

The effectiveness of mindfulness on quality of life of women with premature menopause: a quasi-experimental study

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Abstract

Background: Premature menopause may impair the quality of life and expose women to disorders such as cardiovascular disease, osteoporosis, and depression. This study aimed to evaluate the effectiveness of mindfulness on the quality of life of women with premature menopause.

Methods: This was a quasi-experimental study in which 62 women were recruited and randomly allocated in two groups of mindfulness and control. The mindfulness group received eight sessions of training. A demographic questionnaire, Menopause-Specific Quality of Life (MENQOL) and a checklist (for assessing frequency and intensity of hot flashes) were used to collect data. The quality of life, frequency, and intensity of hot flashes measured at baseline, after eight weeks and in three months follow-up. The Independent t-test, the chi-square test, and the repeated measure test were used for analyzing data.

Results: The score of quality of life was significantly improved after the intervention and in three months follow-up in the mindfulness group compared to the control group ($p < 0.001$). The scores of vasomotor, psychological, physical, and sexual domains also improved significantly in the mindfulness group compared to the control group. The severity and the frequency of hot flashes were significantly reduced in the mindfulness group in comparison to the control group.

Conclusion: The results of this study showed that eight weeks of mindfulness training could significantly improve the quality of life and also could reduce the frequency and intensity of hot flashes in women with premature menopause. Using mindfulness for women with premature menopause is recommended.

Background

Premature menopause defined as the permanent cessation of menstruation before the age of 40. It affects around 1% of women around the world [1]. Premature menopause may be spontaneous or induced. The cause of premature spontaneous menopause is often genetic and it is related to premature ovarian failure (POF) [2]. But premature menopause may happen after chemotherapy or surgical removal of ovaries [3].

Regardless of the cause, women with premature menopause are at the greater risk of cardiovascular diseases, neurological and psychiatric disorders, osteoporosis, and overall more morbidity and mortality [4]. In general, the symptoms that women with premature menopause experience are the same as those that women with natural menopause [5]. These women may have menstrual abnormalities such as amenorrhea, infertility, some menopause symptoms such as hot flashes, vaginal dryness, sexual problem, anxiety, and depression [6]. Changes in the level of hormones, hot flashes, and sleep disturbances may affect the quality of life in women [7].

Benetti-Pinto et al. in their study found that the score of some domains of quality of life decreased significantly in women with a premature menopause [8]. Ganz et al. also found that women with premature menopause were more likely to have a lower score of a psycho-social domain of quality of life

in comparison to women with natural menopause [9]. Menopausal complications are more severe among women with younger age or premature menopause following chemotherapy [10].

Hormone replacement therapy (HRT) including estrogen and progesterone is recommended for women with premature menopause. HRT is recommended for the prevention of short term and long-term complications of menopause such as hot flashes, vaginal dryness, osteoporosis, and cardiovascular disease [11].

Although HRT is recommended for women with premature menopause, HRT is not able to eliminate all the complications of menopause [4]. Because of some side effects of HRT, some women would prefer to use complementary and alternative medicine for menopausal complications [12].

Mindfulness is one of the methods in psychotherapy in which clients learn to have self-control, more flexibility, concentration and acceptance [13]. Wong et al. in a study found that mindfulness-based stress reduction (MBSR) could significantly improve the anxiety and depression in postmenopausal women [14]. Enjezab et al. also in their study found that Mindfulness-Based Cognitive Therapy (MBCT) is an effective treatment for improving the quality of life in perimenopausal women [15].

Although there are some studies on the effect of mindfulness on menopausal complication, there is a lack of enough information on premature menopause. Therefore, this study conducted to evaluate the effectiveness of mindfulness on the quality of life of women with premature menopause.

Methods

This was a quasi-experimental study in which 62 women with premature menopause were recruited and randomized into two groups of intervention and control. This study was started in March 2019 and completed in August 2019. The protocol of the study was approved by the Ethics Committee of Ahvaz Jundishapur University of Medical Sciences (Ref No: IRAJUMS.REC.1398.098). All participants provided written informed consent before data collection.

