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Quality of life and symptom severity in premenstrual syndrome: a quasi-experimental study

Zohre Safaian[1]
ORCID: 0000-0001-9019-1194

Mehri Kohan[2]
ORCID: 0000-0001-6306-2004

Seyed Mehdi Hoseinifard[3]
ORCID: 0000-0002-5130-6988

Mansooreh Azizzadeh Forouzi[4]
ORCID: 0000-0002-0338-7226

Yunes Jahani[5]
ORCID: 0000-0002-6808-7101

Atefeh Ahmadi[6*]
ORCID: 0000-0001-5366-9849

[1]Student Research Committee, Nursing Research, Razi School of Nursing and Midwifery, Kerman University of Medical Sciences, Kerman, Iran

[2]Midwifery Department, Nursing Research Center, Razi School of Nursing and Midwifery, Kerman University of Medical Sciences, Kerman, Iran

[3]Public Education Department, Afzalipour Medical School, Kerman University of Medical Sciences, Kerman, Iran

[4]Neuroscience Research Center, Neuropharmacology Institute, Nursing Research Center, Kerman University of Medical Sciences, Kerman, Iran

[5]Biostatistics Department, Modelling in Health Research Center, Institute for Futures Studies in Health, Kerman University of Medical Sciences, Kerman, Iran

[6]Nursing Research Center, Midwifery Counselling Department, Razi School of Nursing and Midwifery, Kerman University of Medical Sciences, Kerman, Iran

Corresponding author:
Atefeh Ahmadi
E-mail: a.ahmadi@kmu.ac.ir

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ABSTRACT

Objective: The current study was conducted to investigate the effectiveness of group counseling on quality of life and symptom severity among university students with Premenstrual Syndrome. **Method:** After filling in PSST and participating in SCID-CV, 120 students answered the demographic and WHOQOL questionnaires. Using classified random sampling, they were divided into control and intervention groups. The Intervention Group participants attended six group counseling sessions. They post-tested at two moments (immediate post-test and after one month). **Results:** The results of the immediate post-test indicated improvements in overall quality and in some domains ($p<0.005$) in the Intervention Group, and the second post-test showed an improvement in two of the domains ($p<0.005$). One month later, some symptoms were clearly improved in the Intervention Group ($p<0.005$). **Conclusion:** Group counseling improved the students' quality of life and severity of the Premenstrual Syndrome symptoms.

DESCRIPTORS: Premenstrual Syndrome; Quality of Life; Group Counseling.

INTRODUCTION

Premenstrual Syndrome (PMS) points to some psychological, physical, emotional and behavioral signs which take place periodically during the luteal phase[1]. The effect of fluctuations in the level of ovarian steroids or their metabolites on the neurotransmitter system, or the imbalance in brain receptors, can be related to the pathogenesis of Premenstrual Syndrome[2]. PMS diagnosis depends on the existence of its specific symptoms, on the symptoms' onset and their severity, and on ruling out other diagnoses[3]. Prevalence of PMS is approximately 20%-32% in premenopausal women and 30%-40% in women of a reproductive age[4], with symptoms divided into three categories: behavioral, psychological and physical. The behavioral symptoms include fatigue, insomnia, confusion and changes in libido and appetite. The mental symptoms are irritability, anger, crying, anxiety, difficulty concentrating and low self-esteem. The physical symptoms include headache, breast tenderness, back pain, abdominal pain, flatulence, weight gain, edema, water retention, nausea and pain in muscles and joints[5]. In addition, PMS exerts adverse effects on health and quality of life[6].

Women can control PMS symptoms and prevent occurrence of its disadvantages in their lives. Lifestyle changes, participation in support groups, medication and vitamin supplement use and stress management techniques can alleviate the symptoms[7]. Family understanding was associated with alleviation of premenstrual distress. Implementing programs on PMS issues with effective counseling for symptomatic students can guide them to alleviate psychological stress and improve their productive life[8]. Health education programs regarding PMS and other menstrual problems in High School curricula reduced the prevalence of such problems[9].

In this regard, considering the role and importance of this syndrome in the incidence of many personal and social problems, the current study was conducted aiming to investigate the effectiveness of group counseling on quality of life and symptom severity among university students with Premenstrual Syndrome (PMS).

