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Effect of Group Counseling on Depression, Stress, and Anxiety of Premenstrual Syndrome: A Randomized Clinical Trial

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Abstract

Objectives: Premenstrual syndrome (PMS) is a combination of physical, spiritual, and emotional symptoms, which periodically happens before the cycle. The current research aims to investigate the effect of group counseling on depression, stress, and anxiety of PMS.

Materials and Methods: The current study is a randomized clinical control trial on 112 married women who experience PMS that makes them refer to health centers in Qazvin city. The samples were divided into two groups of 55 in control and 57 in the trial group, randomly. Three sessions of group counseling were held for the trial group, each session was 45 minutes long and including teaching about PMS and its symptoms, depression, stress, and anxiety caused by this syndrome, and also negative mood and stress management skills. Data were gathered by demographic information questionnaire, Depression, Anxiety and Stress Scales 21, and PMS scale.

Results: Initially, when starting the study, the results of the studied variables were homogeneous in both intervention and control groups. Moreover, no significant difference was seen in the severity level of PMS symptoms ($P=0.70$) and depression ($P=0.61$), stress ($P=0.10$), and anxiety ($P=0.60$) score before intervention in both groups. After intervention, the mean scores of severity of the PMS ($P<0.001$), depression ($P<0.001$), stress ($P<0.001$), and anxiety ($P<0.001$) in the intervention group significantly decreased.

Conclusions: Group counseling caused a significant reduction in the severity of PMSs and depression, stress, and anxiety. Counseling protocol for reducing the severity of the PMS and treating depression recommended.

Keywords: Premenstrual syndrome, Depression, counseling, Complementary therapies

Introduction

Premenstrual syndrome (PMS) is combination of physical, spiritual, and emotional, symptoms that periodically happen before the cycle. This syndrome starts 5-7 days before menstruation and continues for 2-4 days after the onset of menstruation (1). Unfortunately, many studies have estimated the prevalence of PMS relatively high, the overall prevalence of PMS 70.8%, based in Iran that may decrease by increasing the age of women (2). Symptoms of this syndrome are divided into three categories: physical, behavioral, and psychological. The original etiology of PMS is unknown (3). Today deduction of dopamine and serotonin is the most important factor for PMS (2, 4). Therefore because of unknown etiology, different treatments are suggested (5). Among all these treatments, using vitamins (6), supplements (7), herbal drugs (2, 4), massage (8), exercise (9), change in lifestyle, cognitive trainings and cognitive behavioral therapy (10, 11), and nutrition (12) are mentioned.

Among the present treatments, pharmacotherapy is the first choice of PMS treatment. However non-pharmacological therapy should be considered the first step of mild and moderate PMS (10). Meanwhile, non-pharmacological and psychological treatments such as counseling have a particular role in decreasing PMS symptoms. Group counseling due to the interaction of people with each other and using collective wisdom can also be a great help in solving the problem and increasing the ability of people to deal with their problems (13). Therefore, the present study is designed to use non-pharmacological approaches to lower the issues accompanying this syndrome, particularly its mental and psychological complications.

The main goal of this study is to investigate the effect of group counseling on depression, stress and, the anxiety of PMS on Iranian women.

Materials and Methods

Study Design and Participants

The present work is a randomized clinical trial. The

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Key Messages

- Group counseling is an available and low cost methods that is effective for relieving PMS symptoms and psychological wellbeing.

sampling community is the women with premenstrual complaints referring to the 10 health centers of Qazvin city, Iran, from May to September 2018. Inclusion criteria were: 1) According to the questionnaire, having symptoms of PMS for measuring the PMS, 2) Having normal menstruation, 3) Being married, 4) According to the World Health Organization, being at the age of fertility (15-49 year), and 5) Being a resident of Qazvin.

Exclusion criteria were: 1) No desire to participate in the study, 2) Having a known mental illness, 3) Using psychosocial drugs, and 4) Having a special diet.

Interventions

Three counseling sessions were held for the trial group, and each session lasted 45 minutes. These sessions included training the conception of PMS and its symptoms; premenstrual depression; the skill of fighting against negative mood, stress, and anxiety of PMS; and stress management, aimed at reducing PMS severity, depression, stress, and anxiety due to PMS. Each group of counseling sessions had 5-10 members. The duration of each session was 45 minutes weekly. At the first session, the concepts trained were: training op PMS, the menstruation physiology, the symptoms of PMS, the effects of PMS on mood, adverse effects on functions and relations, diet, exercises, and its effect on reducing these symptoms. The second session included: the concept of depression, its signs and symptoms, recognizing the symptoms in behaviors, and training how to campaign against negative moods. And the third session was about: the definition of stress, anxiety, and the skill of stress management. The control group received usual care.

