

Assessment of Premenstrual Syndrome and Premenstrual Dysphoric Disorder among College Students of SJM Constituent Institutions at Chitradurga

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ABSTRACT

Premenstrual syndrome (PMS) is the term used to describe a group of emotional, psychological, and physical symptoms that some women experience during the late luteal phase of each menstrual cycle (7 to 14 days prior to menstruation). Premenstrual dysphoric disorder (PMDD), is a severe form of PMS. The objective of the study is to assess the prevalence of Premenstrual syndrome and Premenstrual dysphoric disorder among college students provide counselling for affected subjects and redirect PMDD subjects to a gynaecologist for therapy, also provide awareness and to determine the most commonly occurring symptoms of Premenstrual syndrome and Premenstrual dysphoric disorder. A six-month prospective observational study was conducted in selected colleges of SJM Institutes in Chitradurga, Karnataka. (Pharmacy, Engineering, and Nursing Colleges). A total of 300 participants have been included in the study, aged between 18 to 25 years to assess the prevalence of PMS and PMDD with the help of the American College of Obstetricians and Gynaecologists (ACOG) criteria and the Diagnostic and statistical manual of Mental Disorders 5th Edition (DSM-V). The frequency and percentage were obtained using descriptive approaches. A total of 300 participants have been included in the study. The most commonly occurring symptoms seen in Premenstrual syndrome were irritability, anxiety/tension, anger outbursts, headache, and depressed mood/hopelessness whereas in Premenstrual dysphoric disorder was feeling overtired and decreased interest in usual activities. Prevalence of Premenstrual syndrome was 63.66% and Premenstrual dysphoric disorder was 20%. 28% of students reported that they had disturbances due to Premenstrual syndrome and Premenstrual dysphoric disorder in their daily work routine which was difficult to concentrate in class due to

severe abdominal pain and irritability, students were not able to do their daily work due to lack of energy and tiredness which caused absenteeism of students in class. After going through counselling, we could find that 84% rated excellent. The study showed a high prevalence of Premenstrual syndrome and Premenstrual dysphoric disorder among students. The most reported symptoms of Premenstrual syndrome were irritability, anxiety/tension, and anger outbursts whereas Premenstrual dysphoric disorder was overtired and decreased interest in usual activities. Counselling was given to the affected students and 84% of students rated it as excellent.

Keywords: PMS, PMDD, Prevalence, Intervention, ACOG.

I. INTRODUCTION

According to the World Health Organization, females are more likely to experience grief, loss of confidence, low self-esteem, and lack of vitality. In India, one fourth that is 27.7% of the female population is between the ages of 15 - 29. This age is a transitional stage of life marked by a burst of physical, mental, emotional, and social development.¹

Premenstrual Syndrome: Premenstrual syndrome (PMS) is the term used to describe a group of emotional, psychological, and physical symptoms that some women experience during the late luteal phase of each menstrual cycle (7 to 14 days prior to menstruation).² Premenstrual syndrome (PMS) is one of the most common disorders of reproductive age that can be seen in different grades in 80-90% of women. More than 200 symptoms have been known to occur, the most commonly occurring symptoms are abdominal bloating, backache, fatigue, anxiety, breast tenderness, irritability, social withdrawal, and depression.³

The severity of the symptoms, their recurrence, and the emotional anguish they produce

or the impairment in one's ability to work, maintain relationships, and engage in daily activities are all factors associated with the morbidity of PMS. Women with PMS report significant impairment in personal relationships, compromised work levels, and increased absence from work, school, or college.¹ It is unclear what specifically causes PMDD. It can be an unusual response to the typical hormone fluctuations that can happen with each menstrual cycle. Serotonin deficiency may result from these hormonal changes. Serotonin is a hormone produced in the brain⁴ and 95% of the body's serotonin is produced in the intestines⁵ constricting blood vessels can influence mood, and develop physical symptoms.⁴

Up to 75% of women with normal menstrual cycles experience PMS, and PMDD affects only 3% to 8% of women.⁵ American College of Obstetricians and Gynecologists (ACOG) and DSM-V criteria are used as a diagnostic tool for PMS and PMDD.⁶

