

A Descriptive Study to Assess the Knowledge of Pre-Menstrual Syndrome among Adolescent Girls in Selected Higher Secondary College, Gr. Noida

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Abstract: Background: Premenstrual syndrome (PMS) is a common condition among adolescent girls and is characterized by physical, psychological, and behavioral symptoms that occur during the luteal phase of the menstrual cycle. Inadequate knowledge regarding PMS may lead to misconceptions, delayed recognition of symptoms, and inappropriate self-management practices. Assessing the level of knowledge among adolescents is essential for planning effective health education interventions. Methods: A descriptive cross-sectional study was conducted among 60 adolescent girls studying in a selected higher secondary school in Greater Noida, Uttar Pradesh. Participants were selected using a purposive sampling technique. Data were collected using a structured self-administered questionnaire consisting of demographic variables and 20 knowledge-based questions related to PMS. Descriptive statistics (frequency and percentage) and inferential statistics (Chi-square test) were used for data analysis. Results: Most participants (70.0%) were aged 15–17 years, 75.0% were Hindu, 55.0% belonged to joint families, and 70.0% were science students. Overall, 53.3% of participants demonstrated adequate knowledge regarding PMS, 38.3% had good knowledge, and 8.3% had average knowledge. Monthly family income showed a statistically significant association with knowledge scores, whereas age, religion, type of family, stream of study, marital status, and source of information were not significantly associated. Conclusion: The findings indicate that although most adolescent girls possessed adequate knowledge regarding PMS, important knowledge gaps remain. School-based reproductive health education programs and awareness initiatives may help improve understanding of PMS and promote appropriate menstrual health practices among adolescents.

Keywords: Premenstrual syndrome, adolescent girls, knowledge, menstrual health, higher secondary school, cross-sectional study

1. Introduction

Premenstrual syndrome (PMS) is a common cyclic disorder experienced by women of reproductive age and is characterized by a combination of physical, emotional, psychological, and behavioral symptoms that occur during the luteal phase of the menstrual cycle and usually resolve with the onset of menstruation. Common symptoms include abdominal bloating, breast tenderness, fatigue, irritability, mood swings, anxiety, headache, and difficulty concentrating. The severity of these symptoms varies among individuals and may significantly affect daily activities, academic performance, interpersonal relationships, and overall quality of life.

Adolescence is a critical stage of physical, emotional, and psychosocial development during which girls experience significant hormonal changes associated with puberty and menarche. As menstruation becomes established, many adolescents experience premenstrual symptoms. However, inadequate knowledge regarding PMS often results in misconceptions, delayed recognition of symptoms, poor self-care practices, and unnecessary anxiety. Improving awareness during adolescence is therefore essential for promoting positive menstrual health and encouraging timely health-seeking behavior.

Globally, the prevalence of PMS varies widely because of differences in diagnostic criteria, study populations, and cultural backgrounds. Previous studies have reported that a substantial proportion of adolescent girls experience one or more premenstrual symptoms, with many reporting adverse effects on their educational, social, and emotional well-being. Despite its high prevalence, menstrual health education

remains inadequate in many schools, particularly in developing countries, where discussion of menstruation is often limited by cultural beliefs and social stigma.

Knowledge regarding PMS plays a vital role in helping adolescents recognize normal physiological changes, differentiate common symptoms from conditions requiring medical attention, and adopt appropriate self-management strategies. School-based reproductive health education can improve awareness, reduce misconceptions, and empower adolescent girls to manage menstrual symptoms more effectively.

Considering the importance of menstrual health education and the limited evidence regarding adolescents' knowledge of PMS in selected school settings, the present study was undertaken to assess the knowledge regarding premenstrual syndrome among adolescent girls studying in a selected higher secondary school in Greater Noida, Uttar Pradesh. The findings are expected to provide evidence for planning educational interventions aimed at improving menstrual health awareness among adolescents.