METHOD

Study design and participants

The current research was an intervention study with pre-test, post-test and Control Group on the quality of life of university students with PMS. The statistical population of this study consisted of all 412 new students at the Bachelors', Pharmacy PhD, Dentistry PhD and General Medicine majors at the Kerman University of Medical Sciences. The participants were selected by means of stratified random sampling. With possibility of first type error (0.05) and 80% statistical power, 100 individuals were selected as research sample.

Inclusion criteria: not being married; being aged between 20 and 30 years old; having a Body Mass Index below 30; having passed at least 5 years from menarche; having a regular menstrual cycle; and meeting the diagnostic criteria for PMS.

Exclusion criteria: using medications that affect PMS, such as sedative drugs, sleeping pills, hormonal drugs, anti-prostaglandins, diuretics and types of contraceptive pills; taking minerals and vitamins, including vitamin B6, more than one month before the training course and during the research; using complementary methods such as cryotherapy, thermotherapy, massage therapy and psychological counseling; and presenting chronic physical diseases.

Procedure

In the current study, the eligible participants were enrolled after obtaining their approval and consent. At a first moment, the students with PMS were detected using a Premenstrual Symptoms Screening Tool. Subsequently, to verify absence of mental health problems, the Structured Clinical Interview DSM-IV (SCID), Clinical Version (SCID-CV)[10], was conducted by a Clinical Psychology PhD. Later on, self-reporting methods were used to verify absence of specific diseases and use of certain medications. Finally, a demographic questionnaire and WHO Quality of Life - BREF (WHOQOL-BREF) were answered. In this study, due to the fact that sex before marriage is contrary to the ethics and norms of our society, question 21 related to sexual satisfaction in the Quality of Life questionnaire was removed. The participants were divided into two groups, experimental and control, by means of simple random sampling. The participants in the Intervention Group attended six group counseling sessions, two-hours a week, focusing on the concepts related to menstruation and to Premenstrual Syndrome, lifestyle aspects (diet and exercise) and stress management skills, while no intervention was applied in the Control Group. The research questionnaires were answered at three moments: before the intervention, immediately after the intervention, and one month after the end of the intervention[11].

Data collection instruments

A) Premenstrual Symptoms Screening Tool (PSST): it was created in 2003 by Steiner et al.[12]. Validity and reliability of PSST were proved for implementation in Iran by SiahBazi in 2011. It consists of two parts. The first contains 14 questions about physical, behavioral and mood-related symptoms. The second consists of 5 questions assessing the effect of the symptoms from the first part on life. All 19 questions offer four options: Not at all, Mild, Moderate and Severe, each of which is scored from 0 to 3. To detect moderate or severe PMS, the following three conditions must be met: 1- For items 1 to 4, at least one Moderate or Severe option must be chosen; 2- In addition to the previous part, for items 1 to 14, at least 4 Moderate/Severe options or both must be chosen; and 3- In the section concerning the effects of the symptoms on life (the last 5 items), one Moderate or Severe option must be chosen. In addition, to detect premenstrual dysphoric disorder, the following three conditions must be met: 1- For items 1 to 4, at least one Severe option must be chosen; 2- In addition to the previous part, for items 1 to 14, at least 4 Moderate/Severe options or both must be chosen; and 3- In the section concerning the effects of the symptoms on life (the last 5 items), one Severe option must be chosen[13].

B) WHO Quality of Life - BREF (WHOQOL-BREF): it was taken from the 100-item version of the questionnaire. It contains 26 questions. Validity and reliability of the questionnaire were verified in 2006 by Nejat et al. The first two items assess health status and overall quality of life. The remaining 24 items are distributed into four fields: physical health (7 items), mental health (6 items), social relationships (3 items) and environmental health (8 items). In the current study, after performing the necessary calculations, the score varied between 0 and 100 for each field separately[14].

C) Structured Clinical Interview DSM-IV (SCID), Clinical Version (SCID-CV): it was created in

1983 as a tool for the diagnosis of DSM-III and is simply used in Psychiatry. This questionnaire contains 6 patterns of Axis I and Axis II disorders. SCID-CV is used for psychiatric patients or patients with mental ailments. This questionnaire is designed to detect mental disorders[15].

