Original Article

Prevalence and severity of premenstrual symptoms among Iranian female university students

Nour Mohammad Bakhshani,[1] Mahnaz Nowroozi Mousavi,[2] Golbahar Khodabandeh[3]

Psychiatric and Clinical Psychology Department,[1] Research Center of Health Development,[3] Zahedan University of Medical Sciences, Zahedan, Iran, School of Foreign Services in Qatar, Georgetown University, Doha, Qatar.[2]

Abstract

Objective: To investigate the frequency of premenstrual symptoms and prevalence of PMS among young Iranian women.

Method: A cross-sectional study was carried out in 2005 among female students of Zahedan University (Iran), aged 18-27 years. Overall 300 participants were asked to complete an anonymous questionnaire assessing premenstrual symptoms. The items of the questionnaire were derived from DSM-IV diagnostic criteria for premenstrual dysphoric disorder and PMS symptoms reported in existing literature.

Results: Of the 300 participants, 98.2% reported at least one mild to severe premenstrual symptom and 16% met the criteria of DSM-IV for PMS. Most common symptoms were feeling of tiredness or lethargy (84%), depressed mood (72.3%), sudden feeling of sadness or tearfulness (70.3%), anxiety (70%), backache (69%) and sleep problems (66%). There was no significant difference in severity of symptoms based on marital status and living conditions (living with parents or away from parents), but severity of symptoms were significantly higher for the younger women (18-20 years) compared to the older women (21-24 and 25-27 years).

Conclusion: High frequency of premenstrual symptoms and significant prevalence of PMS was found in our study sample. Preventive and treatment strategies for PMS is highly recommended (JPMA 59:205; 2009).

Introduction

Premenstrual disorders include a range of premenstrual symptoms from mild premenstrual syndrome (PMS) to premenstrual dysphoric disorder (PMDD).[1] PMS has been variously defined and known as a psycho-neuro-endocrinal disorder of unknown etiology[2] that consists of a myriad of physical and psychological symptoms. First, Frank in 1931 described this clinical phenomenon and used the term "Premenstrual Tension".[3] The American College of Obstetrics and Gynecology (ACOG) guidelines for PMS[4] adopted the diagnostic criteria developed by the University of California at San Diego (UCSD) and the National Institute of Mental Health (NIMH). According to American College of Obstetrics and Gynaecology (ACOG) guidelines, PMS includes one or more affective or somatic symptoms that negatively impact a woman's function and lifestyle, occur during the five days prior to menses, and are present in each of three previous menstrual cycles.[4] The symptoms are relieved within four days of the onset of menses and do not recur until at least cycle day thirteen.[5] The American Psychiatric Association[6] has established criteria for the diagnosis of PMDD. The cyclic nature of depressive symptoms that occur in PMDD should help differentiate PMDD from other depressive disorders that occur throughout the cycle.

Reports on prevalence of PMS differ in different studies. For example, one study on adolescent sample (N=78) showed that 100% of the participants reported at least one premenstrual symptom of minimal severity.[7] Derman et al[8] conducted a study in Turkey that showed 61.4% of adolescent girls met DSM-IV criteria for PMS. Among women samples, up to 85% have reported one or more premenstrual symptoms.[4,9] Dean et al.[10] concluded that regardless of the criteria used, PMS prevalence ranges from 19% to 30%.

In terms of severity, research studies have reported up to 200 premenstrual symptoms of varying degrees of severity.[11] Overall, it is seen that PMS is associated with reduction in health related quality of life and women with PMS have greater work productivity impairment than women without PMS.[10] Pearlstein et al.[12] in a study on 276 women who met DSM-IV criteria for PMDD found that the most frequent PMDD symptoms included anger/irritability (76%), anxiety/tension (71%), tiredness/lethargy (58%), and mood swings (58%). For 2-10% of women the symptoms are disabling.[4,9]

As the reviewed literature indicates, significant group of women experience various degrees of PMS. In addition, PMS symptoms can have debilitating effects on women's quality of life and work production. However, race, ethnicity,[13,14] and culture[15] may influence expression of premenstrual symptoms and their severity. Most current

studies on PMS have been conducted in western countries. Thus, it is imperative to investigate the prevalence, severity, and most common symptoms of PMS among various populations to promote quality of life, health and well being of reproductive age women in that population. To our knowledge there is no such study among Iranian women of any age groups. The current study investigated the prevalence, symptoms and severity of PMS among a group of female college students in a southeastern city of Iran.