The sample size was calculated using the following formula [16]:

$$n = \frac{\left(Z_{1-\frac{\alpha}{2}} + Z_{1-\beta} \right)^2 (s_1^2 + s_2^2)}{(d)^2}$$

In this formula $\alpha = 5\%$, $S = 18.65$, $d = 15$ and $1 - \beta = 85\%$. The sample size was calculated to be 28 in each group and we added 10% for attrition and the final sample size was set as 31 women in each group.

Women with the following criteria were recruited: premature menopause (before age of 40 years) with any reason such as chemotherapy, surgery or natural menopause, basic literacy, women that at least one year

passed from their last menstruation or had FSH > 40 IU and women who acquired an average and low score of quality of life questionnaire. Women who had depression, who had physical activity and received hormone replacement therapy, were excluded from the study.

Results

In this study, 62 women were recruited and none of participants dropped-out (Fig. 1). The demographic characteristics of participants in the two groups are illustrated in Table 1. As evident from this table two groups of mindfulness and control did not show any significant difference regarding age, number of children, number of pregnancies, age of marriage, age of spouse and duration of menopause. Most of the women in two groups were employees, had a diploma, had a moderate economic situation and married.

Table 1
Demographic characteristics of participants in the mindfulness and control groups

Variables	Mindfulness N = 31	Control N = 31	P value
	Mean ± SD		
Age (y)	41.1 ± 3.28	41.8 ± 3.2	0.63
Number of children	2.77 ± 1.49	2.35 ± 1.47	0.17
Number of pregnancies	3.3 ± 1.93	2.35 ± 1.47	0.17
Age of marriage (y)	19.8 ± 3.8	18.7 ± 4.3	0.42
Age of spouse (y)	46.3 ± 4.39	46.57 ± 5.6	0.41
Duration of menopause (y)	5.03 ± 3.21	4.93 ± 2.67	0.91
Body mass index (kg/m ²)	29.5 ± 3.44	27.9 ± 3.68	0.09
Age of menopause (y)	36.3 ± 2.02	36.8 ± 1.99	0.33
	N(%)		
Job			
House maker	10(32.3)	10(32.3)	0.61
Employee	21(67.7)	21(67.7)	
Education			
Primary	10(32.3)	10(32.3)	0.94
Diploma	15(48.4)	14(45.2)	
University education	6(19.4)	7(22.6)	
Economic situation			
Good	6(19.4)	3(9.7)	0.51
Moderate	19(61.3)	20(64.5)	
Weak	6(19.4)	8(25.8)	
Marital situation			
Single	5(16.1)	5(16.1)	1
Married	25(80.6)	25(80.6)	
Widow	1(3.2)	1(3.2)	

Variables	Mindfulness N = 31	Control N = 31	P value
Job of spouse			
Employee	23(88.5)	23(88.5)	0.54
Not employed	2(7.7)	3(11.5)	
Retired	1(3.8)	0	

Table 2 shows the domains of quality of life before, after and in three months follow-up in two groups of mindfulness and control. As evident from this table, the quality of life was not different between the two groups before the intervention. But the score of this domain was significantly improved after intervention and in three months follow-up in the mindfulness group compared to the control group (from 95.6 ± 9.77 to 77.32 ± 7.93 and 48.32 ± 4.96 in the mindfulness group and from 99.5 ± 16.1 to 100.2 ± 15.33 and 102.6 ± 14.9 in the control group, $p < 0.001$). The scores of vasomotor, psychological, physical, and sexual domains also improved significantly in the mindfulness group compared to the control group. Although the scores of domains in the control group also changed, the changes were in the negative direction.

