

*The Effect of Training Premenstrual Coping Skills in Undergraduate Students
in the School of Nursing and Midwifery, Hamadan-Iran*

Masoumi SZ¹, Shayan A², Shobeiri F³, Roshanaei Gh⁴, Khanialamooti M^{5*}

¹Assistant Professor, Mother and Child Care Research Center, Hamadan University of Medical Sciences, Hamadan, Iran

²Instructor, Dept. of Midwifery, School of Nursing and Midwifery, Mother and Child Care Research Center, Hamadan University of Medical Sciences, Hamadan, Iran

³Professor, mother and Child care Research Center, Hamadan University of Medical Sciences, Hamadan, Iran

⁴PhD. Dept. of Biostatistics, School of Public Health, Hamadan University of Medical Sciences, Hamadan, Iran

⁵MSc. Dept. of Midwifery, School of Nursing and Midwifery, Hamadan University of Medical Sciences, Hamadan, Iran

***Corresponding Author:** Dept. of Counseling Midwifery, School of Nursing and Midwifery, Hamadan University of Medical Sciences, Hamadan, Iran

Email: m.khanimid2014@gmail.com

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Abstract

Background: The premenstrual Syndrome is a collection of physical, mental and emotional symptoms which influence the quality of individual's life, so it is important to control and treat it.

Objectives: The aim of this study was to investigate the effect of Training Premenstrual Coping Skills in Undergraduate Students in the School of Nursing and Midwifery, Hamadan-Iran.

Methods: This is a quasi-experimental study including a before and after design on 140 students of Nursing and Midwifery in Hamadan-Iran, which was conducted in 2015. 80 Eligible individuals were selected by convenience sampling method and randomly assigned to intervention and control groups. The research tool which we used was a questionnaire related to stress and coping strategies before and it was completed before and two months after the intervention in two groups. The students were trained the coping skills in the intervention group over five weeks, for 60 to 90 minutes.

Results: The average age between girls in intervention group is 21.71 ± 3.21 and control group 21.94 ± 3.16 is years old. Based on the results of Wilcoxon test average tension score's comparison before Menstruation and also before and after intervention in each different statistical group is meaningful ($p < 0.01$). Despite the reduction of tension score before Menstruation in the group of intervention difference, the comparison is not so meaningful ($p = 0.07$).

Conclusion: Training the Coping skills had no significant impact on reducing premenstrual stress, but contributes to improving people's coping skills. It is recommended to hold premenstrual stress coping skills training sessions with a longer time to achieve valuable results.

Key words: coping strategies, stress, pre-menstrual syndrome, training

Introduction

Premenstrual syndrome is the emergence of a period of one or more symptoms from a large set of symptoms before the onset of menses and the first few days of menstruation, which to some

degree causes a disturbance in the way of life and activities of individuals and followed by a period without any mark [1,2]. It begins after ovulation and lasted for two to four days after the onset of bleeding [3]. Researchers believe that 90-70% of

women between the ages of 25-45 years experienced premenstrual syndrome [4]. The incidence of premenstrual syndrome in most Western Europe and America studies has been reported between 20 and 50% [5]. In a review, the PMS was reported 98% in Iran [6]. The diagnosis is based on the symptoms during the second half of the menstrual cycle and its repetition for two to three menstrual cycle [7]. This syndrome includes physical and psychological symptoms. Physical symptoms include headaches, bloating, edema of extremities, breast tenderness, having a pain in joints and muscles, fatigue, thirst, lack of energy and changes in appetite. Psychological symptoms include such cases as anxiety and depression, nervousness or irritability without reason, crying, and lack of concentration, aggressiveness and suicidal tendencies [8]. The exact mechanism of these changes and tensions still are not well understood, and it seems that several factors are involved. The premenstrual stress increases adverse educational outcomes such as the impact on students' academic performance and economic consequences such as absenteeism and social consequences like murder and crime. So that out of every five crimes carried out by American women, two cases of which are committed by women in the days before menstruation [9]. The treatment of the syndrome is aimed at improving symptoms and restoring proper functioning of the body and often needs a combination of lifestyle modification and drug therapy. [10]. One of the ways to treat menstrual tension is life skills training. Life skills include using the effective ways to deal with the problems of life [11]. Since common mental symptoms of PMS include irritability, tension, variable mood, social isolation and a desire for loneliness, components of life skills include decision-making skills, problem solving skills, creative thinking skills, critical thinking skills, the ability to communicate effectively, skill building and maintaining interpersonal relationships, self-awareness, empathy, skills, coping with emotions, stress coping skills [11], it seems that four components of life skills training (including: self-awareness, effective communication, coping with negative emotions and stress coping) can cover problems resulting from this syndrome's symptoms, but the