Outcomes and Data Collection

The main outcome of present study were PMS symptoms, depression, anxiety, and stress level. The instruments used to measure the study variables included: Demographics, index of measurement of PMS (15), and Depression, Anxiety, and Stress Scale (DASS 21) (16). At the beginning of the study, participants in both trial and control groups received the index of measurement of PMS questionnaire to complete them during 7-10 days before menstruation up to 2-3 days after it, for two periods of menstruation (2,14,15). Then DASS 21 questionnaire was completed by both groups. At the end of the intervention (holding sessions), the questionnaires were completed to measure the outcome after the intervention. Thus the sessions held, index of measurement of PMS and DASS 21 questionnaires completed in both trial and control groups during 7-10 days before menstruation up to 2-3 days after it.

Sample Size

The sample size was calculated 120 women based on the following formula and the prevalence of PMS.

$$n = 2\frac{\left(Z_{1-\alpha/2} + Z_{1-\beta}\right)^2 pq}{(p1 - p2)2}$$

$p_1 = 0.57$, $p_2 = 0.28$, $Z_{1-\alpha/2} = 1.96$, $Z_{1-\beta} = 0.86$

Randomization and Blinding

Firstly from 400 women at the clinics, 120 women selected randomly. Then, using simple randomization method 120 participant allocated in the intervention and control group randomly. For this reason we used random digits table. The statistician that analyzed data was blinded of grouping and type of intervention in each group.

Data Analysis

After scoring all questionnaires by the two groups in pretest and posttest, the data are placed in SPSS software version 24 and for data analysis, descriptive statistical methods (which include frequency, mean, and standard deviation) and inferential statistics including Kolmogorov-Smirnov, Shapiro–Wilk, chi-square, one-way ANOVA, independent and paired t tests were used to compare the two groups. *P* value less than 0.05 considered significant.

Results

In the present study, 112 women with the PMS were included in the research based on the inclusion and exclusion criteria. Of these, 55 samples were in the control group, and 57 were in the intervention group (Figure 1). The age range of patients was from 15 to 49 year, the mean age of patients in the control group was 38.1 with a standard deviation of 6.8, and in the intervention group was 37.7 with a standard deviation of 7.1 (Table 1).

The results showed that, in light of age, education, job, and the number of children, both groups demographic features were homogeneous. The results did not show any meaningful statistical differences (Table 1). In addition, before the intervention, there were no significant statistical differences in PMS (P = 0.7) and depression ($P = 0.61$), stress ($P = 0.10$), and anxiety ($P = 0.60$) score in samples (Table 2). The hypothesis that both trial and control groups are homogeneous was confirmed using Kolmogorov-Smirnov and Shapiro–Wilk tests.

At the end of the sessions, the mean of the scores of PMS severity in the trial group exhibited a significant difference ($P < 0.001$) according to the "index of measurement of the PMS" (Table 3).

Furthermore, according to "DASS21" questionnaire, most of the samples in the trial group gained lower levels of depression ($P < 0.001$), anxiety ($P < 0.001$), and stress ($P < 0.001$) scores which showed the effectiveness of the intervention. While in the control group, the mean of the scores of depression ($P = 0.57$), anxiety ($P = 0.10$), and

