

**Study of Premenstrual Syndrome in Adolescent Girl of Uttar Pradesh****Kajal Singh**

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Conflict of interest: Nil

**Abstract**

**Background:** Premenstrual Syndrome (PMS) is characterized by recurrent physical, psychological, affective, and behavioral symptoms occurring during the luteal phase of the menstrual cycle and resolving shortly after the onset of menstruation. PMS can adversely affect the quality of life, academic performance, and social well-being of adolescent girls. The present study was conducted to assess the prevalence and pattern of PMS symptoms among adolescent female students.

**Methods:** A cross-sectional study was conducted among 220 female students aged 17–19 years who had attained menarche. Data were collected using a predesigned questionnaire based on the diagnostic criteria of the American College of Obstetricians and Gynecologists (ACOG). Information regarding menstrual characteristics and premenstrual symptoms was obtained and analyzed.

**Results:** Regular menstrual cycles were reported by 192 (87.2%) participants, whereas 28 (12.8%) had irregular cycles. Dysmenorrhea was present in 177 (80.4%) participants. The most common premenstrual symptoms were irritability (85.0%), anger (60.9%), depression (45.0%), headache (40.5%), and swelling of limbs (5.0%). Severe PMS was observed in 19 (8.6%) participants.

**Conclusion:** Premenstrual Syndrome is highly prevalent among adolescent girls and is associated with a wide range of physical and psychological symptoms. Early recognition, health education, and appropriate counseling may help reduce symptom burden and improve the quality of life of affected adolescents.

**Keywords:** Premenstrual syndrome; adolescent girls; dysmenorrhea; irritability; ACOG.

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**Introduction**

Premenstrual Syndrome (PMS) is a common disorder characterized by recurrent physical, psychological, affective, and behavioral symptoms that occur during the luteal phase of the menstrual cycle and resolve shortly after the onset of menstruation. Common symptoms include irritability, mood changes, anxiety, depression, fatigue, headache, breast tenderness, abdominal bloating, and difficulty in concentration. These symptoms may adversely affect daily activities, interpersonal relationships, academic performance, and overall quality of life [1].

According to the World Health Organization (WHO), adolescents are individuals between 10 and 19 years of age. Adolescence is a transitional period marked by rapid physical, emotional, and psychological changes, with the establishment of regular menstrual cycles being an important milestone in female reproductive development. Menstrual disorders are among the most common health concerns during this period and can significantly influence the well-being of adolescent girls [2]. The prevalence of PMS varies widely

across different populations and countries. In India, reported prevalence rates range from 14.3% to 74.7%, depending on the study population and diagnostic criteria used.

Despite its high prevalence, awareness regarding PMS remains inadequate among many adolescents, resulting in under-recognition and delayed healthcare seeking. Early identification of PMS is important because persistent symptoms can negatively affect physical health, emotional stability, social interactions, and academic performance [3,4].

Healthcare students represent a unique group because of academic demands, lifestyle changes, and psychological stress, all of which may influence menstrual health and premenstrual symptoms. The present study was undertaken to assess the prevalence and pattern of Premenstrual Syndrome among adolescent female healthcare students using the American College of Obstetricians and Gynecologists (ACOG) criteria.

**Materials and Methods**

This cross-sectional observational study was conducted in the Department of Obstetrics and Gynaecology, SKS Hospital Medical College and Research Centre, Mathura, Uttar Pradesh, from November 2022 to August 2023. A total of 220 first-year female students enrolled in MBBS, BAMS, B.Pharm, and D.Pharm courses were included in the study.

**Inclusion Criteria:** Female students who had attained menarche and provided written informed consent to participate in the study.

**Exclusion Criteria:** Students who declined to participate in the study or submitted incomplete questionnaires were excluded from the analysis.

**Study Procedure:** Eligible students were informed about the objectives of the study, and written informed consent was obtained prior to enrollment. Data were collected using a predesigned and pretested questionnaire consisting of demographic details, menstrual history, and premenstrual symptoms.