Statistical analysis

Frequency and percentage indices were used for the analysis of the demographic variables; Shapiro-Wilk for normality of the quality of life domains; and t-test, chi-square, Mann Whitney, paired t-test and Wilcoxon to compare quality of life aspects. The t-test and the chi-square test were used to compare the intervention and control groups. In addition, the paired t-test was used to compare Quality of Life and PMS symptoms in both groups before and after the intervention. The t-test was used to compare the difference between the next score and the previous one in both groups and, if the data did not present normality, non-parametric tests such as Wilcoxon or Mann-Whitney were used. The significance level considered was 0.05.

RESULTS

The results showed that the mean age in both groups, intervention and control, was 19.31 ± 1.18 and 19.35 ± 1.33, respectively. The mean age at menarche in the intervention and control groups was 13.08 ± 1.31 and 13.04 ± 1.53, respectively. Most of the individuals in both groups, intervention (58.6%) and control (56.5%), also had regular menstruation cycles, and most of the students' mothers with Premenstrual Syndrome in the intervention (39.7%) and control (50%) groups had university education. In addition, most of the participants from the intervention (62.1%) and control (54.8%) groups were housewives. The jobs and schooling of most of the participants' fathers were employees and university education, with 51.7% and 43.1% and 54.8% and 38.7%, respectively, in the intervention and control groups. The highest frequency of moderate menstrual bleeding was 84.5% in the Intervention Group and 79% in the Control Group. The mean BMI in the intervention and control groups was 21.71 ± 2.87 and 21.38 ± 3.95, respectively. In addition, the mean interval between the menstruation cycle and duration of menstrual bleeding in the Intervention Group was 29.55 ± 10.17 and 6.25 ± 1.27, with 28.83 ± 6.70 and 6.37 ± 1.51 in the Control Group, respectively. The results also showed that there was no significant difference in terms of the demographic variables between the intervention and control groups. The comparison of the difference in the mental health, social relationships and environmental health scores in both groups, intervention and control, showed no significance difference one month after the intervention (Table 1).

The comparison between the overall quality and social relationships Quality of Life dimensional scores in the control and intervention groups one month after the intervention and before the intervention showed a significant difference in quality of life and no significant difference in social relationships (Table 2).

The comparison between the Premenstrual Syndrome symptoms one month after the intervention and before the intervention in the Intervention Group showed that most of the items were in a better condition (Table 3).

The comparison between the Premenstrual Syndrome symptoms one month after the intervention and before the intervention in the Control Group (Table 4) showed that most of the items are in a better condition in the Intervention Group.

Table 1 - Comparison of the difference in the mental health, social relationships and environmental health scores in both groups, intervention and control, one month after the intervention. Kerman, Iran, 2021

Variable (after-before)	Group	Mean±SD	Confidence Interval (95%)	Results of the test
Mental Health	Intervention Control	4.09±15.53 4.16±11.61	0.07(-4.92,5.06)	t=0.028 p=0.97
Social Relationships	Intervention Control	6.17±19.84 2.15±18.47	4.02(10.95,2.89)	t=1.51 p=0.25
Environmental Health	Intervention Control	7.26±16.79 2.64±13.06	4.61(10.03,-0.80)	t=1.68 p=0.09

Source: Prepared by the author, 2021.

Table 2 - Comparison between the overall quality and social relationships Quality of Life dimensional scores in the control and intervention groups one month after the intervention and before the intervention. Kerman, Iran, 2021

Variable		Mean ± SD		Median (upper quartile-lower quartile)		Results of the test	
Overall Quality	Before	Intervention	Control	Intervention	Control	Intervention	Control
	Post-test 1	48.14±75.68	48.17±52.65	(75,50.62)75	(75,50.62)50.62	67.1Z=	03.3Z=
		98.12±41.72	65.13±17.72	(75,87.71)75	(75,50.62)75	09.0P=	002.0P=
Social Relationships	Before	55.16±18.58	45.16±87.58	(75.68,91.47)33.58	(75.68,50)33.58	32.2Z=	81.0Z=
	Post- test 1	43.17±36.64	83.17±02.61	(75,33.58)66.66	(75,50)66.66	02.0P=	41.0P=

Source: Prepared by the author, 2021.

