

Study of the Prevalence of Premenstrual Syndrome and the Frequency of Religious Behaviors, Yoga, and Exercise in Reducing Anxiety/Stress Symptoms in Premenstrual Syndrome Sufferers in High School Girls in Shiraz

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Abstract

Background: Premenstrual Syndrome (PMS), according to Changes in mood, mental, physical and quality of life is the question the general tendency of women to reduce the negative effects of these emotions look like? **Objectives:** Investigation of psychological characteristics of Premenstrual Syndrome and frequency of caring behaviors at different ages in girls in Shiraz High School. **Methods:** This cross-sectional study was done on 200 students studying with premenstrual syndrome in city of Shiraz in 2013. Multi-stage cluster sampling was selected randomly. Student's eligible screening questionnaire PMS (PSST) for two consecutive cycles completed. Then Behaviors of self-medication to reduce anxiety and stress was questioned. Analysis of data using statistical software SPSS (version 16) and Chi-square test was performed. **Results:** The prevalence of premenstrual syndrome were 25%. Between age and anxiety and stress (PV: .002) was significant relationship, But Between age and anger and irritability (PV: .078) and sensitivity (PV: .066) girls did not have a statistically significant relationship. Non-drug measures to reduce anxiety and irritability in girls at 17.5% religious practices (prayer) in 58% Yoga and in other cases are taken from exercise techniques. **Conclusion:** yoga, sports and religious practices (prayer) in order to improve the symptoms of premenstrual syndrome in girls' self-care measures have been carried out. On this basis it is proposed to adjust the appropriate health plan.

Keywords: *Premenstrual Syndrome; Religion; Yoga; Exercise*

Introduction

Premenstrual syndrome is one of the psychosomatic problems related to women's reproductive function that is associated with affective and emotional disorders such as anger, anxiety and irritability (1). This syndrome as a periodic event is a combination of physical, neurological and psychological disorders that causes problems in social adjustment, intrapersonal communication and normal activities of

the individual and negatively affects one's quality of life (2). This syndrome occurs after ovulation in the luteal phase. The symptoms can occur in the early, middle or late stages of the luteal phase (3). In some resources, these disorders were reported 11 days before the start of menstrual bleeding (4) and in some other sources reported as one week before to one week after menstruation (5).

According to studies, it is estimated that in the United States women have been involved in these symptoms for 3000 days (6). About 75 to 85% of women of childbearing age are affected by a number of symptoms, of which 10% to 15% tend to use medical treatment (7). The incidence of this syndrome can have significant costs for the individual and society. In America, women who experience symptoms of this syndrome should pay more than \$ 4,500 in 2 years for the treatment costs incurred per year (8)

The results of the study by Zacher et al (2014) showed that 75% of women of childbearing age are involved in the symptoms of premenstrual syndrome (9). Mild to moderate symptoms occurred in 30 to 50% of people and severe and refractory symptoms were seen in 4 to 14% of the individuals (10). More than 20% of patients were also forced to undergo clinical treatment (11). Among the most commonly reported physical symptoms of this syndrome are painful and sensitive breasts, bloating, headache, facial pimples, chronic fatigue, headaches and weight gain due to water retention (12-13).

Unstable mood, irritability, anxiety, depression, periods of crying, rapid mood changes, excitability, anger, difficulty concentrating, sleep disturbance and social withdrawal are also the most common psychological symptoms of premenstrual syndrome. Besides, the results showed that high self-esteem is decreased in patients with premenstrual syndrome. Due to the mood disorders, the subjects may avoid their perfection tendency and intensify their negative self-concept leading to low self-esteem. Different treatments, particularly psychological remedies, are required for those suffering from PMS (5, 14-16).

In the study of Paita (2010) on 1053 women aged 18-40 in Brazil, the most common psychological symptoms including restlessness, anxiety, irritability, anger, aggression, mood swings, crying and the most common physical symptoms including headache, muscle cramps, swelling or pain in the breasts (17) were reported. Given the high prevalence of this syndrome, its known symptoms and its impact on adolescents' quality of life,

Objectives

Investigation of psychological characteristics of Premenstrual Syndrome and frequency of caring behaviors at different ages in girls in Shiraz High School

Methods

This is a descriptive study conducted to evaluate the prevalence of premenstrual syndrome and non-pharmacological treatments used to reduce anxiety and stress in high school girls in Shiraz. The study population included all high school students in 4 districts of Shiraz who were eligible for the study inclusion.

Sample size was calculated using the following formula of the calculation of sample size, $P=0.25$, $d=3(0.12p)$, with significant level of 5% and power of 0.9. The minimum sample size would be 800 individuals.

$$\frac{z_{1-\alpha/2}^2 p(1-p)}{d^2}$$

200 students from each region and 800 students in total were randomly selected by cluster sampling method. 800 people completed PSST (premenstrual syndrome screening Tool) questionnaire for two consecutive months and those with a score of more than or equal to 20 were identified as the final sample of the study and patients with premenstrual syndrome. Finally, 200 eligible students were selected.

