



Original Article

## Premenstrual syndrome among Teacher Training University students in Iran

Parvaneh Nourjah

Department of Biology Teacher Training University, Tehran, Iran

### Abstract

**Objectives :** To determine prevalence of premenstrual syndrome, premenstrual dysphoric disorder (PMDD), and the impact of PMS on education programming among 320 female students who were living in female housing. **Methods :** A questionnaire was designed for data collection. The criteria proposed by the diagnostic and statistical manual of mental disorders (DSM-IV) were used to diagnose PMS. **Results :** Among 326 nulliparous students, 98.2% of undergraduate students of Teacher Training University who lived in a female housing, experienced symptoms with PMS in most of the last 12 cycles. The prevalence of PMDD was 16.9%. About 25% of participants had fall in education, 50% of participants with PMS took drugs and 57% of participants had a family history of PMS. **Conclusion :** PMS is not rare among the students. The university's authorities should, therefore, take it into consideration and plan for reducing its adverse effects.

**Key words :** premenstrual syndrome, premenstrual dysphoric disorder, university students.

### Introduction

Premenstrual syndrome (PMS) is the name given to a collection of physical, emotional and psychological symptoms that some women experience during the late luteal phase of each menstrual cycle (7 to 14 days prior to menstruation). Symptoms seem to worsen as menstruation approaches and subside at the onset or after several days of menstruation. A symptom-free phase usually occurs following menses. Symptoms of PMS reported in the literature

fall into three domains: emotional, physical, and behavioral <sup>1</sup>. PMS may vary in intensity, but does not resolve spontaneously, and may fade with pregnancy, oral contraceptives, menopause and inhibition of ovulation. Symptoms may also correlate with parity. Premenstrual dysphoric disorder (PMDD) is a severe form of PMS.

The etiology of PMS remains unknown and may be complex and multifactorial. It has been attributed to hormonal changes, neurotransmitters, prostaglandins, diet, drugs and lifestyle. Changes in hormone levels may influence centrally acting neurotransmitters such as serotonin; dietary pattern like use of alcohol and caffeine intake are effective <sup>2</sup>.

Despite the importance of PMS and its adverse effects on the personal and social life of the women, research on PMS in Iran is very limited. To address

*Paper received on 19/12/2006 ; accepted on 28/09/2007*

Correspondence :  
Dr. Parvaneh Nourjah  
Department of Biology Teacher Training University,  
Tehran, Iran  
Tel. (0098) (021) 88848940 Fax : (0098) (021) 88848940  
Email : nourjah@saba.tmu.ac.ir

the impact of PMS on student education, we conducted a survey among the women students.

### Method

This study has been done in 2003 on a group of students living in one of the dormitory of Teacher Training University in Iran. This university is a Governmental university which is located in Tehran's suburb.

All the 360 students who lived in dormitory area were interested in taking part in this study because of living in an out side of city campus. They were from different faculties and academic years. A pretested questionnaire was made for data collection. Questions were taken from the list of symptoms in the diagnostic criteria for PMS and PMDD proposed by the diagnostic and statistical manual of mental disorders(DSM-IV) and the same were used diagnose PMS/PMDD in this study <sup>3</sup>. Questions were about the presence of premenstrual symptoms in the last 12 months. Four months before distribution of questionnaires, the questions and related terms were read and explained to the participants and the meaning of terms that were found difficult by them were discussed to their satisfaction. They were asked to write about changes experienced before their menstruations. Every week the questionnaire was discussed with the participants and they were asked to note carefully the physical and mental changes occurring during their menstrual cycle. The students who responded to the questionnaire were not required to identify themselves. The 34 students who had irregular menses, psychiatric and thyroid problems, or used estrogen and progesterone during the preceding year were excluded from this study.

Responses were checked for completeness, encoded, summarized and analyzed SPSS version 11.0 statistical package, was used to determine significance of associations.

### Results

A total of 326 undergraduate students took part in this study. All of them were single, and did not have any job. Their menstrual cycle ranged between 20 and 33 days and the duration of menstrual bleeding was not more than 9 days. Their body mass index (BMI) was normal. Their age ranged from 18-24 years.

Six of the students (1.8%) did not have any symptom

premenstrual and 320 (98.2%) reported at least one symptoms in many of the menstrual cycles in the last 12 months. 8.8% of 320 participants with PMS, had less than 3 symptoms and 28.8% had more than 40 symptoms.

Out of 320 students, with PMS,54 (16.9%) fulfilled the diagnostic criteria for PMDD. Although, more than 200 symptoms have been claimed as specific or typical of PMS according to a pilot study 58 symptoms which were more abundant among the students were selected. The commonest physical symptom was abdominal cramp 229 (75.3%) and the commonest mental symptom was tiredness 225 (70.3%). The least commons symptom was short of breath 4 (1.3%). The most common symptoms experienced by more than 40% of the participants are shown in Table 1.

**Table 1. The most common symptoms of premenstrual syndrome (n=320)**

Symptom	Number	Percent
Abdominal cramp	229	75.3
Backache	238	74.4
Tiredness	225	70.3
Anger	224	70
Acne	193	60.3
Sadness	184	57.5
Social withdrawal	180	55.6
Breast tenderness	162	50.6
Irritability	150	46.9
Stomach discomfort	144	45
Anxiety	145	45.3
Footache	142	44.4

Although, more than 200 symptoms have been claimed as specific or typical of PMS, according a pilot study 58 symptoms were more common among the students and hence were selected for the study. Six students (1.8%) didn't have any symptoms. So they were omitted from the data analysis.

