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## ORIGINAL ARTICLE

### Evaluation of mental and behavioral symptoms in women with premenstrual syndrome

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#### ABSTRACT

Premenstrual syndrome includes either a set of noxious changes such as physical, psychological or behavioral changes in menstrual cycle (luteal phase). The severity of these changes results in disturbance in normal activities and inter-personal relationship. This study analyses the syndrome, prevalence and also most common psychological features in 15-45 years old women. Method: The numbers of 280 women (15- 45 years old) were investigated among common people randomly including the information to study premenstrual syndrome features. Questioned factors were PMS psychological symptoms (anxiety, nervousness, aggression) and correlation between age and Premenstrual syndrome. The data were investigated by statistical software SPSS 18 version. Results: The prevalence of psychological symptoms was 13.5% and the PMS prevalence 66.1% in this study. The most common psychological features of this syndrome are among all of age groups including nervousness (82.5%), anxiety (75.7%) and oral aggression (72.0%). Also the rate of PMDD is higher in lower age groups ( $P<0.001$ ). Also the severity of PMS is decreased by increasing marriage age ( $P=0.043$ ). Conclusion: According to present study results, it should be mentioned that the most common psychological symptoms of PMS include nervousness, anxiety, and oral aggression. These psychological symptoms have high percentage among studying population. So the determination of the risk factors and family member's knowledge about these symptoms could prevent many social and family problems.

**Key words:** Premenstrual syndrome, age, behavioral symptoms, psychological symptoms.

#### Introduction

In 1931 Rt. Frank described premenstrual syndrome Forthe first time [1,2]. Also, it is many years that some symptoms such as behavior and recurrent physical symptoms are determined simultaneously by menstrual cycle called premenstrual syndrome [1,2]. In the situation of PMDD about 84- 90% of pregnant women experience physical and behavior symptoms of this syndrome before menstruation [3,4,5]. However these symptoms are slight among some women, but the severity of these symptoms can affect the life quality in some women [4,5]. The main cause of this syndrome is unknown. Scientists contribute many factors to treat this syndrome and many attempts have performed [8-6-4]. According to available resources with regard to premenstrual syndrome, there are many intervention variables. These variables affect on this syndrome process [9,10,11]. The symptoms of this syndrome are likely related to complex interferences of ovarian hormones, central neurotransmitters and autonomic nervous system. No

clear theory has been designed to this disorder. This disorder has been called thousand faces and specialists have considered 150 symptoms for that disorder (Spiraph). The symptoms are divided into psychological and physical groups [12]. The most prevalent symptoms include: anxiety, depression, psychological instability, irritability, nervousness, and nervous tensions, violence, sudden feeling of grief and crying, despair, suspicion, social withdrawaletc [13]. In one study of behavior disorder on 100 women with premenstrual syndrome, it had been mentioned that there were poor occupational efficacy (27/5%), occupational relationship disorder (22/1%), disagreement with spouse (82/8%), disagreement with children (61%) and social relationship disorder (41/5%). Also it has been mentioned that premenstrual syndrome is observed in 95% of women with low severity during fertility ages, but in 5% of women, the symptoms are so severe that resulted in daily activities disorder [14].

Another study has showed that 30% of women during menstrual phase had medium premenstrual physical, emotional and behavior symptoms. Only 3-

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8% of them had very serious and disabling symptoms that affected their occupational, social and family relationship function [15]. So according to high prevalence of this syndrome in society and its effects on patients social and personal function and considering the important role of women's social and personal functions, our study tries to evaluate the psychological and behavior symptoms in the premenstrual syndrome among 15-45 years old women.

#### *Method:*

The present study is a descriptive and prospective study and includes the numbers of 280 women (15-45 years old) that have common features (they are woman and with menstruation). The sampling method was performed in schools, universities, clinics and hospitals in Shiraz-Iran randomly. The exclusion factors include:

1. Reluctance to participate in the study,
2. The women who used contraceptive pills,
3. The women who used hormonal IUD,
4. Irregular menstruation,
5. Hx of psychiatric disorder,
6. presence of endocrine disorder,
7. Anemia,
8. Mournful women.

Then the questionnaire was distributed among age 15-45 years old women randomly including necessary data to study premenstrual syndrome features. The obtained data were considered. Premenstrual symptoms screening tool (PSST) is considered among the most important inventories. The design of this questionnaire is to gain a simple and easy screening tool for determining the women who suffer from premenstrual syndrome from premenstrual syndrome dysphoric disorder.