Table 3 - Comparison between the Premenstrual Syndrome symptoms one month after the intervention and before the intervention in the Intervention Group. Kerman, Iran, 2021 (to be continued)

Variables		One month after the intervention				Results
		Not at all	Mild	Moderate	Severe	
Nervousness / Irritability	Not at all	0(0)	0(0)	0(0)	0(0)	**0001.0P=**
	Mild	0(0)	2(100)	0(0)	0(0)	
	Moderate	3(10)	16(53.3)	7(23.3)	4(13.3)	
	Severe	1(3.8)	9(34.6)	10(38.5)	6(23.1)	
Anxiety / Stress	Not at all	1(100)	0(0)	0(0)	0(0)	**0001.0P=**
	Mild	3(21.4)	5(35.7)	5(35.7)	1(7.1)	
	Moderate	4(14.3)	14(50)	9(32.1)	1(3.6)	
	Severe	0(0)	5(33.3)	4(26.7)	6(40)	
Crying / Hypersensitivity to negative response	Not at all	4(30.8)	3(23.1)	4(30.8)	2(15.4)	**03.0P=**
	Mild	5(45.5)	4(36.4)	2(18.2)	0(0)	
	Moderate	4(22.2)	6(33.3)	5(27.8)	3(16.7)	
	Severe	5(31.3)	4(25)	5(31.30)	2(12.5)	
Depressed mood / Hopelessness	Not at all	4(57.1)	1(14.3)	2(28.6)	0(0)	**002.0P=**
	Mild	6(35.3)	4(23.5)	5(29.4)	2(11.8)	
	Moderate	3(17.6)	8(47.1)	5(29.4)	1(5.9)	
	Severe	4(23.5)	5(29.4)	5(29.4)	3(17.6)	
Loss of interest in work activities	Not at all	0(0)	0(0)	1(50)	1(50)	**009.0P=**
	Mild	3(15)	6(30)	10(50)	1(5)	
	Moderate	4(18.2)	13(59.1)	4(18.2)	1(4.5)	
	Severe	1(7.1)	7(50)	3(21.4)	3(21.4)	
Loss of interest in activities inside the house	Not at all	2(40)	2(40)	1(20)	0(0)	**001.0P=**
	Mild	4(33.3)	5(41.7)	2(16.7)	1(8.3)	
	Moderate	4(18.2)	10(45.5)	5(22.7)	3(13.6)	
	Severe	2(10.5)	1(5.3)	10(52.6)	6(31.6)	
Loss of interest in social activities	Not at all	1(33.3)	2(66.7)	0(0)	0(0)	**01.0P=**
	Mild	3(18.8)	6(37.5)	5(31.3)	2(12.5)	
	Moderate	6(22.2)	6(22.2)	10(37)	5(18.5)	
	Severe	3(25)	3(25)	5(41.7)	1(8.3)	
Difficulty concentrating	Not at all	1(50)	0(0)	1(50)	0(0)	**003.0P=**
	Mild	1(6.7)	5(33.3)	9(60)	0(0)	
	Moderate	5(19.2)	11(42.3)	8(30.8)	2(7.7)	
	Severe	1(6.7)	5(33.3)	5(33.3)	4(26.7)	

Source: Prepared by the author, 2021.

Table 3 - Comparison between the Premenstrual Syndrome symptoms one month after the intervention and before the intervention in the Intervention Group. Kerman, Iran, 2021 (conclusion)