Subjects and Methods

This cross-sectional study was conducted between September and December 2005 on female students of Zahedan University of Medical Sciences, after obtaining approval from the university's Institutional Review Board. Overall, 300 female students were randomly recruited. Participation in the study was voluntary and if a student refused to participate, another student was included. Questionnaires were handed out to the students in the classroom and collected after being filled.

A questionnaire was designed with the help of DSM-IV definition of PMDD and existing literature on PMS.

The questionnaire consisted of two sections. The first part included socio-demographic questions as age, marital status, and residency condition (i.e., living with parents or alone. The second part included 23 self-reported items assessing frequency and severity of PMS. The participants were asked to identify symptoms they had experienced during two weeks preceding their menstruation (3 days, 4-6 days, or 7-14 days before menstruation) in the past three months. The respondents were further asked to rate the severity of the symptoms on a 5-point Likert scale: 0=not at all, 1= mild, 2= moderate, 4=severe, and 5=extremely severe. The latter part of the questionnaire was validated by expert consensus.

Statistical Program for Social Sciences (SPSS) version 11 software was used to analyze the collected data. The prevalence of each symptom was calculated by computing the ratio of the women reporting the symptom to the total number of participants. T-tests and ANOVAs were used to test significant differences in severity of symptoms based on marital status, age, and living conditions. The results were considered significant at $p< 0.05$ and non-significant at $p>0.05$.

Results

The age of 300 students who participated in this study ranged from 18 to 27, with a mean age of 21.64±2.13 years. In all, 298 (98.2%) of the participants reported experiencing various degrees of at least one symptom of 20 symptoms included in the questionnaire. The most prevalent symptoms were feelings of tiredness or lethargy (84%), depressed mood (72.3%), sudden feeling of sadness or tearfulness (70.3%), anxiety (70%), backache (69%) and sleep problems (66%). The most common physical premenstrual symptoms were backache (69%), abdominal bloating (55.3%), joint or muscle pain (52%), acne (48.3%) and headache (47%) while the most common psychological symptoms were tiredness (84%), depressed mood (72.3%), mood changes (sudden feeling of sadness or tearfulness) (70.3%), anxiety (70%), and sleep problems (66%).

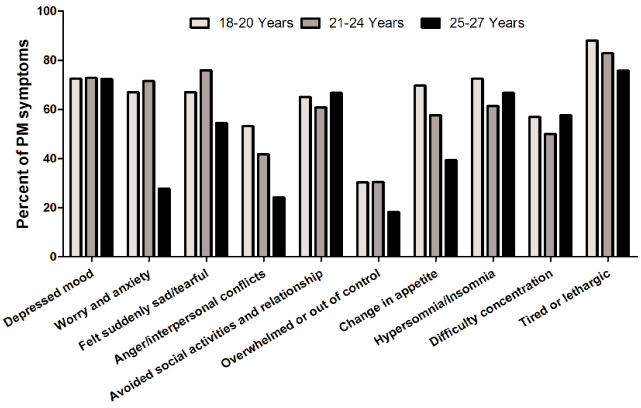

Fig 1: Prevalence of psychological symptoms of PMS by age groups.

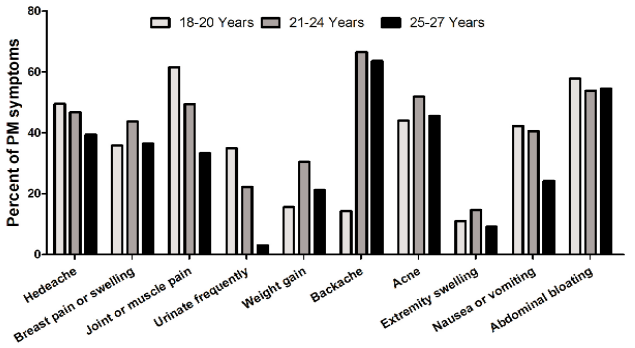

Fig 2: Prevalence of physical symptoms of PMS by age groups.

The symptoms of PMS, both psychological and physical according to age groups are shown in figures 1 and 2.

Table: Comparison of symptoms severity of PMS according to marital status, living conditions and age groups.