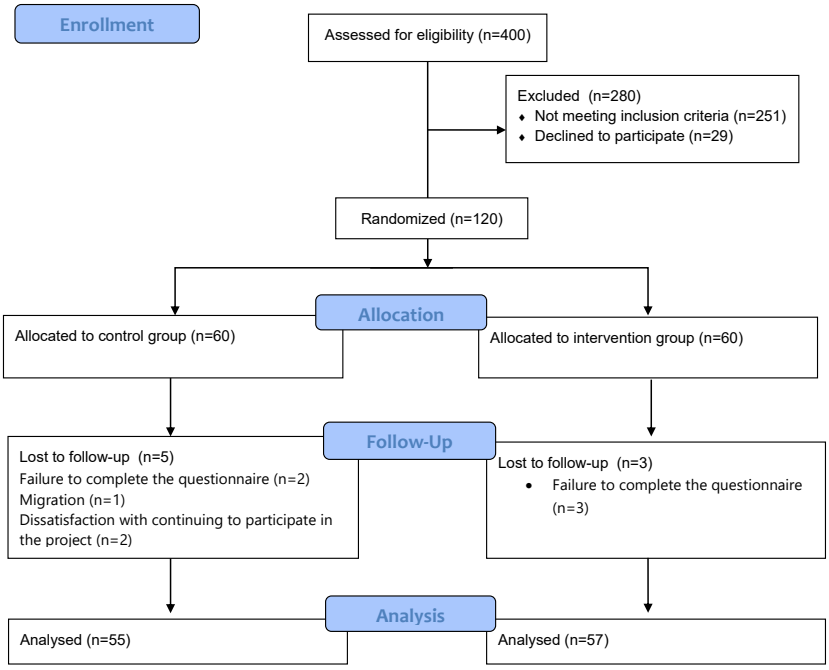

Figure 1. The Study CONSORT Flowchart.

stress ($P=0.10$) did not significantly differ from before and after the intervention (Table 4).

Discussion

In the present study, group counseling therapy for the symptoms of PMS was found to be associated with significant improvements in a range of measures. And the effectiveness of counseling was revealed in the first menstruation after the counseling sessions. Other results showed the severity of depression in the trial group, which received counseling sessions significantly reduced than the control group. Therefore, it is concluded that group counseling can reduce the severity of PMS and depression in married women. The mean score of depression according to the DASS 21 questionnaire was the same in both intervention and control groups before the intervention (group counseling sessions). Mean score of depression, stress, and anxiety according to DASS 21 questionnaire after the intervention (group counseling sessions) showed that the rate of depression, stress, and anxiety of patients in the experimental groups and post-intervention control are not the same and show a statistically significant difference using chi-square test. Furthermore, the level of stress score in the control group after the intervention showed a significant difference, but this difference was less than the reduction in the intervention group.

In a study in Iran, researchers examined the effect of progressive muscle relaxation program during six sessions on the depression, stress, and anxiety. They used DASS 21 questionnaire to measure depression, stress, and anxiety before and after the intervention. Results revealed that the mean score of depression, stress, and anxiety after the intervention significantly decreased compared to before the intervention that is consist with finding of our study (17). The mean score of PMS before and after the intervention, based on the questionnaire of PMS

Table 1. Baseline Characteristics of Samples Compared Between Control and Trial Groups

Variable	Control (n = 55)	Trial (n = 57)	*P* Value
Age (y)*	38.1 ± 6.8	37.7 ± 7.1	0.7
Education, No. (%)			
Illiterate	3 (5.5)	0 (0)	
Primary school	5 (9.1)	8 (14)	
High school	9 (16.3)	17 (29.8)	0.06
Diploma	29 (52.7)	23 (40.3)	
Bachelor's degree	9 (16.3)	5 (8.7)	
Graduated	0 (0)	4 (7.2)	
Job, No. (%)			
Housewife	51 (92.7)	53 (92.9)	0.9
Employee	4 (7.7)	4 (7)	
No. of children, No. (%)			
0	2 (3.7)	7 (12.2)	
1	12 (21.8)	11 (19.2)	
2	28 (50.9)	25 (44.2)	0.3
3	10 (18.1)	9 (15.7)	
4	2 (3.7)	5 (8.7)	
5	1 (1.8)	0 (0)	

Table 2. Comparison of Mean Scores of Anxiety, Depression, Stress and PMS before Intervention in the Two Groups

Variables	Trial	Control	Paired *t* test	*P* Value
	Mean ± SD	Mean ± SD		
Anxiety	14.9 ± 10.8	16 ± 12.7	-0.4	0.6
Depression	16.6 ± 12.7	15.7 ± 11.2	4.6	0.61
Stress	16.8 ± 11.1	17.4 ± 10.7	1.6	0.1
PMS	13.4 ± 12.6	17.7 ± 15.1	0.2	0.7

Independent *t* test was used for determination difference in mean score of anxiety, depression, stress and PMS between intervention and control groups. Paired *t* test was used for determination difference in mean score of anxiety, depression, stress and PMS within groups before and after intervention.