The study inclusion criteria included: 1- Willingness to participate in the study 2- Students studying at the three levels of high school 3- Students selected from high schools in all 4 districts of Shiraz. The study exclusion criteria included: 1- Student's willingness to leave the study 2- Parents' request for their child to leave the study. For sampling, first 800 students were selected by cluster sampling method and then simple sampling was used after high school identification. Students completed the demographic questionnaire and the PSST questionnaire. The questionnaires were completed again in the following month and 200 of the 800 students with premenstrual syndrome were selected.

The PSST Questionnaire is a 5-item questionnaire designed to examine the symptoms of premenstrual syndrome (PMS) and its impact on people's lives. It has two parts. The first part consists of 14 questions on mood, physical and behavioral symptoms. The second part consists of 5 questions and assesses the impact of these symptoms on individuals' lives. For each question, four criteria of not at all, mild, moderate, and severe are considered and scored from zero to three. The minimum score is zero and the maximum is 57. Scores of 0-19 indicate mild symptoms, 20-38, indicate moderate symptoms and 39-57 indicate severe symptoms. The validity and reliability of this questionnaire evaluated in Iran. In testing the reliability of this tool, Cronbach's alpha value of 0.9 was obtained. Content validity ratio and content validity index were 0.7 and 0.8, respectively, indicating high validity of this questionnaire. The basis of the present study is the validity and reliability of the study by Shiva Siahbazi et al. (18). The collected data were analyzed using Chi-square test.

In terms of ethical considerations, a written consent was obtained from all participants and girls who were unwilling to continue the project were excluded. This study has been approved by the Ethics Committee of Shiraz University of Medical Sciences.

Results

The mean age of the girls in this study was 15.01 ± 0.918 . The prevalent age was 14 years (36.5%), 31% were at age of 15, 27.5% were at age of 16 and 5% were at age of 17.

The prevalence of premenstrual syndrome was estimated to be 25%. 29.5% of the cases had mild symptoms, 45% had moderate symptoms and 25.5% had severe symptoms. There was a statistically significant relationship between age, anxiety and stress (PV: .002) (Table 1) but there was no statistically significant relationship between girls' age, anger, irritability (PV: .078) (Table 2) (Table 2) and excitability (PV: .066) (Table 3). Among non-pharmacological measures to reduce anxiety and irritability in girls, religious behaviors (prayer and saying prayer) were used 17.5%, yoga 58% and in other cases exercise techniques were used. There was no significant relationship between self-care and anxiety reduction (PV: 0.225) (Table 4).

Discussion

Our study showed that the prevalence of PMS was 25% with moderate symptoms at 45% of the cases. The results of Ramezanpour et al study showed that the prevalence of PMS was 78.1%. The severity of this complication was severe in 13 (4.7%) students, moderate in 34 (12.8%) and mild in 196 students (72.5%) (19)

In another study in Iran, the highest and the lowest prevalence of PMS were in Associate Degree (66.7%) and Bachelor Degree (41.4%), among which the highest prevalence was in Laboratory Science students (66.9%) and in medical students, 54.9% had premenstrual syndrome (20). In another study in Kerman high schools, the prevalence of PMS was estimated as 66.5% and the symptoms were moderate to severe in 37.6% of the cases (21). The results of these two studies were inconsistent with our study, but as in our study, the highest frequency of this syndrome was moderate. In other countries, the highest frequency of this syndrome was reported as 76.7% (22) in women of childbearing age, 65% among Egyptian girls (23) and 49.33% in another study (24).

The differences between the results of these studies and their concordance with some of them may be for the following reasons. It seems that one of the factors is the high level of trainings which increases women's awareness of problems related to their reproductive system and they go to the clinics to cure it instead of ignoring or concealing the problems of this syndrome. Another justification reported in some studies was related to the level of maternal education. PMS was higher in girls whose mothers were more educated (25). Another factor that may account for the differences is that the syndrome affects women's quality of life (26-27, 15) and the same time the family culture, environmental stress and lifestyle may also influence the incidence and severity of symptoms which lead to differences in the results of the studies. The results of our study showed that there was a significant relationship between age, anxiety and stress. Some studies also showed that this syndrome is related to age (28).

Also in the studies of some authors the high incidence of anxiety disorders coincide with this syndrome were observed (29-32). In the Ramezanpour study, age was also associated with symptoms of the syndrome and the most common reported symptoms were anxiety feeling, stress, and being worried (45.7%) (19) that was consistent with our study.

Among self-treatment measures to reduce anxiety and irritability in girls, religious behaviors (prayer and saying prayer) were used 17.5%, yoga 58% and in other cases exercise techniques were used. Other studies have also reported that educational-care programs and the use of herbal medicines are suitable for reducing stress and improving mental health, preventing and treating mental disorders, emotional growth, and developing communication skills in female students with premenstrual syndrome (31,33-34). Many studies introduced yoga as a tool of concentration that frees the mind from unpleasant thoughts and often as a union between the soul and the body in the recovery of individuals (35-36). Physical and respiratory exercises in Yoga had a positive effect on cognitive functioning and affective functioning, reduced central and automatic nervous system activity, controlled stressful situations by releasing relaxant hormones (37) and decreased sympathetic nervous system activity (38-39).