findings are contradictory in this regard [11]. The Skill of coping with negative emotions includes recognizing different emotions of life and their effects on the individuals. Identifying the potential sources of stress and the way of their impact enables the individual to reduce pressure and stress by applying appropriate positions [12]. In the study by Nourani Saadoldin et al (2013) [12] and Dadvandi et al. (2011) [12], life skills training reduced the severity of psychological symptoms of PMS, but the study by Srikala and Kishore (2010) [14] and Chang (2002) [15] showed that life skills training had no significant impact on the adaptation and coping strategies in adolescents. Because the symptoms of premenstrual are in a wide range with different intensities and a large crowd of women and girls are involved in it, It may have irreversible effects on the quality of life and reduce the efficiency, and with different and contradictory results. Regarding the effectiveness of life skills training, this study aimed at investigating the effect of premenstrual stress coping skills training in undergraduate nursing students in Hamadan University of Medical Sciences.

Methods

This study was a quasi-experimental study with pre-intervention and post-intervention design for the control group. The study population consisted of all undergraduate students in faculty of nursing and midwifery at Hamadan University of Medical Sciences-Iran who met the inclusion criteria. The inclusion criteria include: the risk of premenstrual syndrome with mild to severe severity based on the PMS questionnaire, being single (because marital status reduces premenstrual tension and stress), studying undergraduate nursing and midwifery at Hamadan University, having regular menstrual periods with intervals of 28-35 days [13], lack of physical and mental illness confirmed by a doctor during and prior to the study, without being under any kind of treatment to relieve the symptoms of PMS, lack of situational crisis, lack of receiving formal education in order to cope with the premenstrual stress.

The exclusion criteria were: failure to participate in more than one session of classes, occurrence of

stressful events (such as the death of relatives, separation of parents) during the study, the marital status during the study, transfer or dropout of students. Data collection tools include as following:

General Information Questionnaire, Premenstrual Symptoms Screening Test (PSST), premenstrual Stress questionnaire and coping strategies questionnaire.

1. Questionnaire, Premenstrual Symptoms Screening Test (PSST): it contains 14 items with two parts: the first part includes nine items for assessing mood and behavioral symptoms and the second part measures the impact of these symptoms on individual's life. It includes five items. The methods of assessment is based on five criteria (no, mild, moderate, severe and disabling). For diagnosis of moderate to severe PMS, following three conditions must be regarded:

- The options one to four at least one should be moderate or severe.

- In addition to the previous option, at least four cases should be moderate or severe among options 1-9.

- There should be a moderate or severe case in the part of the impact of symptoms on life (five last options). Its standardization and translation and validation was done by Siahbazi et al. (2016). In the study by Armand and Talaei (2012), the reliability obtained was as 0.90 in symptoms part and 91% in symptoms impact on life part and 0.93 for total items using Cronbach's alpha coefficient. In discussing the validity, content validity ratio (CVR) and content validity index (CVI) were used in previous studies where the values of these two indexes were 0.7 and 0.8 respectively [16-17].

2. Premenstrual Stress questionnaire: This questionnaire is a standard questionnaire and has been used in other studies. The number of items in this questionnaire is 17. The questionnaire scores range from 17 to 85 and it is scored according to 1-5 point Likert scale. In this study, the reliability coefficient obtained was as 0.81 using Cronbach's alpha coefficient. Its validity was measured using content validity and necessary reforms were done using references and authentic books by 7 members of the faculty of the Department of

Midwifery, School of Nursing and Midwifery, Hamadan [18].

3. Coping strategies questionnaire: The questionnaire contains 48 items in Likert method ranging from never "1" to always "5". The questionnaire is in the range of scores from 16 to 80. The reliability of questionnaire has been obtained through Cronbach's alpha coefficient in the study by Endler and Parker (1994) [19]. (Total internal consistency of intervention 0.92) and reliability of the questionnaire was confirmed by Cronbach's alpha coefficients as 0.85 in a study in Iran [20-21].