Table 3. The Comparison of PMS in Participants Before and After the Intervention in Trial and Control Groups

PMS	Before Intervention	After Intervention	Paired *t* test	*P* Value
Trial	13.4 ± 12.6	5.7 ± 2.8	5.3	< 0.001
Control	17.8 ± 15.1	15.1 ± 2.6	2.1	0.004
t test	-1.6	-3.7		

Independent *t* test was used for determination difference in mean score of anxiety, depression, stress and PMS between intervention and control groups. Paired *t* test was used for determination difference in mean score of anxiety, depression, stress and PMS within groups before and after intervention.

Table 4. The Comparison of Depression, Anxiety and Stress in Participants Before and After the Intervention in Trial and Control Groups

	Before Intervention	After Intervention	Paired *t* test	*P* Value
Score of Depression				
Trial	16.6 ± 12.7	7 ± 1.9	6.3	< 0.001
Control	15.7 ± 11.2	13.4 ± 10.1	2.02	0.057
t test	t = 0.4, p = 0.6	t = -3.5, p = 0.001	-	-
Score of anxiety				
Trial	14.9 ± 10.8	7.4 ± 1.9	6.1	< 0.001
Control	16 ± 12.7	14.1 ± 11.2	1.5	0.1
t test	t = -0.4, p = 0.6	t = 3.3, p = 0.001	-	-
Score of stress				
Trial	16.8 ± 11.2	10.8 ± 9.2	7.1	< 0.001
Control	17.4 ± 10.7	14.3 ±11.3	2.4	0. 1
t test	t = 1.5, p = 0.12	t = -3.2, p = 0.001	-	-

Independent *t* test was used for determination difference in mean score of anxiety, depression, stress and PMS between intervention and control groups. Paired *t* test was used for determination difference in mean score of anxiety, depression, stress and PMS within groups before and after intervention.

was showed the effect of group counseling on reducing the severity of PMS in the intervention group. The score of PMS in the control group also showed a significant difference after the intervention, but this difference was less than the reduction in the intervention group.

In a previous study, researchers examined the mean severity of PMS before and after a holding written emotional disclosure sessions. They reported that their intervention was effective in reducing the severity of the PMS. Their results are consistent with the present study (18). In two other studies researchers examined the effectiveness of life skills training on PMS severity and reported similar findings (6,7).

Our findings revealed that group counseling reduces the severity of PMS, depression, stress, and anxiety. Feasibly the effective mechanism of group counseling is that the individual knows himself as she is, expands her relationship with others, and through her interaction with others, uses collective wisdom to solve the problem and increases her ability to solve problems.

Besides, considering the significant difference between the mean scores of stress and PMS in the control group after group counseling, it can be concluded that the cause of this significant difference may be flipping women and making them aware of the symptoms of PMS during menstruation. Completing the PMS assessment questionnaire and DASS21 questionnaire has led to the recognition of this syndrome and its complications in their daily lives. According to this knowledge, they have tried to eliminate or suppress these signs and symptoms. Another reason could be the same knowledge of the signs and symptoms of PMS. Due to the re-completion of the questionnaires, the samples tried to show themselves better after re-completing it. Obviously, all the examples were told to consider their current situation and put honesty in accountability first. However, one of the limitations of the present study, which is the diagnosis of PMS and its symptoms based on self-expression of samples, was limited to the response of samples in this regard.

With due attention to the high prevalence of PMS in all ranges of reproductive ages, inexpensive and low complication treatments are before other treatments.

Today counseling methods are common in treating many diseases, but before using them, enough clinical trials should be done to replace drug therapies. It is worth mentioning that it is suggested to do some studies similar to the present study but with more sessions and prolonged follow-ups to test the duration of counseling therapy. Consequently, this study can be recommended by the concerned ministry to prepare counseling therapy protocol in treating PMS severity, depression, stress, and anxiety. In the training aspect, the findings of the current work can be taught to the university students to use in their fields. Also, this study can contrive other researches.

Conclusions

The results showed that group counseling reduced the severity of mental and physical symptoms of premenstrual syndrome in the intervention group compared to the control group, which after counseling, its therapeutic effects appear in the first menstrual period. Also, the results of this study specifically showed that the severity of depression, stress and anxiety in women in the intervention group was significantly lower than women in the control group. Therefore, it can be concluded that group counseling, in addition to reducing the severity of premenstrual syndrome symptoms, can reduce the severity of depression, stress and anxiety in married women.

