



# Prevalence of psychological and physical symptoms of pre-menstrual syndrome in female students

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**Key words:** Lethargy, pre-menstrual syndrome, prevalence, physical symptom, psychological symptom

## ABSTRACT

Pre-menstrual syndrome is a group of physical and psychological symptoms that appears before the menstrual bleeding. The study was designed to evaluate the prevalence of physical and psychological symptoms of pre-menstrual syndrome among female students of technical institution in Gorakhpur. Two hundred students aged between 15 to 30 years participated in the study and revealed that all the participants of study experienced at least 1 symptom of PMS. The most common physical symptom was joint/muscle pain (77.5%). Lethargy (83%) was reported as most common psychological symptom in the study. The study concluded that prevalence of PMS is 100%, and most of the participants (42.5%) have more than 5 symptoms of PMS.

## INTRODUCTION

Menstruation is a physiological phenomenon occurring among females from the age of menarche until menopause. Pubertal events are important for adolescents with the most characteristic event of puberty in girls being menarche (beginning of menstrual cycles). The mean age of menarche in Indian girls is  $12.5 \pm 1.52$  years, with a range of 10-15 years.<sup>[1]</sup> The most common problems in menstruation are dysmenorrhea, pre-menstrual syndrome, menorrhagia, and irregular cycles.

The pre-menstrual syndrome (PMS) was first described in 1931 by Frank and Horney, who speculated on the possible physiopathological origins of the condition and on some forms of treatment.<sup>[2]</sup> The World Health Organization's (WHO) International Classification of Disease, 10<sup>th</sup> edition includes pre-menstrual tension syndrome in its section of gynecologic disorders, as a disorder of the female genital organs.<sup>[3]</sup>

Pre-menstrual syndrome (PMS) is a collection of physical, psychological, and emotional symptoms occurring during the luteal phase of the menstrual cycle, followed by resolution within a few days after the onset of bleeding.<sup>[4]</sup>

Over 150 symptoms have been attributed to PMS. Common symptoms include breast tenderness, headache, backache, lack of energy, clumsiness, tension, anxiety, irritability, depression, food cravings, bloating, and changes in sexual drive [Table 1]. Although surveys have suggested that over 80% of women report pre-menstrual symptoms, when strict diagnostic criteria are applied, the prevalence of severe PMS is estimated to be about 2-6% in women of reproductive age.<sup>[5]</sup>

So far, there have been no studies of prevalence of PMS in Gorakhpur. The objective of the present study, therefore, was to assess the prevalence of PMS in female students of technical institution situated in Gorakhpur.

## MATERIALS AND METHODS

### Source of data

Female student studying in technical institution situated in Gorakhpur.

### Study period

1 month (Feb 2012-March 2012).

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|  | DOI:<br>10.4103/2045-080X.111582                                     |

## Study design

Cross-sectional Study.

## Inclusion criteria

Students who were willing to participate in the study.

## Data collection

A questionnaire was developed with the help of existing literature of PMS. The questionnaire elicited information regarding socio-demographic profile as well as details of PMS. The symptoms included were anger, irritability, tension, depression, abdominal pain, backache, insomnia.

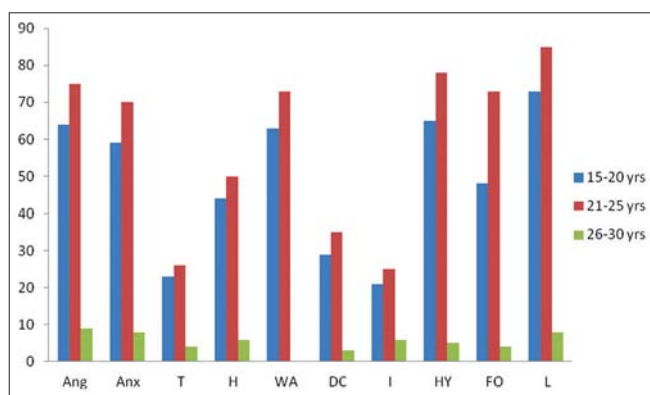
## Data analysis

Data obtained from the study was compiled and analyzed. Graphs were plotted using Excel 2007.

**Table 1: ACOG diagnostic criteria for PMS<sup>a</sup>**

|   |                         |
|---|-------------------------|
| • Patient reports one or more of the following affective and somatic symptoms during the 5 days before menses in each of 3 prior menstrual cycles |                         |
| <i>Affective</i>  | <i>Somatic</i>          |
| Depression  | Breast tenderness       |
| Angry outbursts   | Abdominal bloating      |
| Irritability  | Headache                |
| Anxiety   | Swelling of extremities |
| Confusion   |                         |
| Social withdrawal   |                         |
| • Symptoms relieved within 4 days of menses onset without recurrence until at least cycle day 13  |                         |
| • Symptoms present in absence of any pharmacologic therapy, hormone ingestion, or drug or alcohol abuse   |                         |
| • Symptoms occur reproducibly during 2 cycles of prospective recording  |                         |
| • Patient suffers from identifiable dysfunction in social or economic performance   |                         |