First, the qualified individuals were selected by convenient sampling method and then 140 ones were selected based on the table of random numbers.

In this study, individuals who were eligible for sampling were selected by convenient sampling and a number was given to each person. Then 140 ones were selected based on the random numbers table which were classified in two case and the control groups randomly. That is, the first was assigned in case group and others were placed into one of two groups. Taghizadeh et al. (2010) [22] used following equation to determine the number of samples.

$$n = \frac{(Z_{1-\frac{\alpha}{2}} + Z_{1-\beta})^2 (\sigma_1^2 + \sigma_2^2)}{d^2}$$

where $\sigma_1^2 = 4.7$ and $\sigma_2^2 = 5.1$ $d=2.5$ were used and sample size was specified by considering error type I as 5% and intervention power as 80% and sample attrition as 10%.

After selecting the participants, because of ethical considerations, the aim of the study was explained to the participants. Also, they were assured that results will be released in the case of their consent and University of Medical Sciences approval and the data associated with them will remain completely confidential and they will be free to participate in the study or do not, or they can exit at any stage. After obtaining the informed consent in the written way from samples, questionnaires related to stress and coping strategies were completed at the beginning of the research by intervention and control groups, then coping skills were trained to the intervention group students for

5 session, 10 weeks and each week for 60-90 minutes at 7 groups of 10 members. Then the intervention group was asked to use the principles that were taught, when coping with premenstrual syndrome symptoms, and at the beginning of each training session, the students were asked to express previous session's material and state the skills in the presence of researcher so that probable ambiguous points are resolved. This process led to repetition and practicing more about the issues raised. At the end of two months, students in the intervention group and control

group again completed stress and coping skills questionnaires and data were analyzed. It is worth noting that in this study in order to pursue the ethical points between the two groups, all the training booklets and pamphlets were given to control groups after completion of training so that they can use the educational materials in the menstrual cycle and receive its impacts. Even they were provided with a contact number in case of any problems or questions.

The objectives of training sessions were designed in this way (Table 1).

Table 1: The objectives of the training sessions

Objective	Content	Teaching Method	Time	Session
Raising awareness about menstrual cycles	Training physiology of menstruation, PMS, Including its concept, symptoms and negative effects on different aspects of life and how to cope with it	Lecture	70 minutes.	First
Promoting awareness about stress	discussion on stress and its symptoms and its relationship with PMS	group discussion	90 minutes.	Second
Promoting awareness about anger	Training about anger and how to control it	Lecture	90 minutes.	Third
Promoting awareness about coping skills	Coping skills training and its types	PowerPoint Presentations	90 minutes.	Fourth
Promoting awareness about Stress	Stress management skills training and summarize the material from past sessions	PowerPoint Presentations Lecture Group discussion	90 minutes	Fifth

Results

Based on the results, the mean age of women in the intervention group was 12.17±3.21 years and in the control group it was 12.49 ± 3.16 years. Based on the results presented in Table 2, there was no significant difference between the two

groups in terms of field of study, grade, location, father and mother's occupation, father's education, mother's education, the number of children, history of physical illness, history of mental and physical illness in mother and father, and the two groups were similar (p>0.05).

Table 2: Comparison of absolute and relative variables frequency between intervention and control groups

Variable	Intervention		Control		Chi-square test (P value)	
	No.	Percent	No.	Percent		
Field of Study	Nursing	90	56.3	90	56.3	1
	Midwifery	70	43.8	70	43.8	
Grade	Continuous	152	94.8	152	94.8	1
	Discontinuous	8	5.2	8	5.2	
Location	Native	79	49.4	72	55	0.433
	Exotic	81	50.6	88	45	
Father's job	employed	131	81.9	132	82.5	0.881
	Unemployed	29	18.1	28	17.5	
Mother's job	employed	14	8.8	19	11.9	0.358
	Unemployed	146	91.2	141	88.1	
Education of Father	illiterate	5	3.1	7	4.3	0.907
	Low literate	27	16.9	26	16.3	
	High school Diploma	88	55	84	52.5	
	Bachelor	40	25	43	26.9	
Mother's education	illiterate	20	12.5	18	11.3	0.854
	Low literate	50	31.2	47	29.3	
	High school Diploma	79	49.4	80	50	
	Bachelor	11	6.9	15	9.4	
Number of family members	3-5	104	65	102	63.8	0.819
	6-8	54	33.8	56	35	
	Above or equal to 9	2	1.2	2	1.2	
History of mother's physical illness	Yes	22	13.8	37	23.1	0.220
	No	138	86.2	123	76.9	
History of mother's mental illness	Yes	6	3.8	2	1.3	0.152
	No	154	96.2	158	98.7	
History of father's physical illness	Yes	20	12.5	27	16.9	0.269
	No	140	87.5	133	83.1	
History of father's mental illness	Yes	4	2.5	2	1.3	0.411
	No	156	97.5	158	98.7	