Variables	N	Symptoms severity of PMS Mean	t(F)	P
Marital Status				
Married	43	37.9±11.76	t= 1.08	0.26
Single	257	39.89±10.98		
Living				
With parents	139	38.62±10.36	t= 1.42	0.15
Far from parents	162	40.45±11.66		
Age				
17-20 years	109	40.68±10.83	F= 3	0.05
21-24 years	158	39.73±11.54		
25-27 years	33	35.42±8.9		

Backache, tiredness, mood changes, depressed mood and anxiety were the most prevalent symptoms reported as severe or extremely severe. The symptoms severity in relation to marital status, living conditions and age can be seen in Table. No significant difference was found between married and unmarried women and those living with their parents compared to the ones living away from parents. A significant difference in symptoms severity was observed in the 3 age groups, with the 18-20 years old age group having the highest figures.

Discussion

The presented study conducted on university students reported 98.2% participants to have various degrees (mild to severe) of at least one PM symptom. Chang et al.[16] observed that 92% of Chinese women in their study experienced some PMS symptoms. Cleckner-Smith et al.[7] in an adolescent sample showed that all participants (N=78) had at least one premenstrual symptom of minimal severity. Symptoms were considered moderate (88%), severe (73%), or extreme (56%). Thu[17] found more than 98% of their respondents in Thailand suffered from one or more PM symptoms.

The prevalence of PMS according to DSM-IV criteria[6] in our study was 16%. A study on 153 secondary school students in Hong Kong indicated a comparable prevalence rate of PMS (19%).[18] Derman et al.[8] observed 61.4% of 10-17 years old adolescent girls to suffer from PMS. Similarly, Silva et al.[19] in a population-based study on 1395 women aged 15-45 years in Brazil found that the prevalence of self reported PMS was 60.3%. Tenkir et al.[20] reported that 27% of a student sample in a university in Ethiopia met DSM diagnostic criteria for PMS. On the other hand, at least two other studies[21,22] reported only 3-8% of their participants met the criteria for PMDD.

The reason for variation in prevalence rates in studies can be attributed to the difference in diagnostic criteria. The rate of PMS being higher than PMDD among any given population, can be because PMS by definition requires only one or more affective or somatic symptoms. Furthermore, higher prevalence rates were found when the number and severity of PM symptoms were less strict and included women who reported several mild or moderate symptoms. Other possible reasons can be the age of participants, cultural and geographical influences, the level of confidentiality in the study and willingness of participant to disclose information about their experiences, awareness of participants about their physical and emotional status in general and prior or during menstruation in particular, and methodological difference.

Compared to the present study, Lajoie and Desindes[3] reported similar results with mood lability, anger, and sadness (88%), having the highest figures in behavioral symptoms and acne (71%), being highest in the physical symptoms.

The most common physical symptoms reported by Tenkir et al[20] in a study on Ethiopian university students gave similar observations. About 14% students frequently missed classes because of PM symptoms, and 14.9% students missed examination or scored a lower grade at least once. Both of these academic issues were significantly associated with severity of PM symptoms.[20] Cleckner-Smith et al.[7] found most commonly reported symptoms were food cravings, breast swelling, abdominal discomfort, mood swings, stressed feeling, and dissatisfaction with appearance.

Expression of PMS can be affected by culture,[15] ethnicity,[23] health status[24] and age.[7] This can cause a bias in the results of various studies. Sternfeld et al.[23] found that Hispanics report greater severity of symptoms than Asians. Raja et al.[24] were of the opinion that the experience of PMS in adolescence can be influenced by perceived health status. In addition, reported symptoms may vary according to the variables included or excluded in the questionnaire.

Finally, earlier studies have not consistently confirmed a strong association between PMS and demographic risk factors. In our study age was the only demographic factor that contributed to severity of PMS. The symptom severity in younger participants (18-20 years old) was significantly higher than that for the other groups (21-24 and 25- 27 years old). This finding is comparable to Clecknedr-Simth et al.[7] who found symptoms to be more intense in the 16-18 years group compared to the 13-15 years age group. There were no differences in severity of symptoms explained by marital status or living situation.

The limitation of the present study is the use of retrospective and self-reported research method. This can provide higher figures for prevalence of PMS.

Conclusions

Prevalence of PM symptoms in a focus group of Iranian students was found to be high but comparable to the results reported from other countries.

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