Authors' Contribution

FF conceived of the study idea, designed and performed the intervention, data collection, data analysing, interpretation of data and manuscript writing. MSM conceived of the study idea, designed and performed the intervention, manuscript writing. MS conceived of the study idea, designed and performed the intervention, interpretation of data and manuscript writing. ZJ conceived of the study idea, designed and performed the intervention, supervised the study, data analysing, interpretation of data and manuscript writing. All authors approved the final manuscript and take responsibility for the integrity of the data.

Conflict of Interests

Authors declare that they have no conflict of interests.

Ethical Issues

The proposal of the present study was approved by the Ethics Committee of Qazvin University of Medical Sciences (code: IR.QUMS.REC.1396.298). In addition, this study was registered at the Iranian Registry of Clinical Trials website (identifier: IRCT20171216037897N1).

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References

1. Behboodi Moghadam Z, Rezaei E, Shirood Gholami R, et al. The effect of Valerian root extract on the severity of pre menstrual syndrome symptoms. J Tradit Complement Med. 2016;6:309-315. doi:10.1016/j.jtcme.2015.09.001
2. Moghtader L, Hasanzade R, Mirzaeian B, et al. Effectiveness of group cognitive behavioral therapy and group cognitive hypnotism on anxiety and depression in women with premenstrual syndrome. J Holis Nurs Midwifery. 2016;26:96-105.
3. Ryu A, Kim TH. Premenstrual syndrome: A mini review. Maturitas. 2015;82:436-440. doi:10.1016/j.maturitas.2015.08.010
4. Delaram M, Jafari F. The effect of fennel on the pre-menstrual syndrome. Knowledge and Health 2011;6:1-6. (Persian).
5. Pearlstein T. Treatment of premenstrual dysphoric disorder: Therapeutic challenges. Expert Rev Clin Pharmacol. 2016;9:493-496. doi:10.1586/17512433.2016.1142371
6. Ebrahimi E, Khayati Motlagh Sh, Nemati S, et al. Effects of magnesium and vitamin b6 on the severity of premenstrual syndrome symptoms. J Caring Sci. 2012;1:183-189. doi:10.5681/jcs.2012.026
7. Nazemi M, Hassani A, Moghaddam HK. Effect of taking soybean supplement and regular aerobic exercise in water on mental and physical symptoms of premenstrual syndrome among female students. Knowledge and Health 2014;9:58-65. (Persian).
8. Ghaedi L, Moradi M. Assessment of the effects of massage therapy on premenstrual syndrome. Zahedan J Res Med Sci. 2011;13:e94066.
9. Saglam HY, Orsal O. Effect of exercise on premenstrual symptoms: A systematic review. Complementary Therapies in Medicine 2020;48:102272.
10. Dadvandi M, Navabinejad S. The effectiveness of cognitivebehavioral training in group on PMS. Islamic Azad University of Medical Science. 2011;21(2):120-14. (Persian).
11. Nazari H, Hashemian K. The effect of Cognitive-behavioral therapy on reduction of premenstrual syndrome. Journal of Medical Council of Iran. 2012;30(2):144-9. (Persian).
12. Sepehrirad M, Toozandehjani H. Effectiveness of cognitive-behavioral group therapy training and nutritional strategies based on traditional medicine on Premenstrual Syndrome. The Iranian Journal of Obstetrics, Gynecology and Infertility. 2015;18(177):11-19. doi:10.22038/ijogi.2016.6453. (Persian).
13. Shafiabadi A. The ways and techniques of counseling (clinical interview) Tehran: Ketabe Fekre nou; 2016. (Persian).
14. Ahangar KhS, Dadkhah A, Dolatshahei B, et al. Efficacy of anger management training on anger severity symptoms of premenstrual syndrome. Procedia-Social and Behavioral Sciences. 2011;30:1942-1944.
15. Samani S, Jokar B. Examining validity and reliability of brief form depression, anxiety and stress scale. J Soc Sci Hum Shiraz Univ. 2007;26(3):65-77.
16. Fathi AA. Psychological test - Personality Evaluation & Psychological Health. 1st ed. Iran: Be'ssat; 2009.
17. Sharifirad G, Rabiei L, Hamidizadeh S, et al. The effect of progressive muscle relaxation program on the depression anxiety, and stress of premenstrual syndrome in female students. J Health Syst Res. 2014;9:1786-1796.
18. Karami J, Zalipoor S, Pourjavad M. [Efficacy of emotional disclosure on premenstrual syndrome.] The Iranian Journal of Obstetrics, Gynecology and Infertility. 2015; 17: 6-12. (Persian).