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## Study of prevalence of PMS in female nursing students of a college in Telangana

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### Abstract

**Introduction and Background:** The second half of a woman's menstrual cycle is associated with a collection of psychosomatic symptoms known together as premenstrual syndrome (PMS). It has an impact on day-to-day activities for a significant proportion of women of reproductive age who are affected by its symptoms.

**Aim and Objectives:** To determine how common premenstrual syndrome (PMS) is among nursing students. In order to evaluate the effects that PMS has on day-to-day life.

**Methods:** Within the context of this cross-sectional study, one hundred nursing students were given self-reported questionnaires to complete in order to collect socio-demographic information and their perspectives on PMS using an intake proforma. A premenstrual syndrome scale was given to the respondent in order to evaluate the severity of PMS as well as its presence.

**Results:** It was shown that 99% of women experience PMS, albeit to various degrees of intensity. In around 62% of cases, premenstrual syndrome was associated with impairment of activities before menstruation. The ages of participants in the study ranged from 18 to 25 years, with a mean age of 20.3 years. 13.36 was the average age at which girls reached puberty. The rural population made up 48% of the total, while the urban population made up 52%. The majority, or 68%, came from the MSES, while 26% came from the LSES, and only 6% came from the USES.

**Conclusion:** According to the findings of our study, PMS is much more common among nursing students and has a partial impact on their daily activities. To lessen PMS and enhance quality of life, we suggested dietary and lifestyle changes. They have received education regarding the signs and early detection of PMDD should PMS persist for an extended period of time.

**Keywords:** Hypertensive disorders of pregnancy, premenstrual syndrome, premenstrual dysphoric disorder, menstruation, nursing student

### Introduction

Premenstrual syndrome (PMS) is a psychotic neuroendocrine disorder with biological, psychological, and social parameters that begin a few days before menstruation and last for a few days after. This was first described by Frank and Horney in 1931 <sup>[1]</sup>. Premenstrual syndrome (PMS) is a combination of physical, emotional, psychological, and mood changes that occur after a woman's ovulation or it is defined as the recurrence of psychological and physical symptoms in the luteal phase, which remit in the follicular phase of the menstrual cycle. <sup>[2, 3, 4]</sup>. Premenstrual dysphoric disorder (PMDD) is a severe form of PMS and recurs for at least two menstrual cycles. PMDD has been included as a psychiatric disorder in the Fifth Edition of the Diagnostic and Statistical Manual for Mental Disorders (DSM-5). Premenstrual dysphoric disorder (PMDD) is characterized by a constellation of affective and somatic symptoms manifested during late luteal phase and resolve shortly after the onset of menses <sup>[5]</sup>. Causes of PMS remain an enigma but it has been attributed to altered sensitivity of the neuroendocrine and neurosteroids to fluctuations in the levels of hormones in the menstrual cycle <sup>[6]</sup>. Hypotheses about the cause of PMS have been proposed including increased estrogen levels, reduced progesterone levels, changes in estrogen-progesterone ratio, increased aldosterone activity, increased renin-angiotensin activity, impaired secretion of internal opioids, hypoglycemia without causes, opioid deficiencies, Vitamins B6, B1, and A or minerals such as magnesium and calcium, excessive prolactin secretion, and prostaglandin disorders <sup>[7, 8]</sup>. Previous Indian studies have found a 20% prevalence of PMS in the general population and among those with PMS 8% had severe symptoms <sup>[9, 10]</sup>.

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The most common mood alterations are depression, irritability, oversensitivity, crying, and mood swings. The most common physical signs and symptoms are mastalgia, acne, fatigue, bloating, and appetite changes with food cravings <sup>[11]</sup>. The reported prevalence estimates of PMS in India have ranged from 14.3% <sup>[12]</sup> to 74.4% <sup>[13]</sup>. Factors that influence prevalence estimates include diagnostic criteria or tools used as well as sociodemographic and sub-cultural differences within a diverse country such as India that impact expressivity of symptoms. Patients with PMS have reported as many as 300 different PMS symptoms. Majority of women, i.e., 63.1-96%, suffer from at least one premenstrual symptom <sup>[14, 15]</sup>. The prevalence of PMS ranges from 5.3 to 31%, and that of PMDD ranges from 1.2 to 8.3% in females of reproductive age group <sup>[16, 17, 18]</sup>. Approximately 90% of women experience some PMS symptoms at some point in their lifetime. It is estimated that clinically significant PMS occurs in 20% to 30% of women. A study conducted to assess the prevalence of PMS and associated symptoms in 153 adolescent girls between 10-17 years in Hong Kong, found that about 61.4% of the girls are suffering from PMS with a greater severity <sup>[19]</sup>.