Premenstrual Syndrome was assessed using the diagnostic criteria of the American College of Obstetricians and Gynecologists (ACOG). Quality of life was evaluated using the World Health Organization Quality of Life-BREF (WHOQOL-BREF) questionnaire, which assesses four domains: physical health, psychological health, social relationships, and environmental health. Participants completed the questionnaire anonymously. The collected data were entered into a Microsoft Excel spreadsheet and analyzed using appropriate statistical methods.

**Ethical Considerations:** The study was conducted after obtaining approval from the Institutional Ethics Committee. Participation was voluntary, and confidentiality of all participants was maintained throughout the study.

**Statistical Analysis:** Data were entered into Microsoft Excel and analyzed using Statistical

Package for the Social Sciences (SPSS) software. Descriptive statistics were used to summarize the data. Categorical variables were expressed as frequencies and percentages. Premenstrual symptoms were analyzed according to the American College of Obstetricians and Gynecologists (ACOG) criteria, and the severity of Premenstrual Syndrome was classified and presented as percentages. The results were tabulated and interpreted accordingly.

### Observations and Results

**Table 1:** A total of 220 adolescent female students aged 17–19 years were included in the study. The majority of participants reported regular menstrual cycles (87.2%), while 12.8% had irregular cycles. Low menstrual flow was reported by 82.7% of participants, whereas 17.3% reported heavy menstrual flow. The duration of menstrual flow was less than five days in 70.4% of participants and more than five days in 29.5%. Dysmenorrhea was present in 80.4% of participants.

**Table 2:** The distribution of premenstrual symptoms according to the American College of Obstetricians and Gynecologists (ACOG) criteria is shown in Table 2.

Irritability was the most frequently reported symptom (85.0%), followed by anger (60.9%), anxiety (51.3%), confusion (46.3%), depression (45.0%), headache (40.4%), abdominal distension (38.5%), social withdrawal (25.0%), breast pain (22.7%), and swelling of limbs (5.0%).

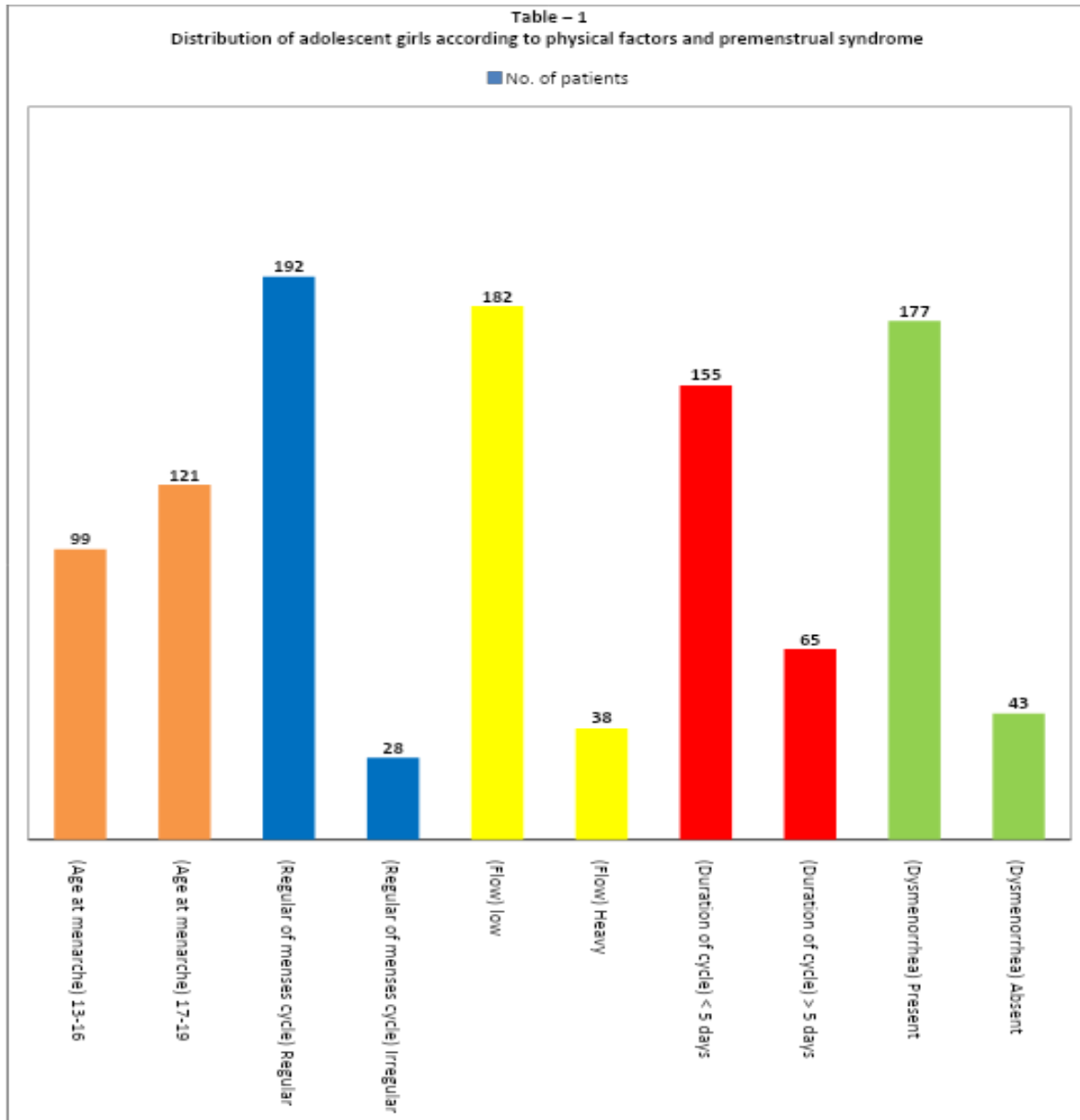
**Table 3:** Assessment of PMS severity revealed that only one participant (0.45%) had no significant symptoms.