But a group of girls also helped with religious practices and behaviors to reduce irritability and premenstrual nervous tensions. At a time of psychological stress, people of all races and cultures were assisted from a divine source and sought refuge in their religious traditions (40). Spiritual interventions based on Islamic principles can provide support for psychological health, increased hope, and a better quality of life in people with full stress disorder (41).

Some scholars argued that religion is a source of support for individuals facing problems and religious beliefs and practices such as prayer, trust in God and appealing to God defined as methods to deal with stress. Also, religious behaviors like prayer, sincerity and faith in God and reading religious books creates a kind of inner peace by providing hope and encouragement to create a positive view of the situation that brings the person out of a desperate crisis that he or she has little control over it (42). Another study showed a correlation between high prevalence of depression and spiritual values (43).

Various studies reported the effect of religion-based therapy on enhancing quality of life (44), the efficacy of religion-based behavior therapy (45) and emphasized the religious-oriented counseling and religious-based psychotherapy to reduce health and depression problems (46).

The above studies are similar to our study on the research population which showed that adherence to religious behaviors and religious attitudes had an effective role in reducing stress and psychological problems caused by PMS. Limitations of the study included a limited research population as well as a survey of high school girls which is not generalizable to other age groups.

Conclusion

Yoga, exercising, and practicing religious behaviors (prayer and saying prayer) were effective in improving the symptoms of premenstrual syndrome, respectively. It is recommended that an interventional and comparative study be performed to compare the effects of the above triple factors and to conduct long-term follow-up studies.

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Conflicts of interest

In this study we have not any conflicts of interest

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Table 1: The relationship between age and mood changes, anxiety / stress

symptoms									PV
age			anxiety / stress						
			no	mild	moderate	sever	total		
1	14	Count	36	37	0	0	73	Fisher's Exact Test Value: 23.304 Df:6 PV=0.002	
		%	37.9%	45.1%	0.0%	0.0%	36.5%		
	15	Count	30	24	4	4	62		
		%	31.6%	29.3%	33.3%	36.4%	31.5%		
	16	Count	24	17	7	7	55		
		%	25.3%	20.7%	58.3%	63.6%	27.5		
	17	Count	5	4	1	0	10		
		%	5.3%	4.9%	8.3%	0.0%	5%		
Total		Count	95	82	12	11	200		
		%	100.0%	100.0%	100.0%	100.0%	100%		

Table 2: The relationship between age and mood changes, Anger and irritability

symptoms							PV
age			Anger and irritability			Total	
			no	mild	moderate		
	14	Count	33	40	0	73	Fisher's Exact Test Value: 14.014 Df:6 PV: .078
		%	36.3%	40.8%	0.0%	36.5%	
	15	Count	29	29	4	62	
		%	31.9%	29.6%	36.4%	31.0%	
	16	Count	24	24	7	55	
		%	26.4%	24.5%	63.6%	27.5%	
	17	Count	5	5	0	10	
		%	5.5%	5.1%	0.0%	5.0%	
Total		Count	91	98	11	200	
		%	100.0%	100.0%	100.0%	100.0%	

Table 3: The relationship between age and mood changes, increased sensitivity

		Increased sensitivity				Total	PV
age			no	mild	moderate		
	14	Count	41	32	0	73	Value: 11.144
		%	36.3%	42.1%	0.0%	36.5%	df:6 PV:0.066
	15	Count	35	23	4	62	
		%	31.0%	30.3%	36.4%	31.0%	
	16	Count	31	17	7	55	
		%	27.4%	22.4%	63.6%	27.5%	
	17	Count	6	4	0	10	
		%	5.3%	5.3%	0.0%	5.0%	
	Total	Count	113	76	11	200	
		%	100.0%	100.0%	100.0%	100.0%	

Table 4: The relationship between age and non-pharmacological methods of self treatment

Age		Non-drug -Self treatment				PV
		Religious behavior	yuga	exercise	total	
14	Count	16	34	23	73	Pearson Chi-Square Value: 8.186 df:6 PV:0.225
	%	21.9%	46.6%	31.5%	100%	
	%	45.7%	29.3%	46.9%	36.5%	
15	Count	8	41	13	62	
	%	12.9%	66.1%	21.0%	100%	
	%	22.9%	35.3%	26.5%	31%	
16	Count	8	35	12	55	
	%	14.5%	63.6%	21.8%	100%	
	%	22.9%	30.2%	24.5%	27.5%	
17	Count	3	6	1	10	
	%	30.0%	60.0%	10.0%	100%	
	%	8.6%	5.2%	2.0%	5%	
Total	Count	35	116	49	200	
	%	17.5%	58.0%	24.5%	100%	
	%	100.0%	100.0%	100.0%	100%	

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