The mentioned questionnaire has changed classified standard DSM-IV to a graded scale based on the severity of disease. The designer of severity PSST believed that this questionnaire indicates the severity of disease at necessity and also indicates its effects of symptoms on individuals' life. The questionnaire consists of three parts. The first part includes information about herself such as age, height, weight, education, job, marital status, marriage age, the number of child, the age of the first menstruation, the numbers of hemorrhage days for every menstruation and others. The second part includes 29 questions about psychological, physical and behavior symptoms and the third part measured the effect of these symptoms on personal life that's including five questions: There are 4 parameters for each question in this study including: a) slight (the

symptoms are noxious but they don't affect the interpersonal relationships or routine activity), b) medium (the symptoms are noxious and affect some of interpersonal relationship or routine activities) c) Severe, the symptoms are very noxious and affect completely on inter personal or routine activation. Scoring method in this questionnaire was that the people were divided into 4 categories based on the severity: First: includes women who have not this syndrome and didn't have PMS syndrome symptoms. Second: includes those who have slight symptoms of this syndrome. Third: includes those who have medium to severe symptoms of this syndrome and these people should have one severe case to second part questions along with one medium case related to the third part or they should have one medium case of questions 1-4 of part 2, along with a severe case related to the third section. In either condition at least 4 over 8 questions 1-11 should be in medium or sever level.

The other cases that have PMS diagnostic symptoms and aren't among above mentioned categories, were considered slight PMS. Fourth: includes women with premenstrual dystrophic disorder. To determine PMDD, at least one severe case of 1-4 along with the other 4 cases of options of 1-11 that are medium or sever and at least one severe case of third section are necessary. Then related data in this study were used in descriptive statistical method including dispersion indices and tables for quantitative variables. Also inference statistics were used to data analysis. In the beginning, 95% confidence limits to PMS prevalence in age groups. Chi-square test was used to compare two qualitative variables. The exact fisher or method ant Karol test was used when the sample volume was not efficient. T-Test was used to compare quantitative variables in the two groups. Also person correlation coefficient was used. Equivalent average test was used to study the quantitative variables correlation and one way variance analysis.

#### *Results:*

Obtained results of this study indicate that out of 280 people who were studied, about 21.4% were not with this syndrome, 66.1% were with slight, medium and severe syndrome. Also 13.5% of them were with PMDD (table 1).

Also in the present study, most of the people (54.7%) were married and 13.9% (39 people) didn't determine their marital status (table 2).

**Table 1:** Overall prevalence PMS.

Variable	Number	Percent
NO PMS	60	21.4
Mild PMS	65	23.2
Moderate to severe PMS	120	42.9
PMDD	35	13.5

**Table 2:** Survey examples of maritalstatus.

	Number	Percent
Single	88	31.4
Married	153	54.7
No response	39	13.9
Total	280	100

Spearman non parametric correlation coefficient was used to study marriage age correlation with PMS severity. Based on these findings there is a significant inverse correlation between marriage age and PMS severity. The PMS severity is decreased by

marriage age increase ( $\gamma = -0.166, p = 0.043$ ). Also rank regression was used to study marriage age correlation and PMS severity. Based on obtained results PMS severity is increased by marriage age increase (Table 3).

**Table 3:** Rank regression results for the relationship between age and the severity of PMS.

CI for OR	OR	P- value	Coefficient	Variable
0.86 0.99	0.92	0.032	- 0.076	Age at marriage

Also based inserted finding in the Table 4, the ratio of PMDD is increased in the lower age groups and this ratio is decreased by increasing age and this

ratio is decreased from 20.5% in the age group 15-24 years old to 3.7% in the age group 35-45 years old. This correlation is significant statistically ( $p < 0.001$ ).

**Table 4:** PMS relationship with age.

Age	NO		Mild		Moderate to severe		PMDD		P-value
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	
15-24	18	16.1	20	17.9	51	45.5	23	20.5	<0.001
25- 34	21	23.9	21	23.9	37	42	9	10.2	
35- 45	21	26.3	24	30	32	40	3	3.8	

Also, the results of studying psychological features prevalence in the premenstrual syndrome are recorded such as Table 5 and the most prevalent

psychological features in all of age groups are related to nervousness and oral aggression but suicide thoughts have the least prevalence rate.