Table 2
Mean of quality of life domains in two groups of mindfulness and control

Variables	Before intervention	After intervention	Three months follow-up	P Value	P Value*
	Mean (SD)				
Quality of life					
Mindfulness (n = 31)	95.6 ± 9.77	77.32 ± 7.93	48.32 ± 4.96	< 0.0001	< 0.0001
Control (n = 31)	99.5 ± 16.1	100.2 ± 15.33	102.6 ± 14.9	< 0.0001	
P value	0.25	< 0.0001	< 0.0001		
Vasomotor					
Mindfulness (n = 31)	7.96 ± 3.45	6.58 ± 2.5	4.61 ± 1.49	< 0.0001	< 0.0001
Control (n = 31)	9.67 ± 3.9	9.58 ± 3.87	9.67 ± 3.95	0.04	
P value	0.081	0.001	< 0.0001		
Psychological					
Mindfulness (n = 31)	26.5 ± 5.15	20.5 ± 3.69	11.32 ± 1.79	< 0.0001	< 0.0001
Control (n = 31)	28.3 ± 5.6	28.7 ± 5.27	29.4 ± 5.16	< 0.0001	
P value	0.18	< 0.0001	< 0.0001		
Physical					
Mindfulness (n = 31)	54.09 ± 5.7	44.2 ± 4.75	29 ± 2.56	< 0.0001	< 0.0001
Control (n = 31)	53.09 ± 10.33	53.9 ± 9.6	55.06 ± 9.4	< 0.0001	
P value	0.64	< 0.0001	< 0.0001		
Sexual					
Mindfulness (n = 31)	7.45 ± 3.12	5.93 ± 2.36	3.22 ± 1.3	< 0.0001	< 0.0001
Control (n = 31)	8.22 ± 3.44	7.87 ± 3.3	8.06 ± 3.4	0.06	
P value	0.17	0.002	< 0.0001		
*p value was calculated using Repeated Measure test					

Table 3 shows the frequency and severity of hot flashes in two groups of mindfulness and control before, after and in three months follow-up. The mean severity of hot flashes in the mindfulness group was 1.30 ± 0.69 and decreased to 1.1 ± 0.56 after the intervention and 0.66 ± 0.58 in three months after intervention. These changes were more than that in the control group and were significant ($p < 0.0001$). The frequency of hot flashes was 14.74 ± 10.4 per week before intervention in the mindfulness and reduced to 12.38 ± 8.66 and 6.74 ± 6.34 per week, after and in three months follow-up, while in the control group the frequency of hot flashes was increased ($p < 0.0001$).

Table 3
Frequency and severity of hot flashes in two groups of mindfulness and control

Variables	Mindfulness N = 31	Control N = 31	P value
Severity of hot flashes (per week)	Mean \pm SD		
Before	1.30 ± 0.69	1.32 ± 0.63	0.88
After	1.1 ± 0.56	1.34 ± 0.63	0.004
Three months later	0.66 ± 0.58	1.4 ± 0.65	< 0.0001
Frequency of hot flashes per week			
Before	14.74 ± 10.4	20.96	0.01
After	12.38 ± 8.66	2.9 ± 13.37	0.001
Three months later	6.74 ± 6.34	23.4 ± 13.9	< 0.0001

Discussion

This study conducted to evaluate the effectiveness of mindfulness on quality of life of women with premature menopause. The results of this study showed that immediately after intervention and in three months follow-up the total score of quality of life and its domains including vasomotor, psychological, physical and sexual improved significantly in the mindfulness group in comparison to the control group. We could not find any study on the effect of mindfulness on quality of life in women with premature menopause. But some studies evaluated the effect of mindfulness on menopausal symptoms in peri or postmenopausal period. Sood et al. in a study on 1744 women aged 40–65 years found that women with higher mindfulness scores had significantly lower scores of stress and menopausal symptoms [19]. Also, Garcia et al. in their study on 60 postmenopausal women who randomly allocated in two groups of mindfulness and relaxation training and a control group, found that eight weeks of training could significantly improve the sleep quality, quality of life and reduce the vasomotor symptoms [20]. The results of Sood et al. and Garcia et al. are similar to our study.

In the present study, the frequency and severity of hot flashes in the mindfulness group was decreased after the intervention and in three months follow-up in comparison with the control group. Carmody et al. in their study on 110 peri and postmenopausal women with > 5 moderate to severe hot flashes per day found that mindfulness-based stress reduction could significantly reduce the frequency of hot flashes and improved the quality of life immediately and three months after the intervention [21]. Our results regarding the quality of life and frequency of hot flashes is similar to Carmody et al. Menopause is associated with a number of physical, psychological and social changes that affect the quality of life [22].