Mild PMS was observed in 57 (25.9%) participants, moderate PMS in 90 (40.9%), severe PMS in 53 (24.1%), and very severe PMS in 19 (8.6%) participants. Moderate PMS was the most common severity category observed in the study population.

**Table 1: Distribution of adolescent girls according to physical factors and premenstrual syndrome (Total No. of Patients: 220)**

Physical factors	No. of patients	Percentage (%)
(A) Age at menarche		
13-16	99	45
17-19	121	55
(B) Regular of menses cycle		
Regular	192	87.2
Irregular	28	12.7
(C) Flow		
low	182	82.7
Heavy	38	17.2
(D) Duration of cycle		
< 5 days	155	70.4
> 5 days	65	29.5

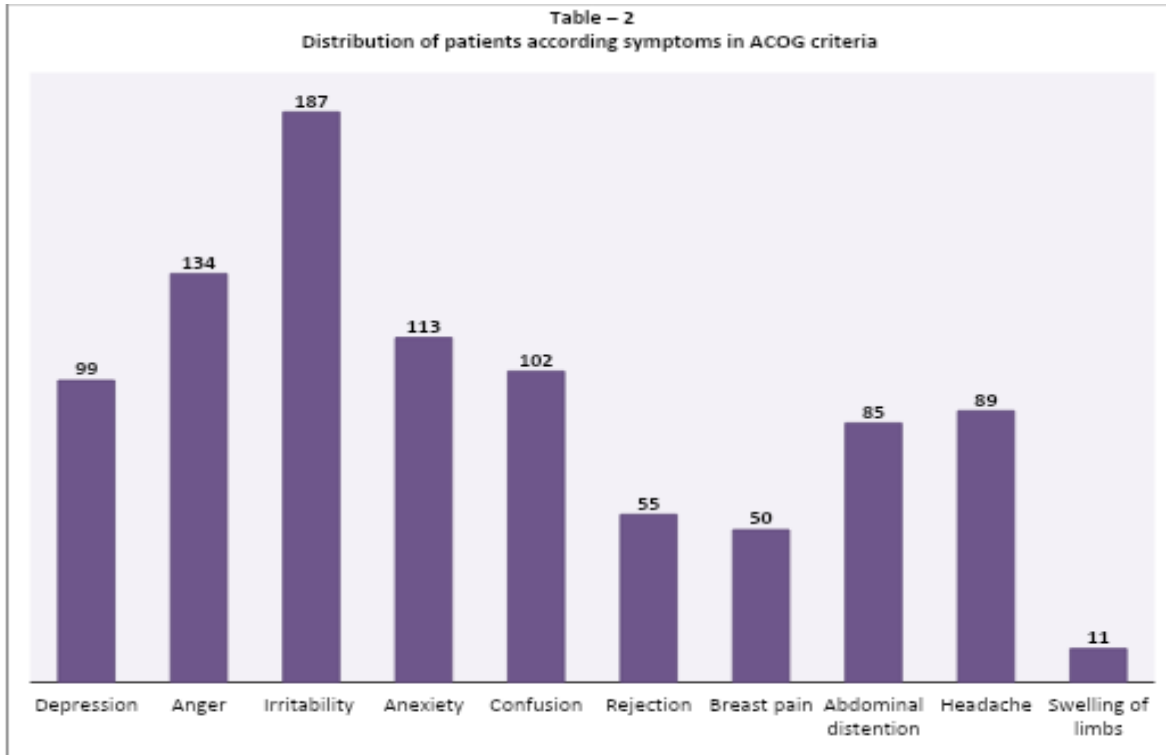
(E) Dysmenorrhea		
Present	177	80.4
Absent	43	19.5