In a study by Jessy Varghese *et al.*, it was found that 60% of the subjects had mild PMS, moderate PMS in 34% and severe in 5%. Anxiety and mood swings were reported in 80% of the subjects and the predominant physical symptoms were bloating and abdominal cramps <sup>[20]</sup>. In a study by Tibin *et al.*, it was found that 75% reported mild PMS, 15% had moderate PMS and 10% had no symptoms. Fatigue, backache and irritability were the most commonly reported symptoms <sup>[19]</sup>. Symptoms in adolescents may negatively affect their academic performance and their social interactions. Studies have also shown that adolescents with PMS are in poor health <sup>[21]</sup>. The morbidity associated with PMS is because of severity of symptoms, chronicity, the resulting emotional distress or impairment in work, relationships, and activities. The level of impairment of PMS is significantly higher than community norms on assessment by standard measures and similar to that of major depression. Women with PMS report significant impairment in personal relationships, compromised work levels and increased absence from work, school, or college

<sup>[22]</sup>. Considering PMS a relatively under investigated area, we considered doing this study. Owing to the more or less taboo nature of menstruation in conservative societies as in India, coupled with the traditional gender role subscribed to by females, awareness regarding premenstrual disorders and/or help-seeking behaviour for these disorders has been sub-optimal. Given the treatability of these conditions, proper health policy formulation and implementation to address premenstrual disorders can go a long way in reducing the treatment gap.

### Materials and methods

This is a cross-sectional study conducted among third year female nursing students of a government college in Institute of Mental Health, Hyderabad, Telangana.

Sample size -100.

### Inclusion criteria

Students between 18-25 years.

### Exclusion criteria

Students with medical illness and already diagnosed psychiatric illness. Consent was obtained from all the participants in English which is a language understandable to all. Confidentiality was maintained. Data was collected using a semi structured intake proforma and Premenstrual Syndrome Scale. Data obtained was analysed using SPSS software 28.0 using descriptive analysis.

### Results

Sociodemographic details are shown in table 1 the study sample has age between 18-25 years and the mean age is 20.3 years. The mean age at menarche was 13.36 years. 48% belonged to rural domicile and 52% hailed from urban domicile. Majority (68%) belonged to MSES, 26% from LSES and 6% USES. around 97% are unmarried and only 3% are married. Majority of the study population reside in hostel (74%) and 26% are day scholars. 98% had no use of substance, 1% had Alcohol use and 1% had other. 70% of the sample did not feel its dirty or shameful to talk about PMS and could share their difficulty with others. 30% felt it was dirty to talk about PMS (Figure1).