Variables		One month after the intervention				Results
		Not at all	Mild	Moderate	Severe	
Fatigue / Lack of energy	Not at all	0(0)	0(0)	1(100)	0(0)	**0001.0P=**
	Mild	2(18.2)	5(45.5)	3(27.3)	1(9.1)	
	Moderate	3(13.6)	7(31.8)	8(36.4)	4(18.2)	
	Severe	4(16.7)	7(29.2)	10(41.7)	3(12.5)	
Overeating / Food cravings	Not at all	10(50)	6(30)	3(15)	1(5)	**66.0P=**
	Mild	2(12.5)	11(68.8)	3(18.8)	0(0)	
	Moderate	4(25)	4(25)	5(31.3)	3(18.8)	
	Severe	3(50)	1(16.7)	0(0)	2(33.3)	
Insomnia	Not at all	8(38.1)	12(57.1)	1(4.8)	0(0)	**06.0P=**
	Mild	5(27.8)	13(72.2)	0(0)	0(0)	
	Moderate	5(38.5)	5(38.5)	1(7.7)	2(15.4)	
	Severe	2(33.3)	2(33.3)	2(33.3)	0(0)	
Oversleeping	Not at all	5(35.7)	3(21.4)	3(21.4)	3(21.4)	**68.0P=**
	Mild	5(22.7)	9(40.9)	8(36.4)	0(0)	
	Moderate	3(27.3)	6(54.5)	1(9.1)	1(9.1)	
	Severe	0(0)	6(54.5)	2(18.2)	2(27.3)	
Feeling agitated or uncontrolled	Not at all	5(71.4)	2(28.6)	0(0)	0(0)	**0001.0P=**
	Mild	3(17.6)	12(70.6)	2(11.8)	0(0)	
	Moderate	4(21.1)	9(47.4)	3(15.8)	3(15.8)	
	Severe	2(13.3)	6(40)	4(26.7)	3(20)	
Having physical symptoms	Not at all	1(20)	2(40)	0(0)	2(40)	**01.0P=**
	Mild	4(26.7)	5(33.3)	6(40)	0(0)	
	Moderate	1(4.8)	10(47.6)	8(38.1)	2(9.5)	
	Severe	2(11.8)	5(29.4)	7(41.2)	3(17.6)	
Efficiency at work / school	Not at all	5(55.6)	2(33.3)	1(11.1)	0(0)	**001.0P=**
	Mild	4(28.6)	6(42.9)	3(21.4)	1(7.1)	
	Moderate	3(12.5)	11(45.8)	10(41.7)	0(0)	
	Severe	1(10)	5(50)	4(40)	0(0)	
Communication with peers and friends	Not at all	3(50)	3(50)	0(0)	0(0)	**002.0P=**
	Mild	3(14.3)	13(61.9)	5(23.8)	0(0)	
	Moderate	4(18.2)	10(45.5)	8(36.4)	0(0)	
	Severe	1(11.1)	4(44.4)	1(11.1)	3(33.3)	
Communication with the family	Not at all	3(60)	0(0)	0(0)	2(40)	**001.0P=**
	Mild	5(35.7)	4(28.6)	5(35.7)	0(0)	
	Moderate	6(22.2)	9(33.3)	10(37)	2(7.4)	
	Severe	4(33.3)	3(25)	3(25)	2(16.7)	
Social activities	Not at all	3(37.5)	3(37.5)	2(25)	0(0)	**08.0P=**
	Mild	6(24)	9(36)	9(36)	1(4)	
	Moderate	4(23.5)	7(41.2)	6(35.3)	0(0)	
	Severe	1(12.5)	3(37.5)	3(37.5)	1(12.5)	
Family responsibilities	Not at all	2(28.6)	2(28.6)	1(14.3)	2(28.6)	**15.0P=**
	Mild	8(40)	5(25)	7(35)	0(0)	
	Moderate	4(16)	10(40)	8(32)	3(12)	
	Severe	1(16.7)	1(16.7)	2(33.3)	2(33.3)	

Source: Prepared by the author, 2021.

Table 4 - Comparison between the Premenstrual Syndrome symptoms one month after the intervention and before the intervention in the Control Group. Kerman, Iran, 2021 (to be continued)