The remaining 320 students had at least one of the PMS symptoms. These results are higher than those 50-80% previously reported <sup>4,5,6</sup>. The reason for these differences seems to be that this study was done on

the university students and not the general population. Students have generally more stress especially those who live in dormitory because of being away from family. Stress increases the types and severity of symptoms<sup>4</sup>. PMS is more common and severe among high-level educated women than uneducated ones showing a possible relationship between stress and PMS<sup>6,7</sup>. The prevalences of PMS among the students has been reported to be 99.6% in Jimma university in Ethiopia<sup>8</sup>, 85.5% in Calabar University in Nigeria<sup>9</sup> and more than 98% in Assumption University<sup>1</sup>. according to another study carried out on medical students in Tehran in 1999, the prevalence of PMS is 63.7%<sup>10</sup>. This is less than the results of studies mentioned above. Medical students have more knowledge about PMS than other students, so it is expected that PMS in these group of students is less than in those students who don't have enough knowledge about PMS. There are several investigations showing the role of health education programs in reducing PMS among the school girls<sup>11,13</sup>.

Of the students with PMS 28 (8.8%) had less than 3 symptoms and 92 (28.8%) had more than 40 symptoms. The most common symptoms were abdominal cramp 229 (75.3%), backache 238 (74.4%), tiredness 225 (70.3%), anger 24 (70%), acne 193 (60.3%), sadness 184 (57.5%), social withdrawal 180 (55.6%), breast tenderness 162 (50.6%), irritability 150 (46.9%), stomach discomfort 144(45%), anxiety 145 (45.3%), foot ache 142 (44.4%) (Table 1). Similar investigations done on the university students in Iran and other countries show that these symptoms are the most prominent and consistently described<sup>1,8,10</sup>.

In this study, it is shown that nearly 50% of students who had PMS took drugs for decreasing their symptoms, 4% of them occasionally took drugs, and 46% took drugs in every period. Although, most of the Iranian women take herbal drugs for relieving symptoms, none of the participants in this study took herbal drugs because taking pharmaceutical drugs is easier than making herbal drugs in dormitory. In a similar study 37 students with PMS were taking drugs for physical and mental symptoms<sup>8</sup>.

In our study 80 (25%) of participants missed the classes and examinations leading to decline in education. Decline in education due to PMS is a loss for government, since the Teacher Training University is a governmental university. It is

predictable that these students suffering from PMS, after graduating and getting a job, would be periodically absent at work and have reduced productivity<sup>14</sup>. Several researches have shown that PMS can have both direct and indirect economic consequences.

In our study 57% of students had history of PMS in their family while 26% did not know if there was a history of PMS in their family. It seems that among other factors, genetic factor is of importance although no special gene has yet been identified though studies on twins suggest the presence of a genetic component<sup>4,15</sup>.

PMDD, is a severe form of PMS. Of the 320 participants 54 (16.9%) fulfilled the diagnostic criteria for PMDD according to DSM-IV. This incidence is high compared to 2-10% reported in different women populations<sup>5,6</sup>. But it is less than that reported in the studies done among the university students in Ethiopia (27%) and Nigeria (36%)<sup>9</sup>.

## **Conclusion**

There is a high prevalence PMS in the students of Teacher Training University. This disturbs their educational progression. There is need for further research on non-university and minority populations aimed at understanding symptoms of PMS and its effect on different populations within country.

## *Acknowledgement*

I thank the research deputy in the Teacher Training University for financial support and Dr. Nahid Nourjah for her technical advice.

## **References**

1. Myint T, Edessa Ore-Giron D Sawhsarka P, Premenstrual syndrome among female university students in Thailand, 2006;AU J.T 9:158-62.
2. Thys-acobs S., Micronutrients and the Premenstrual syndrome. The Case for Calcium, J Am Coll Nutrition, 2000; 220-7.
3. American Psychiatric Association. Diagnostic and statistical manual of mental disorders, 4<sup>th</sup> edn. Washington, DC, American Psychiatric Association, 1994;715-8.
4. Steiner M, Born L, Diagnosis and treatment of premenstrual dysphoric disorder" an update. Int Clin Psychopharmacol 2000;15 (suppl 3) : S5-S17.

5. Dickerson LM, Mazyck J, Hunter MH. Premenstrual Syndrome *Am Fam Physician* 2003;67:1743-52.
6. Rapkin AJ, Mikacich JA, Motakef-Imani B. Reproductive mood disorders *Primar Psychiatry* 2003;10:31-40.
7. Marvan ML, Pemenstrual symptoms in Mexican women with different educational levels. *J Psychol* 1998;132:517-26.
8. Tenkir A, Fisseha N Ayele B. Premenstrual syndrome: Prevalence and effect on academic and social performances of students in Jimma University, Ethiopia. *J Health Dev* 2002;17:181-8.
9. Antar AB, Udezi AW Ekanem EE et al. Premenstrual Syndrome : Prevalance in students of the University of Calabar, Nigeria, *Afr J Biomedical Res* 2004;7:745-50.
10. Taleb JM. The study of prevalence of premenstrual syndrome among the medical students 2000. Unpublished MD thesis, Tehran University of Medical Science.
11. Chau Janita PC, Chang ANN M. Effects of an educational programme on adolescents with premenstrual syndrome, *Health Educatoin Research*, 1999;14:817-30.
12. Singh H, Walia R, Gorea RK et al. Pemenstrual syndrome (PMS) the Malady and the Law, *JIAFM*, 2004;26:71-3.
13. Borenstein JE, Dean BB, Endicott J Health and economic impact of the premenstrual syndrome, *J Report Med.* 2003;48:515-24.
14. Mishell DR. Premenstrual disorders: epidemiology and disease burden. *Am J Managed Care* 2005;11(suppl):5473-9.
15. Bhatia SC, Bhatia SK. Diagnosis and treatment of premenstrual dysphoric disorder, *Am Family Physician* 2002;66:31-6.