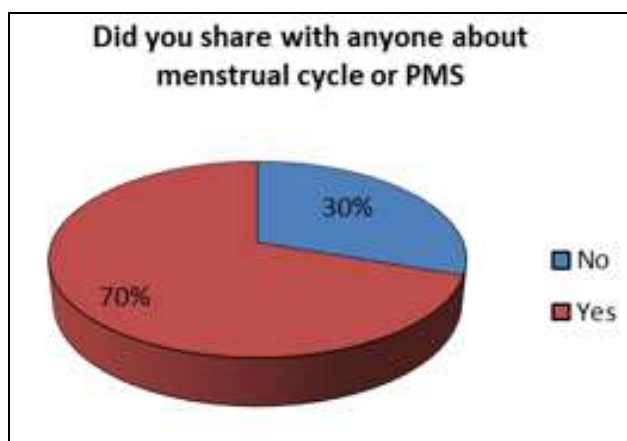


Fig 1. Attitude towards PMS

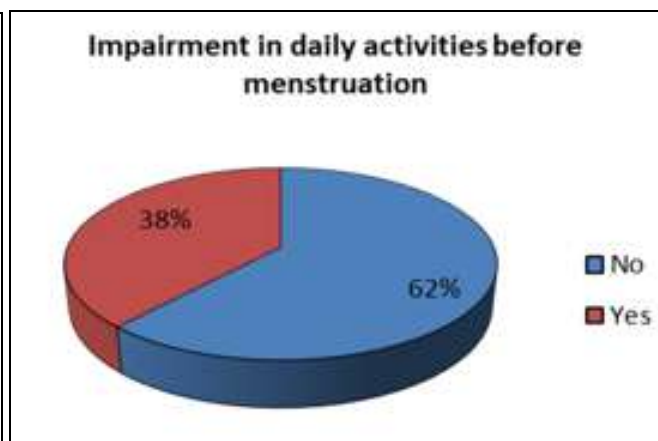
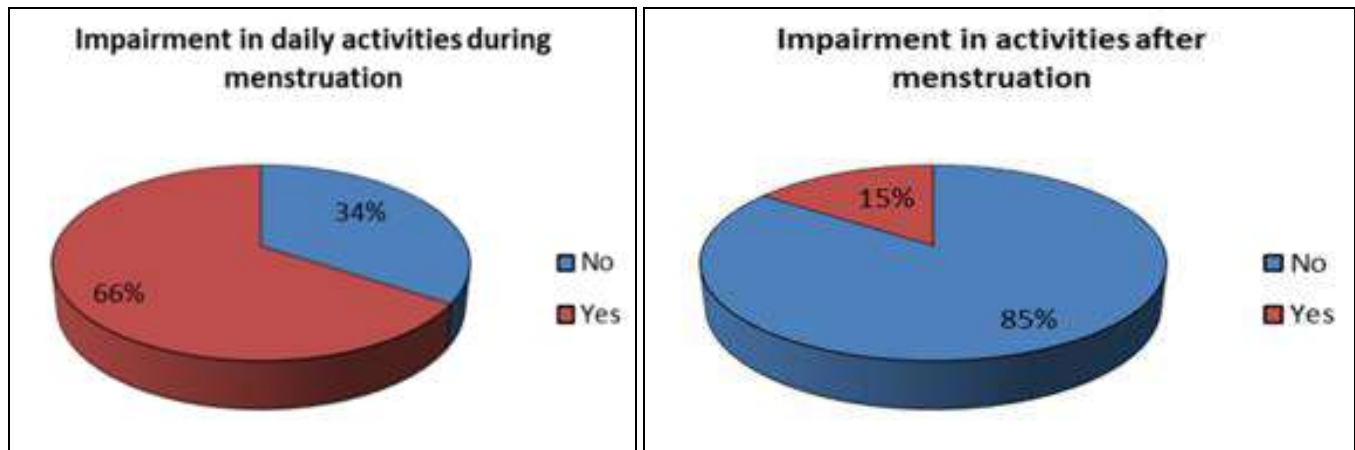


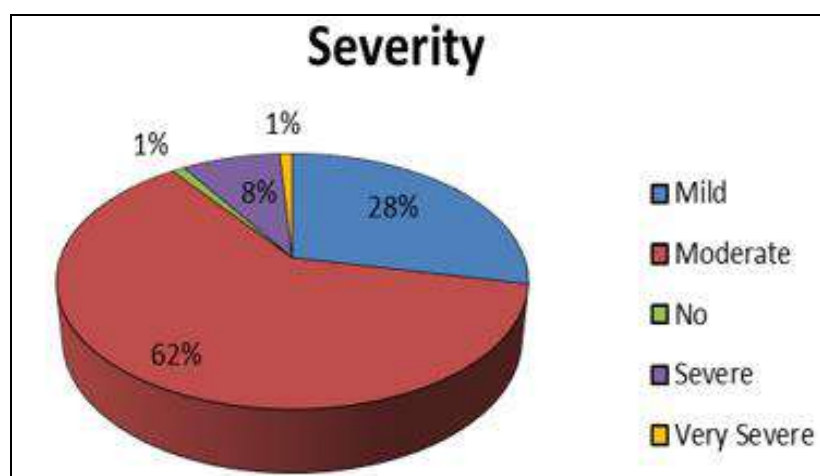
Fig 2(a). Impairment of daily activities