Nervousness / Irritability	Not at all	(0)0	(0)0	(0)0	(0)0	**P=0.0001**
	Mild	(0)0	(50)2	(50)2	(50)2	
	Moderate	(4)1	(36)9	(56)14	(56)14	
	Severe	(3)1	(2.15)5	(4.36)12	(4.36)12	
Anxiety / Stress	Not at all	(50)1	(0)0	(50)1	(0)0	**08.0P=**
	Mild	(1.23)3	(2.46)6	(1.23)3	(7.7)1	
	Moderate	(9.2)1	(6.28)10	(7.45)16	(9.22)8	
	Severe	(0)0	(25)3	(3.58)7	(7.16)2	
Crying / Hypersensitivity to negative response	Not at all	(50)2	(50)2	(0)0	(0)0	**001.0P=**
	Mild	(5.37)6	(8.43)7	(8.18)3	(0)0	
	Moderate	(1.9)2	(9.40)9	(8.31)7	(2.18)4	
	Severe	(0)0	(20)4	(35)7	(45)9	
Depressed mood / Hopelessness	Not at all	(3.33)1	(3.33)1	(0)0	(3.33)1	**02.0P=**
	Mild	(5.23)4	(2.41)7	(3.35)6	(0)0	
	Moderate	(3.14)4	(1.32)9	(3.39)11	(3.14)4	
	Severe	(1.7)1	(3.14)2	(7.35)5	(9.42)6	
Loss of interest in work activities	Not at all	(9.42)3	(6.28)2	(6.28)2	(0)0	**06.0P=**
	Mild	(8.27)5	(2.22)4	(3.33)6	(7.16)3	
	Moderate	(25)6	(25)6	(2.29)7	(8.20)5	
	Severe	(7.7)1	(5.38)5	(2.46)6	(7.7)1	
Loss of interest in activities inside the house	Not at all	(0)0	(100)1	(0)0	(0)0	**0001.0P=**
	Mild	(3.31)5	(50)8	(5.12)2	(3.6)1	
	Moderate	(1.7)2	(4.46)13	(3.39)11	(1.7)2	
	Severe	(9.5)1	(3.35)6	(2.41)7	(6.17)3	
Loss of interest in social activities	Not at all	(20)1	(80)4	(0)0	(0)0	**008.0P=**
	Mild	(8.23)5	(9.42)9	(19)4	(3.14)3	
	Moderate	(7.16)4	(8.45)11	(2.29)7	(3.8)2	
	Severe	(25)3	(25)3	(25)3	(25)3	
Difficulty concentrating	Not at all	(6.28)2	(9.42)3	(3.14)1	(3.14)1	**06.0P=**
	Mild	(4.15)2	(5.61)8	(4.15)2	(7.7)1	
	Moderate	(9.6)1	(5.34)10	(9.37)11	(7.20)6	
	Severe	(7.7)1	(2.46)6	(8.30)4	(4.15)2	
Fatigue / Lack of energy	Not at all	(3.33)1	(3.33)1	(3.33)1	(0)0	**050.0P=**
	Mild	(3.8)1	(3.33)4	(3.33)4	(25)3	
	Moderate	(4.7)2	(3.33)9	(3.33)9	(9.25)7	
	Severe	(0)0	(35)7	(50)10	(15)3	
Overeating / Food cravings	Not at all	(1.48)13	(2.22)6	(9.25)7	(7.3)1	**92.0P=**
	Mild	(4.47)9	(3.26)5	(1.21)4	(3.5)1	
	Moderate	(6.55)5	(1.11)1	(3.33)3	(0)0	
	Severe	(3.14)1	(9.42)3	(3.14)1	(6.28)2	
Insomnia	Not at all	(2.68)15	(7.22)5	(5.4)1	(5.4)1	**62.0P=**
	Mild	(3.33)9	(7.40)11	(5.18)5	(4.7)2	
	Moderate	(7.41)5	(25)3	(25)3	(3.8)1	
	Severe	(0)0	(100)1	(0)0	(0)0	
Oversleeping	Not at all	(3.27)3	(3.27)3	(5.45)5	(0)0	**14.0P=**
	Mild	(4.29)5	(9.52)9	(6.17)3	(0)0	
	Moderate	(8.4)1	(9.42)9	(6.47)10	(8.4)1	
	Severe	(1.23)3	(7.7)1	(1.23)3	(2.46)6	
Feeling agitated or uncontrolled	Not at all	(5.37)3	(50)4	(0)0	(5.12)1	**003.0P=**
	Mild	(2.46)6	(5.38)5	(7.7)1	(7.7)1	
	Moderate	(8.14)4	(7.40)11	(9.25)7	(5.18)5	
	Severe	(3.14)2	(4.21)3	(50)7	(3.14)2	
Having physical symptoms	Not at all	(6.28)2	(9.42)3	(6.28)2	(0)0	**23.0P=**
	Mild	(5.23)4	(1.47)8	(6.17)3	(8.11)2	
	Moderate	(8.4)1	(3.33)7	(1.38)8	(8.23)5	
	Severe	(9.5)1	(5.23)4	(4.29)5	(2.41)7	
Efficiency at work / school	Not at all	(3.53)8	(7.26)4	(20)3	(0)0	**39.0P=**
	Mild	(3.5)1	(9.57)11	(6.31)6	(3.5)1	
	Moderate	(4)1	(36)9	(44)11	(16)4	
	Severe	(0)0	(3.33)1	(7.66)2	(0)0	
Communication with peers and friends	Not at all	(25)1	(50)2	(25)1	(0)0	**11.0P=**
	Mild	(13)3	(2.46)12	(7.21)5	(7.8)2	
	Moderate	(5.11)3	(1.11)1	(8.30)8	(5.11)3	
	Severe	(0)0	(0)0	(6.55)5	(3.33)3	

Source: Prepared by the author, 2021.