In India, reports of the prevalence of PMDD have ranged significantly from 3.7% to 65.7%.⁷ Similarly, the reported prevalence of PMDD in India has varied widely between 3.7% to 65.7%.⁷

Lifestyle modifications can be done to treat mild to moderate symptoms. Severe symptoms require more aggressive treatment such as pharmacological interventions along with non-pharmacological treatments.⁹

Premenstrual Dysphoric Disorder: Premenstrual dysphoric disorder (PMDD), is a severe form of menstrual-related mood disorder (MRMD), it affects 5-8% of women of reproductive age.¹⁰ The leading attempt to develop diagnostic criteria for premenstrual syndromes is premenstrual dysphoric disorder (PMDD) in the 4th edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV).¹¹

The diagnosis was done using the American College of Obstetricians and Gynecologists (ACOG) criteria for premenstrual syndrome and the Diagnostic and statistical manual of Mental Disorders 5th Edition (DSM-V) for premenstrual dysphoric disorder and was evaluated by a gynecologist.¹²

Treatment: Premenstrual disorders can be complex and long-lasting in character.¹³ The treatment goals for patients with Premenstrual disorders are to relieve symptoms and improve functional

impairment. Women with PMS or PMDD can find relief through a variety of methods, including lifestyle changes (such as exercise and relaxation techniques), cognitive behavioural therapy, and drugs such as combined oral oestrogen-progestin contraceptives (COCs) and selective serotonin reuptake inhibitors (SSRIs).¹⁴ Patients must get care with both nonpharmacologic and pharmacologic treatments to lessen the illness burdens of PMDDs. With this background, the present study aims to evaluate the knowledge, and most commonly reported symptoms, and provide counselling for those who are suffering from premenstrual syndrome and premenstrual dysphoric disorder. PMDD being the severe form of PMS, we asked the students to consult a gynecologist. We also assessed the prevalence of premenstrual syndrome and premenstrual dysphoric disorder among college students and provided awareness.

II. MATERIALS AND METHODOLOGY

STUDY DESIGN: This is a prospective observational study.

STUDY SUBJECT: College students in Chitradurga who meet the following criteria.

Inclusion criteria:

- Students from selected colleges of SJM constituent institutions (Pharmacy, Engineering, and Nursing Colleges).
- Both UG and PG students of age group 18-25 years.
- Students who signed the informed consent form.

Exclusion Criteria:

- Married.
- Previous clinically diagnosed Psychiatry cases.
- Congenital uterus disease.
- Thyroid disease

STUDY SITE: Selected colleges of SJM Institutes in Chitradurga, Karnataka. (Pharmacy, Engineering, and Nursing Colleges).

STUDY DURATION: The study was conducted over a period of six months.

ETHICAL APPROVAL: The study received ethical approval from the Institutional Ethics Committee of SJM College of Pharmacy, Chitradurga.

Ref: No.: SJMCP/621/2022-23

SOURCE OF DATA: Selected students from different colleges of SJM constituent Institute.

STUDY INSTRUMENT:

A questionnaire was developed using the American College of Obstetricians and Gynecologists (ACOG) criteria for premenstrual syndrome and the Diagnostic and statistical manual of Mental Disorders 5th Edition (DSM-V) for premenstrual dysphoric disorder and was evaluated by a gynecologist. The questionnaire was piloted as a document among 20 participants to check clarity and the suitability of wording as well as the time required for its completion.

The questionnaire consists of a total 4 parts:

- The first part comprises Demographic details.
- The second part is to assess the medical knowledge of students.
- The third part is a questionnaire regarding premenstrual syndrome which consists of 11 questions and premenstrual dysphoric disorder which has four sections (A, B, C, and D) where A and B consist of 11 questions.
- The fourth part is regarding the rating of the counseling session given to affected subjects.

SAMPLE SIZE: A total of 300 students from pharmacy, nursing, and engineering colleges who satisfied the study criteria and consented to participate in this study were included in this study.

STATISTICAL ANALYSIS: In the current study, descriptive statistical analysis has been done. Data are presented as mean ± standard deviation (SD) and as frequency distribution. Statistical software: The statistical analysis was performed using the IBM SPSS Data Analysis Version 26.0 for Windows (Armonk, NY: IBM Corp) and GraphPad Prism 9.4 (La Jolla, CA, USA) has been used to generate graphs and Microsoft Excel for tables.