**Fig 2 (b and c):** Impairment of daily activities**Table 1:** Sociodemographic data

|                      |             |    |      |
|----------------------|-------------|----|------|
| Domicile             | Rural       | 48 | 48   |
|                      | Urban       | 52 | 52   |
| Socioeconomic Status | LSES        | 26 | 26   |
|                      | MSES        | 68 | 68   |
|                      | USES        | 6  | 6    |
| Married              | No          | 97 | 97.0 |
|                      | yes         | 3  | 3.0  |
| Residence            | Day scholar | 26 | 26   |
|                      | Hosteller   | 74 | 74   |
| Substance Abuse      | Alcohol     | 1  | 1.0  |
|                      | none        | 98 | 98.0 |
|                      | others      | 1  | 1.0  |

During this study, it was reported that 62% had no impairment in daily activities due to PMS and 38% had impairment before menstruation. During menstruation, it was reported that 85% had impairment of daily activities

and 15% had no impairment. 85% of sample had no impairment in activities after menstruation and 15% had impairment in daily activities (figure 2).

**Fig 3:** Showing prevalence of PMS of varying severity

99% of the study sample had symptoms of PMS of varying degree or severity. Most of them had moderate (62%), 8% had mild symptoms, 8% had severe symptoms and 1% had

very severe PMS. Mean score was 93.8 indicating moderate PMS without affecting daily activities (Fig 3 & table 3).

**Table 3:** Prevalence of PMS of varying severity

|                 |             |    |    |
|-----------------|-------------|----|----|
| <b>Severity</b> | Mild        | 28 | 28 |
|                 | Moderate    | 62 | 62 |
|                 | No          | 1  | 1  |
|                 | Severe      | 8  | 8  |
|                 | Very Severe | 1  | 1  |

## Discussion

The present study sample is female nursing students whose mean age was 20.3 years. This is similar to results in other studies. The mean age in a study by Dorai *et al.* 2019<sup>[26]</sup> was 19.3 years. In a study conducted by Raval *et al.*, 2016<sup>[25]</sup> mean age was found to be 18.6 years. The study population also matched other domains like domicile where majority live in urban areas and are unmarried, has education upto graduation and majority had no substance use. The present study conducted showed that 99% of the sample had symptoms of premenstrual syndrome of varying severity. In a study by Tibin Joseph *et al.*, it was seen that 100% had symptoms of PMS which was similar to our study findings<sup>[27]</sup>. The prevalence in a study conducted by Bhuvanawari *et al.* 2019<sup>[28]</sup> was 62.7%. It was 78.5% in a study done at Al Qasim University in medical students<sup>[29]</sup>. In a study by Nusrat *et al.*, 61% had PMS of which 60% had mild symptoms, 30% had moderate PMS and 10% had severe PMS<sup>[30]</sup>. It was 53.7% in a study by Tabassum *et al.* 42% had mild symptoms, 18% moderate and 32% had severe symptoms in that study<sup>[31]</sup>. In a study by Bakshani *et al.*, it was found that 98% of study sample has PMS which was similar to our study findings<sup>[32]</sup>. Chang *et al.*<sup>[33]</sup> in their study on Chinese women found that 92% of their sample reported symptoms of PMS. Silva *et al.* 2006<sup>[34]</sup> reported a prevalence of 60.3% in young women in Brazil. The variation in prevalence rates can be due to difference in diagnostic criteria, ethnicity, culture, health status. This can cause bias in results. Raja *et al.* were of the opinion that the experience of PMS in adolescence can be influenced by perceived health status. Sternfeld *et al.*<sup>[35]</sup> found that Hispanics report greater severity of symptoms than Asians. In this study, we also found that there is partial impairment in day to day activities before, during and after menstruation with 38%, 66% and 15% respectively. This is similar to the study conducted in Al Qassim University among medical students, which also showed an association of PMS with physical problems, vitality, mental health and body pain, indicating decreased quality of life. A French population study shows 72% fluctuation in PMS status among women having PMS<sup>[7]</sup> which could support the theory of high intra-individual and inter-individual variation of PMS symptoms and their severity. This study demonstrated that PMS is a chronic intermittent disabling condition which often disrupts normal functioning and causes a negative impact, rather a burden in daily lives<sup>[5, 7]</sup>.

## Conclusion

According to the findings of our research, the prevalence of

PMS was notably high among nursing students who had some degree of impairment in their regular activities. We suggested making changes to one's diet as well as one's overall lifestyle in order to lessen the symptoms of PMS and improve one's overall quality of life. They have been informed of the symptoms and ways to identify them early in the event that their PMS becomes more severe and develops into PMDD.

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