Table 4 - Comparison between the Premenstrual Syndrome symptoms one month after the intervention and before the intervention in the Control Group. Kerman, Iran, 2021 (conclusion)

Communication with the family	Not at all	(0)0	(100)2	(0)0	(0)0	**0001.0P=**
	Mild	(1.21)4	(4.47)9	(6.31)6	(0)0	
	Moderate	(24)6	(32)8	(40)10	(4)1	
	Severe	(3.6)1	(25)4	(50)8	(8.18)3	
Social activities	Not at all	(6.28)2	(9.42)3	(6.28)2	(0)0	**80.0P=**
	Mild	(20)5	(36)9	(36)9	(8)2	
	Moderate	(8)2	(36)9	(44)11	(12)3	
	Severe	(0)0	(40)2	(60)3	(0)0	
Family responsibilities	Not at all	(40)2	(20)1	(40)2	(0)0	**07.0P=**
	Mild	(1.39)9	(7.21)5	(8.34)8	(3.4)1	
	Moderate	(1.11)3	(6.29)8	(4.14)12	(8.14)4	
	Severe	(6.28)2	(6.28)2	(6.28)2	(3.14)1	

Source: Prepared by the author, 2021.

DISCUSSION

The positive influence of counseling on severity of the PMS symptoms in the Intervention Group is consistent with the results found in some studies[16]. Other non-drug treatments were effective for PMS[17,18].

The results of the current study also showed that the number of symptoms decreased in the Control Group. Reduction of the symptoms in the Control Group was possible due to the relationships between some of the participants in the Intervention Group and those from the Control Group. Apparently, this result occurred while the researcher could not control it.

The results evidenced that, immediately after the intervention, all the scores for the quality of life aspects improved in the Intervention Group and that, in the Control Group, the overall quality of life and environmental health scores also improved. This result is consistent with those found in some studies[19].

The results of the current study also showed that, one month after the intervention, the improvements in environmental health and social relationships were significant in the Intervention Group. In the Control Group, similar findings were noticed in the overall quality of life, physical health and mental health mean scores. Salameh et al.'s findings pointed to significant improvements in the patients' quality of life in both groups, which were higher in the Intervention Group, although their findings in the follow-up phase indicated statistically significant differences in almost all the Quality of Life domains, in opposition with the results of our study, which only indicated improvements in two quality of life aspects in the follow-up phase[20]. This contrast might be due to the lower number of sessions and to the fact that the second post-test was conducted simultaneously with the participants' period of final exams.

As the results showed, various therapies can be used in order to reduce PMS symptoms, thus increasing quality of life in patients with this syndrome. It is worth mentioning that counseling is one of the easiest and most accessible therapies and that this consultation at the university level can be provided by trained graduates in the Counseling in Midwifery major. Counseling sessions have fewer side effects and are cost effective when compared to other treatments; it is recommended to conduct more studies in this sense, although with more consultation sessions.

Study limitations: In the first place, the statistical population was only limited to students attending KMU. Secondly, filling out of the questionnaires in the follow-up phase was simultaneous with the start of the students' period of final exams, which generated certain stress and unwillingness in some participants to cooperate with the researchers. Finally, the relationship between both groups, as explained above.

CONCLUSION

PMS is a common syndrome among women of reproductive age. Regarding the effectiveness of group counseling in this study, it can be used to improve the students' quality of life and symptom severity among females with Premenstrual Syndrome.

CONFLICT OF INTEREST

The authors have declared that there is no conflict of interest

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AUTHORSHIP CONTRIBUTIONS
Project design: Kohan M
Data collection: Safaian Z, Hoseinifard SM
Data analysis and interpretation: Jahani Y
Textual writing and/or critical review of the intellectual contente: Forouzi MA
Final approval of the text to be published: Ahmadi A
Responsibility for the text in ensuring the accuracy and completeness of any part of the paper: Ahmadi A