III. RESULTS

A total of 312 responses were recorded and 300 were included in the study and were analyzed for PMS and PMDD. The questionnaire was designed to assess the prevalence and most commonly occurring symptoms of PMS and PMDD. Therefore, the following are study results that are according to the objectives of the study.

3.1 EPIDEMIOLOGIC PROFILE

3.1. a Age Distribution:

The participants who enrolled in the study were in the age group of 18 to 25 years. The mean age of the study participants was 20.6 and the standard deviation was 1.4. The distribution of participants according to their age groups is shown in **Fig. 1**. The mean age of the study population is 20.6 ± 1.4 years.

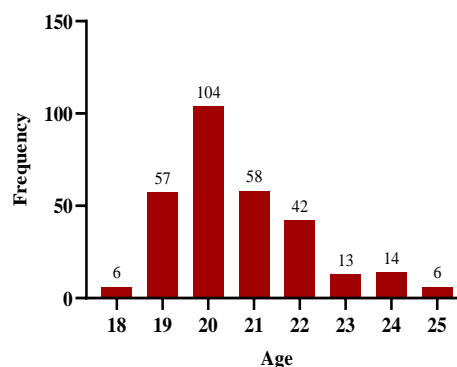


Fig.1: Age Distribution

3.1. b Course-wise distribution:

Out of 300 participants more participants are from Pharmacy college 140(46.7%), the remaining are from Engineering 90(30%), and Nursing 70(23.3). **Table 1** shows the course-wise distribution.

Table 1: Course distribution of participants

Course	Number of participants	Percentage (%)
Pharmacy	140	46.7
Engineering	90	30
Nursing	70	23.3
Total	300	100

3.2 MEDICAL KNOWLEDGE

3.2 a Medical Knowledge Assessment

Among 300 participants more than half of the participants had medical knowledge regarding PMS and PMDD 161(53.7%), remaining

139(46.3%) were not aware. **Fig. 2** shows the knowledge assessment of participants.

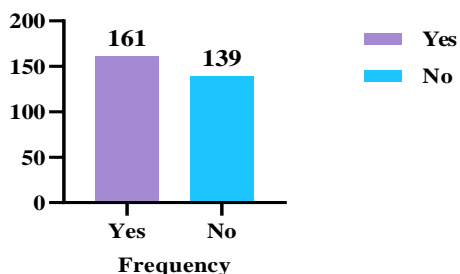


Fig. 2: Medical knowledge

3.2. b Course-wise medical knowledge:

When we assessed the knowledge of participants, out of 300 students who participated, 161 students had medical knowledge regarding PMS and PMDD and 139 were not aware of the condition, when course-wise distribution was done, students studying pharmacy had more knowledge than is (83 students) when compared to engineering students (28 students) and nursing students (28 students). Which is shown in **Table 2**.

Table 2: Course-wise medical Knowledge of participants

Course	Medical Knowledge		Total
	No	Yes	
Pharmacy	57	83	140
Engineering	62	28	90
Nursing	42	28	70
TOTAL	161	139	300

3.3 PMS

3.3. Most commonly occurring symptoms in PMS

The most common affective and somatic symptoms among participants were irritability,

anxiety/tension, anger outbursts, headache, and depressed mood/ hopelessness. **Fig. 3** shows the most common symptoms of premenstrual syndrome.