Based on the results in Table 3 the mean scores of stress in the intervention and control groups before and after intervention were statistically significant different ($p < 0.001$), which means the mean stress score after intervention dropped in both groups. Reduced mean stress scores after the

intervention was not significant between the intervention and control groups ($P = 0.074$). It should be noted, because the scores before the intervention showed a significant difference, the analysis of covariance was used and it was not statistically significant after the intervention.

Table 3: Comparison of mean scores of premenstrual stress between intervention and control groups before and after intervention

Stress level	Intervention group		Control group		Mann-Whitney test
	Mean	SD.	Mean	SD.	
Before intervention	32.75	4.95	35.50	5.94	P value=0.002
After intervention	25.69	3.52	25.42	4.91	P value= 0.074
Wilcoxon test	P value<0.001		P value<0.001		

According to Mann-Whitney test, mean scores of stress in the intervention and control groups before and after the intervention was significantly different in the Nursing and Midwifery students, and the mean score of stress were reduced after the intervention in both groups and in both fields ($p<0.05$). The fields of study did not have any influence on the scores.

According to the findings in Table 4, mean scores of coping strategies before and after the intervention showed a significant difference in the control group ($p<0.05$). Mean score was increased after the intervention in intervention group. The difference in control group was not statistically significant before and after intervention ($p=0.022$).

Table 4: Comparison between mean scores of coping strategies in intervention and control groups before and after intervention using paired t-test

Coping strategies	Intervention group		Control group		Mann-Whitney test
	Mean	SD	Mean	SD	
Before intervention	143.38	16	131.72	13.02	P value=0.022
After intervention	137.08	18.33	132.11	14.06	P value=0.857
Wilcoxon test	P value<0.001		P value=0.07		

Discussion

This study showed that training "skills to deal with premenstrual stress" helps to reduce stress and improves coping strategies in students, although no significant difference was seen in mean score of stress in the intervention and control groups, scores of stress decreased after the intervention in the intervention group. In the study by LotfiKashani et al. (2007) on 42 students of Tehran University-Iran, the mean score of premenstrual stress was lower in the intervention group before the intervention than the control group and mean score of stress in the intervention group was at the same level after intervention compared to the control group and the difference was not statistically significant [23]. In a study by Alavi et al. (2007) no significant relationship was observed between field of study and mean score of premenstrual stress in the intervention and control groups before and after intervention [24], which is in line with the results in the current

work. In the present study, coping skills increased only in the intervention group, and the difference was significant compared with the control group, so the skills of coping with stress had profound impact on improving coping skills of students, because the difference between the two groups was significant after intervention. In the study by Yousefpour et al. (2009) aiming at determining the effect of life skills training on improvement of mental health, well-being and anxiety in physically disabled people in city of Tabriz-Iran, the physical signs were improved in physically disabled people after life skills training, and also a very significant difference in the anxiety was observed before and after the intervention, that is, anxiety of the physically disabled people was improved as a result of life skills training. In this study, self-awareness, problem solving, stress coping and communication skills were trained [10], the results of this study are similar to the findings in the present work. Given the high

prevalence of PMS and physical and mental symptoms caused by it, and since this condition can cause adverse effects on the quality of women's lives, so it is essential to consider supportive strategies and treatment to reduce the severity of symptoms and unfavorable complications. One of the techniques of coping with stress is coping skills training, which current study showed this technique does not have significant impact on reducing symptoms of premenstrual stress, irritability and improving coping skills and it is not effective.

The limitations of this study were that only 4 Skills out of 10 Life Skills were selected to train. It is suggested to hold more training sessions to a broader range of students of all fields and according to the controversy results about the effectiveness of this training, this technique should be carried out in the follow-up period longer than two months and with continuing education sessions for longer period.

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