**Table 5:** The prevalence of psychiatric features of premenstrual syndrome.

Signs	Percent
Aggression and vulnerability	82.5
Anger	75.7
Verbal aggression	72
Loss of interest in usual activities	67.1
Feelings of anxiety and fear Feel	63.9
The desire to avoid loneliness and social	63.6
The desire to avoid loneliness and social	60.1
Shaky emotional state, such as crying	55.9
Distraction feeling	48.9
Subjective feeling of coming down	47.3
Feelings of being unattractive	40.1
Lower confidence	37.2
No reason to panic	35
Decreased libido	34.2
Increased Libido	32.5
Suicidal thoughts	10.5

### Discussion:

According to this study, the agitation and aggression are among prevalent symptoms of this syndrome. In some studies, it has been mentioned that agitation, irritability, the increase of stress, psychological fluctuation, behavior changes such as lack of motivations, social withdrawal, inefficiency, changing the routine activities methods, changing sexuality and crying are among most prevalent symptoms of this disease [16-19]. It has been determined that sexuality has decreased in the people with this syndrome and 55.9% of these people suffer from behavior changes such as crying. About 63.9%

of people with this syndrome suffer from anxiety and anguish and the other symptoms that have been mentioned in the table 5 which agree with previous studies. Previously, these studies mentioned that premenstrual syndrome resulted in disturbances in communication, natural activity as well as lack of motivation and lack of precision to perform person duties. High severity of symptoms affects personal quiescence and health [20,21].

In this study, 63.6% of despair feeling has been observed among the patients and 63.9 % of anxiety and anguish has also been observed among patients which agree with the previous studies. Meaden (In 2005) and Hichi (In 2002) had performed a study and

they mentioned that 2.7% and 3.5% of women were under study of PMDD (13.5%) but in our study, it has been reported that the prevalence of this disorder is at relative high level (13.5%). In the other studies, it has been determined that the prevalence of premenstrual syndrome in Thailand nurses who used standard PSST form to determine PMS, has been reported at 25.1% level [22]. In 2005, different studies have reported that rate of PMS prevalence in Japan at 5.3% level. In 2003 the designers of PSST questionnaire reported the rate of PMS prevalence and PMDD at 20.7% and 4.1% respectively [22].

Also in some studies performed in Iran, it has been determined that the rate of PMS prevalence is 4.9% that has been reported the same as the other countries [24]. In our study, the psychological symptom is 13.5% and the PMS prevalence is 66.1% which is a relatively high percentage. It can be mentioned that a part of this differences can be related to social and cultural differences, having negative view of menstruation and psychosocial and enforced limitations in women reaction concerning menstruation between different countries and societies. This difference is not merely related to the kind of tool. According to a study in Switzerland, obtained PMS symptoms prevalence at national level conforms to obtained results of PSST to determine medium to severe PMS and the use of German version of this questionnaire has been confirmed to PMS in Switzerland population [25].

Therefore as mentioned before the applied tool is not the symbol of difference in Iran and the other countries. The percentage of PMS has been decreased by increasing age. There is inverse correlation between the PMS rate and the time of marriage in the present study. In many studies it has been determined that PMS was lower in the age group of 21- 30 years old and the most its percentage was in the age group under 20 years old and there was a significant correlation between age and PMS. In 1995, It had been reported that there was an inverse correlation between age increasing and the reduction of PMS that agrees with present study [26]. In our study sexuality has been decreased in the people with PMS. In the past, Kiloton and Colleagues, in their report mentioned that women have symptoms such as breast sensitivity, meteorism and psychological disorders that all resulted in sexual motivation reduction significantly ( $\gamma < 27$ ).

#### *Conclusion:*

According to the results, PMS prevalence in women is at high level in Shiraz. So it is recommended that in the health centers, PMS should be considered in health personnel as one of prevalent disorder among women and all of cases about this syndrome suffering should be considered. Also necessary recommendations should be mentioned about methods to confront this syndrome and for

reducing its symptoms. In this study it is determined that PMDD prevalence among young people of our society is higher than old people. So more study about all factors of this syndrome and the comparison of efficient factors in different age's groups is of importance. The purpose of this study is to find a method to reduce the psychological problems induced by this syndrome and a beginning point to more studies in this field.

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