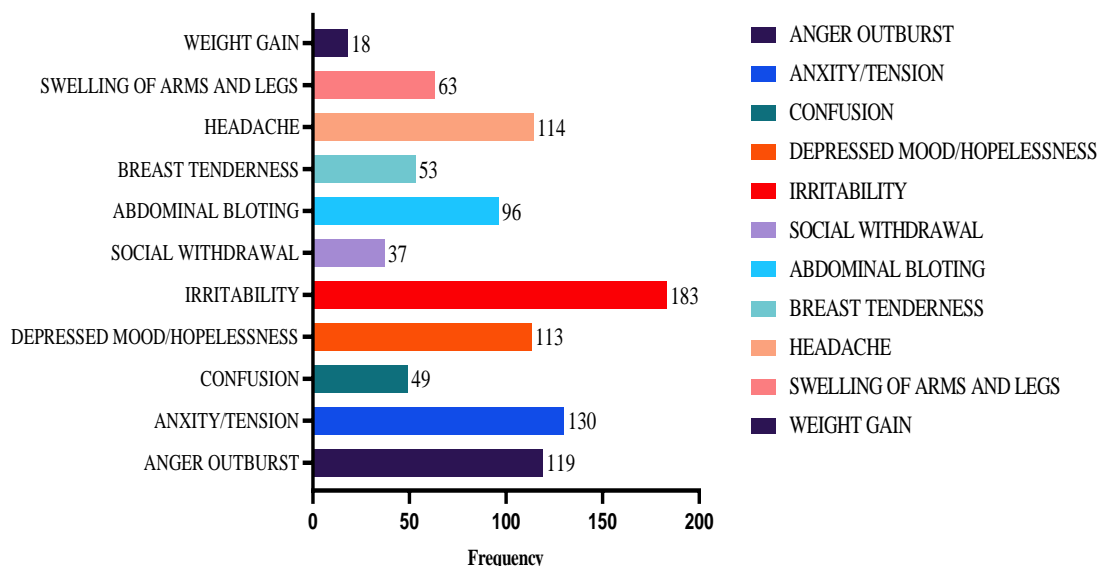


Fig. 3: The most common symptoms of premenstrual syndrome.

3.3. b Prevalence of PMS

With the help of ACOG criteria, a questionnaire was designed according to which the

prevalence of PMS was calculated as 63.66% whereas the remaining 36.33% did not experience PMS which has been demonstrated in **Fig.4** below.

THE PREVALENCE OF PMS IN STUDENTS

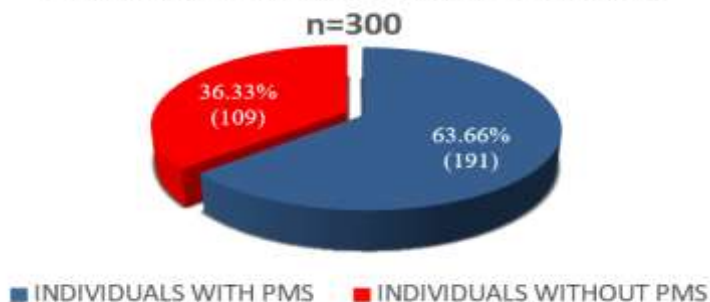


Fig. 4 Prevalence of PMS

3.4 PMDD

3.4. a The most common symptoms of premenstrual dysphoric disorder.

Table 3 shows the most common symptoms of premenstrual syndrome, where the complaints by students were feeling overtired and decreased interest in usual activities.

Table 3 The most common symptoms of premenstrual syndrome.

Symptoms	Total	Sum
Breast tenderness/joint or muscle pain	300	53
Sense of being out of control	300	25
Excessive sleepiness/lack of sleep	300	64
Marked change in appetite	300	41
Feeling overtired	300	108
Difficulty in concentration	300	72
Decreased interest in usual activities	300	106
Marked anxiety	300	54
Marked depressed mood	300	57
Marked irritability	300	91
Marked affective lability	300	91

3.4. b Prevalence of PMDD

According to the questionnaire designed with the help of ACOG criteria, the prevalence of PMDD has been demonstrated in **Fig. 5** and was

calculated as 20% whereas the remaining 80% of students did not experience the symptoms of PMDD.

THE PREVALENCE OF PMDD IN STUDENTS
n=300

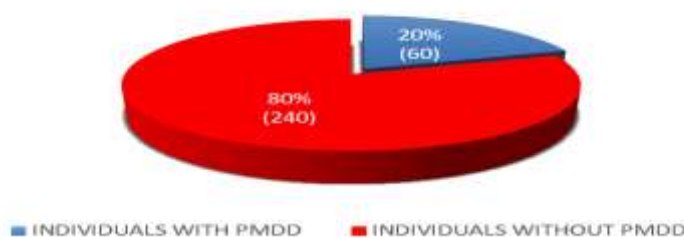


Fig.5: Prevalence of PMDD

3.5. Disturbances due to this PMS/PMDD in the daily work routine:

Among 300 participants 84 (28%) students reported that they have disturbances due to Premenstrual syndrome and Premenstrual dysphoric disorder in their daily life routine among which the most commonly reported disturbances were difficulty concentrating in class due to severe

abdominal pain and irritability, students were not able to do their daily work due to lack of energy and tiredness. Due to severe mood swings and cramps, students were having difficulty concentrating in class which caused their absenteeism in class. **Table 4** represents the disturbances due to PMS and PMDD in the daily work routine.