**Figure 1: Distribution of adolescent girls according to physical factors and premenstrual syndrome**

**Table 2: Distribution of patients according symptoms in ACOG criteria**

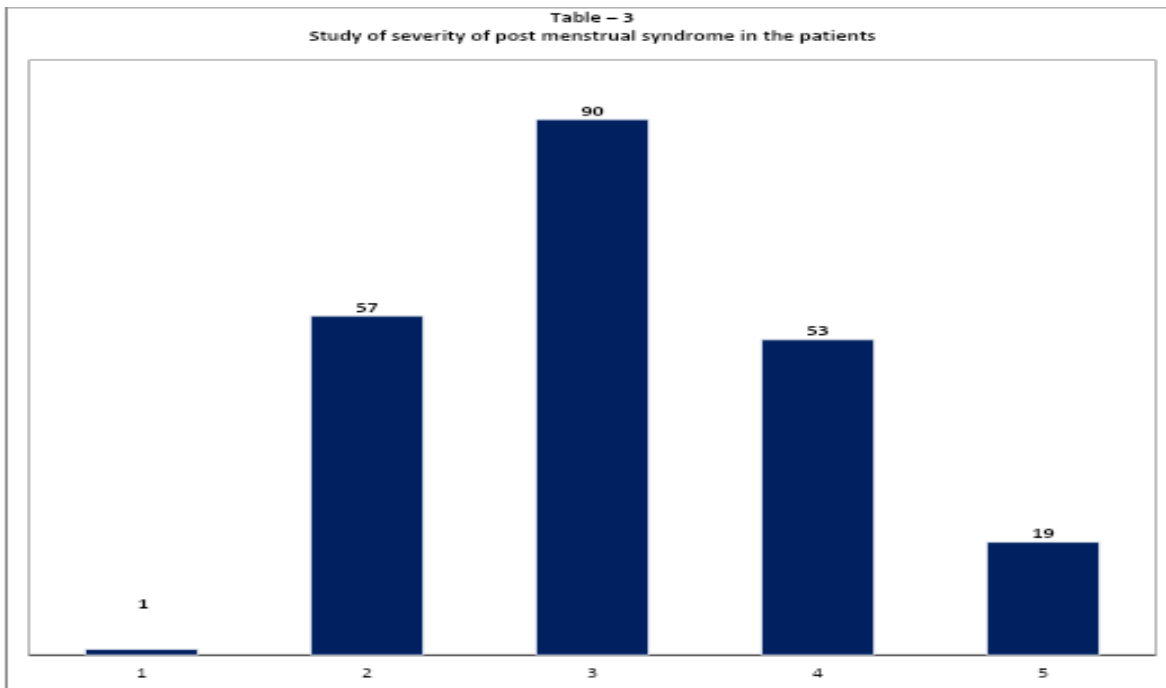
Symptoms	No. of patients (220)	Percentage (%)
Depression	99	45
Anger	134	60.9
Irritability	187	85
Anxiety	113	51.3
Confusion	102	46.3
Rejection	55	25
Breast pain	50	22.7
Abdominal distention	85	38.6
Headache	89	40.4
Swelling of limbs	11	5



