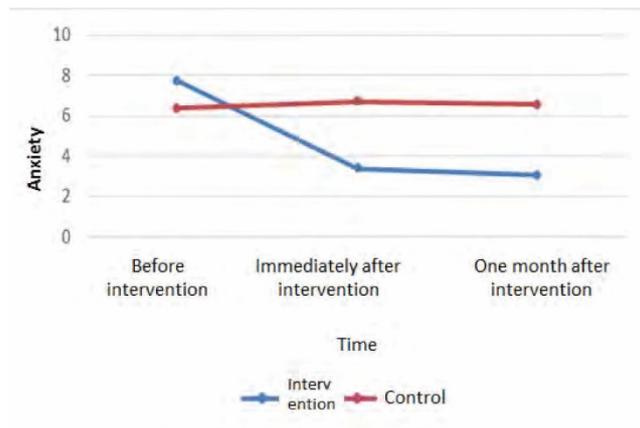
Fig 2: Changes in anxiety scores at different time points in intervention and control groups

Discussion

The current results showed that the mean scores of depression in the group that received CBT decreased more significantly compared to the control group. This indicates the effectiveness of CBT. These results are in line with a previous study (19) in 2014. They reported that CBT significantly decreased depression, anxiety, and stress in women with breast cancer. The results of the study ofAsghariet al.(2015)(20) showed a significant decrease in depression scores in the CBT group. Azizi et al. (2015)(21) found that group CBT was effective in decreasing depression and evident and hidden anxiety in elderly women. The results of

Yooet al.(2009)(22) showed that CBT significantly reduced depression. Valsarajet al.(2016)(23) confirmed the effectiveness of this type of counseling on depression. In explaining the reasons for the effectiveness of CBT in reducing anxiety, depression and stress, it can be said that a variety of cognitive techniques were used to help people to recognize negative automatic thoughts detect and learn skills to challenge cognitive distortions.

Also, behavioral techniques used in this project such as relaxation and respiratory techniques have been shown to improve disorders such as stress and depression (24). As depressed patients exaggerate the risk of danger, these techniques make these patients think logically in such situations. On the other hand, when these techniques are employed in group sessions, this let the patients understand that they are not alone and other patients have similarproblems. This results in thereduction of loneliness, blame, and shyness. This enables them to exchange constructive communications regarding solutions or coping strategies. This intellectual and empathetic experience for the problem of others helps restore their self-esteem.

The results of this study revealed that no difference was noted regarding depression score when compared in subgroups including marital status, education, body mass index (BMI), number of children, number of deliveries, and exercise in postmenopausal women in the intervention group after CBT. However,there was asignificant difference regarding depression score within different income levels. Pairwise comparison with the Mann-Whitney test showed that in this group of women following CBT, depression was more pronounced in those with lower income level. In a former study (25), depression amongst menopausal women correlates with income, but did not correlate with marital status. According to the findings of another study, educational level, occupation, and BMI did not have a significant association with depression, but there was a significant association between depression and marital status (26). This study reported that themarried women had less severe depression. To adjust thisdiscrepancy between the results of different studies, it can be said that traditional culture in small cities like Tuyserkanwhere families are usually populated can have an important role. In such families, when a member dies, other members try to compensate for the lack of that particular person and therefore family members will face less anxiety. Also, the low percentage of single subjects in this study is another contributing factor.

The current study faced some limitations. Firstly, DASS is used to measure depression, anxiety, and stress. This scale cannot diagnose these conditions as ICD or DSM can do.

On the other hand, the group CBT cannot address each condition with details. Therefore, it is advised that in the future studies where group therapies are done, the individual problems be addressed as well.

As this study was a randomized clinical trial, it is possible that when implementing CBT, the researcher be biased. It is advised that in other clinical trials, in order to prevent bias, the person who does CBT do not be the main researcher. It is suggested that more accurate diagnostic scales be used that canincorporate diagnostic criteria for measuring depression, anxiety, and stress.

According to the findings, CBT was effective in reducing depression, anxiety, and stress in menopausal women. It is advised to authorities and health planners to use CBT as an effective tool to improve the quality of life of menopausal women and as a tool for completion of services provided to these women. Considering the results, it is suggested to use this method in themanagement of other conditions such as anxiety.

As a pragmatic suggestion, it is useful to add CBT as an effective tool for the improvement of thequality of life among menopausal women in the services provided by the Ministry of Health.

Acknowledgment

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