Table 4: Disturbances due to this PMS/PMDD in the daily work routine

Disturbances present	Frequency	Percentage (%)
No	216	72.0
Yes	84	28.0
TOTAL	300	100.0

3.6. Counselling session scoring

A counselling session was provided to the affected subjects after which the students rated the

session on the scale of 0-10 which is demonstrated in **Table 5** below.

Table 5: Counselling session scoring

Counselling Level	Number of Participants	Percentage %
Below Average (0-4)	9	3
Good (5-7)	38	13
Excellent (8-10)	253	84
Total	300	100

IV. DISCUSSION

Epidemiological profile

In the present study, a total of 300 responses were recorded, in which the mean age of the study population was 20.6 ± 1.4 years, which closely resembles a study conducted by Bakhshani NM et al., and Shehadeh JH et al.

Our research found that more than half of the participants have medical knowledge regarding PMS and PMDD 161(53.7%), this result closely resembles the study conducted by Mohib A. et al., in which the majority of females knew about PMS and PMDD.¹⁵

Premenstrual Syndrome

According to ACOG criteria the prevalence of PMS among college students in our study was 63.66%, a same study was conducted in Indonesia by Kustriyanti D where the prevalence of PMS was 63.7%.²⁰ A study conducted in Thailand by Buddhabyakan N et al., states the prevalence of PMS as 30%.¹⁶ The present study reported irritability, anxiety/tension, anger outburst, headache, and depressed mood/ hopelessness as the most commonly occurring symptoms, a similar study was conducted in Delhi by Teotia S et al., in which irritability and abdominal bloating were the most common symptoms.³ Another study

conducted by Buddhabyakan N et al., stated that breast tenderness, anger outburst, and anxiety were the most occurring symptoms.¹⁶

Premenstrual Dysphoric Disorder

The prevalence of Premenstrual dysphoric disorder in our study is 20%. The results infer that the prevalence rate of PMDD in this study is high compared with a previous study conducted by Gehlert S et al.¹⁷

Another study conducted by Shehadeh JH and Hamdan Mansour AM stated the prevalence of PMDD was 7.7%.¹⁸ The most common disturbances reported by students due to PMS and PMDD in our study were lack of concentration in class, students were not able to do their daily work due to lack of energy, and tiredness. Due to severe mood swings and cramps, students were having difficulty concentrating in class which caused their absenteeism in class. A previous study conducted by Teotia S et al. reported most frequent impairments seen in their study were concentration impairment, college/work productivity impairments, and absenteeism from college.³

V. CONCLUSION

The burden and impact of Premenstrual syndrome and premenstrual dysphoric disorder are

not well-characterized among college students. A high frequency of premenstrual syndrome and a significant prevalence of PMS were found in our study sample. The prevalence of premenstrual dysphoric disorder also was significantly high. Our study can be used as a point of reference regarding the impact of PMS and PMDD among female college students.

The assessment of PMS and PMDD was done using a questionnaire that was developed from ACOG and DSM-V criteria which helped in the easier diagnosis of PMS and PMDD. The most common affective and somatic symptoms among participants were irritability, anxiety/tension, and anger outbursts.

Based on the findings of the present study, it is obvious that PMS is a common problem affecting the educational activities and interpersonal relationships of female participants. There was a positive response from female participants towards the study, but almost half of the population was unaware of PMS and PMDD.

Considering the high prevalence of PMS and PMDD proper awareness and counselling for the mental state and affective problems concerning the conditions should be provided by the institutions. Further studies must be carried out in a larger population.

VI. ACKNOWLEDGEMENTS

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