**Figure 2: Distribution of Patients according symptoms in ACOG criteria**

**Table 3: Study of severity of post menstrual syndrome in the patients**

severity of symptoms	Actual score	No. of patients with Percentage (%)
No symptom	1 – 40	1 (0.45%)
Mild symptoms	41 – 80	57 (25.9%)
Moderate symptoms	81 – 120	90 (40.9%)
Severe symptoms	121 – 160	53 (24.09%)
Very severe symptoms	161 – 200	19 (8.6%)



**Figure 3: Study of severity of post menstrual syndrome in the patients**

## Discussion

The present study assessed the prevalence and pattern of Premenstrual Syndrome (PMS) among adolescent female healthcare students. A high proportion of participants reported regular menstrual cycles (87.2%), while dysmenorrhea was present in 80.4% of the study population. Dysmenorrhea is a common menstrual complaint among adolescents and has been reported to be associated with increased severity of premenstrual symptoms.

Among the various PMS symptoms assessed using the American College of Obstetricians and Gynecologists (ACOG) criteria, irritability was the most commonly reported symptom (85.0%), followed by anger (60.9%), anxiety (51.3%), confusion (46.3%), and depression (45.0%). Similar findings have been reported in previous studies, where psychological and emotional symptoms were found to predominate over physical symptoms among adolescents and young women [5,6,7].

Assessment of PMS severity revealed that moderate PMS was the most common category (40.9%), while severe and very severe PMS were observed in 24.1% and 8.6% of participants, respectively. These findings indicate that PMS constitutes a significant health concern among adolescent girls and may adversely affect their academic performance, daily activities, interpersonal relationships, and overall quality of life.

The exact etiology of PMS remains incompletely understood and is believed to be multifactorial. Biological, genetic, psychological, environmental, and sociocultural factors have all been implicated in its development. Menstrual attitudes and perceptions, which are shaped by cultural beliefs, family environment, and social influences, may affect both the experience and reporting of premenstrual symptoms. Adolescents who perceive menstruation negatively may be more likely to report greater symptom severity and associated distress. [8,9].

Lifestyle factors such as dietary habits, sleep quality, physical activity, and stress levels may also influence the occurrence and severity of PMS. Increased academic demands, emotional stress, and inadequate awareness regarding menstrual health may contribute to worsening of symptoms among healthcare students. Family support and maternal education have been reported to play an important role in improving menstrual health awareness and promoting positive coping strategies among adolescent girls [10,11].

The findings of the present study highlight the need for increased awareness regarding PMS and the

implementation of educational and counseling programs for adolescent girls. Early recognition and appropriate management may help reduce symptom burden and improve quality of life.

## Summary and Conclusion

Premenstrual Syndrome (PMS) was found to be highly prevalent among adolescent female healthcare students in the present study. Psychological symptoms such as irritability, anger, anxiety, and depression were more commonly reported than physical symptoms. A substantial proportion of participants experienced moderate to severe PMS, indicating its significant impact on their daily activities and quality of life.

The findings highlight the need for increased awareness regarding PMS among adolescents and young women. Early recognition, health education, counseling, family support, and adoption of healthy lifestyle practices may help in improving symptom management and overall well-being.

Further studies involving larger populations are recommended to better understand the factors influencing PMS and its impact on adolescent health.

**Limitations of the Study:** This was a single-center, cross-sectional study conducted among a limited number of participants, which may restrict the generalizability of the findings. The assessment of premenstrual symptoms was based on self-reported responses and was therefore subject to recall bias. Additionally, prospective symptom monitoring over consecutive menstrual cycles was not performed.

This research work was approved by the ethical committee of SKS Medical College, research centre and hospital Mathura, Uttar Pradesh-281406.

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