Although the precise statistics on premature menopause are not available in Iran, only a few numbers of women with premature menopause begin HRT. Therefore, using non-hormonal treatments such as mindfulness can help to reduce menopausal symptoms and improve the quality of life.

Strengths And Limitations Of The Study

This was a quasi-experimental study with rigorous eight weeks of mindfulness training and 12 weeks follow-up. Despite its strengths, this study also has some weaknesses. First, women in the mindfulness did not get counseling according to their educational attainment. Second, the responses of participants may be affected by recall bias.

Conclusion

The results of this study showed that eight weeks of mindfulness training could significantly improve the quality of life and also could reduce the frequency and intensity of hot flashes in women with premature menopause. Using mindfulness for women with premature menopause is recommended.

Abbreviations

MENQOL

Menopause-Specific Quality of Life

POF

Premature ovarian failure

HRT

Hormone replacement therapy

MBCT

Mindfulness-Based Cognitive Therapy

BMI

Body mass index

Declarations

Acknowledgement: This study was a master thesis of FP. All expenses of this study were provided by Ahvaz Jundishapur University of Medical Sciences. The funder did not play any role in design, data collection, data interpretation and writing the manuscript. We would like to thank all women who participated in this study. I confirm all patient/personal identifiers have been removed or disguised so the patient/person(s) described are not identifiable and cannot be identified through the details of the story.

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Availability of data and materials: Data of this study will be available upon the request from corresponding author.

Authors' contribution:

Conceptualization: FP, PA, MGJ, EM

Data collection: FP

Data analyzing and interpretation: EM, MGJ, PA

Writing and finalizing the manuscript: PA, FP

All authors read and approved the final version of the study.

Ethics approval and consent to participate: The protocol of this study was approved by the Ethics Committee of Ahvaz Jundishapur University of Medical Sciences (Ref No: IRAJUMS.REC.1398.098). All participants provided written informed consent before data collection.

Consent for publication: N/A

Competing interest: Parvin Abedi is an associate editor of BMC Pregnancy and Childbirth and other than this, the authors declare that they have no competing interests.

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Figures

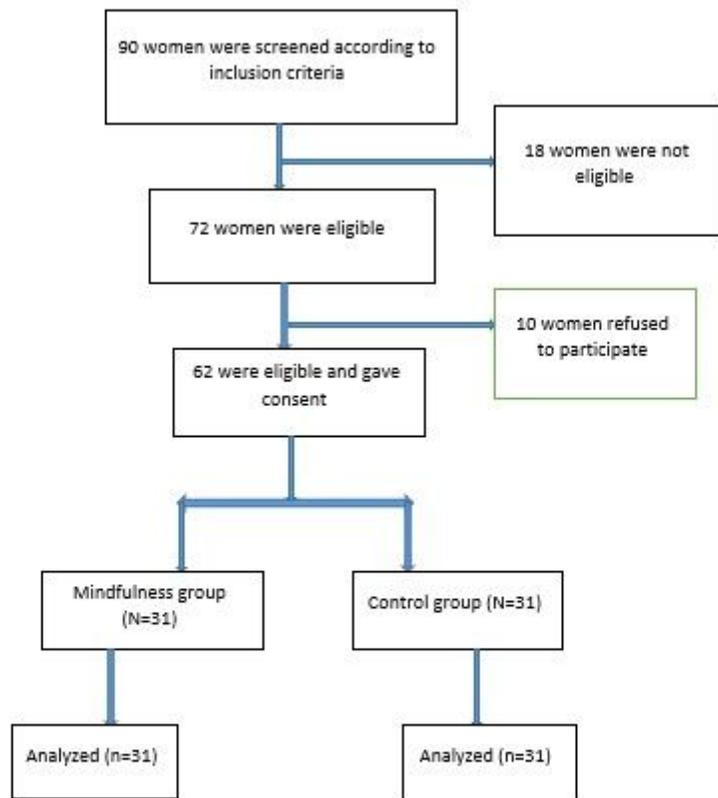


Figure 1

Flow diagram of recruitment and retention of participants in the study