<sup>a</sup>Adapted from the American College of Obstetricians and Gynecologists (ACOG) Practice Bulletin 2000;15:1-9



**Figure 1:** Prevalence of psychological symptoms of PMS in different age group. [Ang = Anger/Irritability, Anx = Anxiety, T = Tearfulness/Depressed Mood, H = Hopelessness, WA = Decreased interest in work activity, DC = Difficulty in concentrating, I = Insomnia, HY = Hypersomnia, FO = Feeling overwhelmed/Out of control, L = Lethargy]

## RESULTS

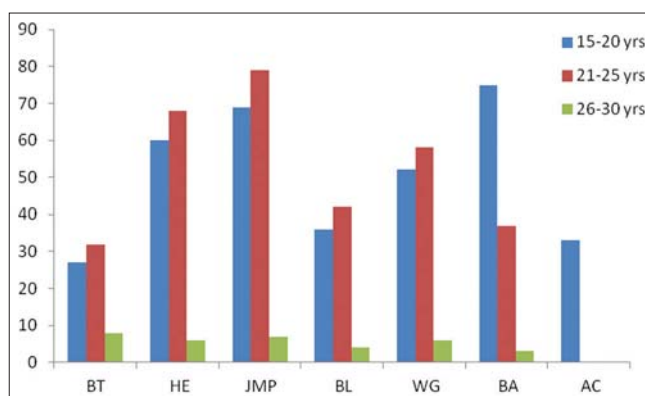
Two hundred girls were participated in the study, in which 103 (51.5%) girls were from 21-25 yr age group, 87 (43.5%) girls from 15-20 yr age group, and 10 (5%) girls from 26-30 yr age group. The most common psychological symptoms were lethargy (83%), anger and hypersomnia (74%), decreased in-home activity (71.5%), anxiety (68.5%), decreased in-work activity (68%), feeling overwhelmed (62.5%), hopelessness (50%), difficulty in concentrating (33.5%), tearfulness (26.5%), and insomnia (26%) [Figure 1].

The most common physical symptoms were joint\ muscle pain (77.5%) followed by headache (67%), weight gain (58%), backache (57.5%), bloating (41%), breast tenderness (31%), and acne (16.5%) [Figure 2].

Result of study showed that all the participants of the study have at least one pre-menstrual symptom. Result showed that 18% girls were having 1-3 symptoms, 39.5% girls having 3-5 symptoms, and 42.5% girls having more than 5 symptoms.

## DISCUSSION

Many women experience physical or mood symptoms associated with the menstrual cycle.<sup>[6]</sup> Pre-menstrual syndrome (PMS) is a generic term, which includes a broad group of emotional, behavioral, and physical symptoms that occur for several days to weeks before menses and subside following the menstrual period.<sup>[7]</sup> The etiology of the syndrome is controversial and has been extensively reviewed.<sup>[8,9]</sup> These include a combination of low zinc and copper retention,<sup>[10]</sup> abnormal serotonin function,<sup>[11]</sup> deficiency of progesterone, some neurotransmitters, nutrients such as vitamin E, B vitamins, calcium, linolenic acid, magnesium manganese etc.<sup>[8,12]</sup>



**Figure 2:** Prevalence of physical symptoms of PMS in different age group. [BT = Breast tenderness, HE = Headache, JMP = Joint/muscles pain, BL = Bloating, WG = Weight gain, BA = Backache, AC = Acne]

The present study conducted on female students reported that 100% participants have at least one pre-menstrual symptom. Similar result was shown in the study performed by Clecker Smith *et al.*<sup>[13]</sup> They reported that all the participants had at least one pre-menstrual symptom. Thus found more than 98% of their respondents suffered from one or more pre-menstrual symptom.<sup>[14]</sup>

In our study, lethargy (83%) was the most common psychological symptom. Similar result was shown in the study done by Nour Mohammad Bakhshani *et al.*<sup>[15]</sup>

The most common physical symptom was joint\ muscle pain (77.5%) in our study while Nour Mohammad Bakhshani *et al.* reported backache is most common physical symptom. This difference may be due to different cultural and socio-demographic variables. Grant stated that individuals in low social ladder may not cope with the stress of the increasingly more challenging environment that may negatively impact physical and psychological well-being.<sup>[16]</sup>

In conclusion, the study reports a prevalence of PMS of 100% in female undergraduate and post-graduate students of technical institution in Gorakhpur. Lethargy was the most frequently psychological symptom while joint\ muscle pain was most common physical symptom.

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**How to cite this article:** Pandey AK, Tripathi P, Goswami S, Pandey RD. Prevalence of psychological and physical symptoms of pre-menstrual syndrome in female students. *Arch Pharma Pract* 2013;4:47-9.

**Source of Support:** Nil. **Conflict of Interest:** None declared.

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