2. Materials and Methods

Study Design

A descriptive cross-sectional study was conducted to assess the knowledge regarding premenstrual syndrome (PMS) among adolescent girls.

Study Setting

The study was carried out at a selected higher secondary school in Greater Noida, Uttar Pradesh, India.

Volume 15 Issue 7, July 2026

Fully Refereed | Open Access | Double Blind Peer Reviewed Journal

www.ijsr.net

Study Population

The study population comprised adolescent girls enrolled in the selected higher secondary school who fulfilled the eligibility criteria during the study period.

Sample Size and Sampling Technique

A total of 60 adolescent girls participated in the study. Participants were selected using a non-probability purposive sampling technique.

Eligibility Criteria

Inclusion Criteria

- Adolescent girls studying in the selected higher secondary school.
- Students who were present during data collection.
- Students who voluntarily agreed to participate in the study.

Exclusion Criteria

- Students who were absent during data collection.
- Students who were unwilling to participate or did not complete the questionnaire.

Data Collection Tool

Data were collected using a structured self-administered questionnaire consisting of two sections.

- **Section A:** Demographic characteristics including age, religion, type of family, educational stream, marital status, monthly family income, and source of information regarding PMS.
- **Section B:** A structured knowledge questionnaire comprising 20 multiple-choice questions assessing knowledge related to premenstrual syndrome, including its definition, symptoms, causes, risk factors, and management.

Each correct response was awarded one mark, while incorrect responses received zero marks, resulting in a maximum possible score of 20.

Knowledge scores were categorized as follows:

- Good knowledge: 15–20
- Adequate knowledge: 10–14
- Average knowledge: 5–9
- Inadequate knowledge: 0–4

Data Collection Procedure

After obtaining permission from the school authorities, eligible participants were informed about the purpose of the study. Written informed consent/assent was obtained as applicable. Participants completed the structured questionnaire in the classroom under the supervision of the investigator. Confidentiality and anonymity of the collected information were maintained throughout the study.

Statistical Analysis

The collected data were entered into Microsoft Excel and analyzed using appropriate statistical software. Descriptive statistics, including frequencies and percentages, were used to summarize demographic characteristics and knowledge levels. The Chi-square test was applied to determine the association between knowledge scores and selected

demographic variables. A p -value of <0.05 was considered statistically significant.

Ethical Considerations

Administrative permission was obtained from the concerned school authority before commencing the study. Participation was voluntary, and participants were informed about the objectives of the study. Confidentiality of the collected information was ensured, and the data were used solely for research purposes.

3. Results

Participant Characteristics

A total of 60 adolescent girls participated in the study. The majority of participants were aged 15–17 years (70.0%), followed by 17–19 years (23.3%) and above 20 years (6.7%). Most participants were Hindu (75.0%), belonged to joint families (55.0%), and were studying in the science stream (70.0%). More than half (53.3%) reported a monthly family income between ₹50,000 and ₹1,50,000, while 60.0% identified family members as their primary source of information regarding premenstrual syndrome. Most participants were unmarried (93.3%).

Table 1: Demographic characteristics of the participants (N = 60)

Variable	Frequency (n)	Percentage (%)
Age (years)		
15–17	42	70.0
17–19	14	23.3
>20	4	6.7
Religion		
Hindu	45	75.0
Muslim	13	21.7
Christian	2	3.3
Type of family		
Joint	33	55.0
Nuclear	27	45.0
Educational stream		
Science	42	70.0
Commerce	14	23.3
Arts	4	6.7
Monthly family income		
Above ₹50,000	18	30.0
₹50,000–₹1,50,000	32	53.3
Above ₹1,50,000	10	16.7
Marital status		
Single	56	93.3
Married	4	6.7
Source of information		
Family members	36	60.0
Literature	19	31.7
Mass media	5	8.3

Knowledge Regarding Premenstrual Syndrome

More than half of the participants (53.3%) demonstrated **adequate knowledge** regarding premenstrual syndrome, while 38.3% had **good knowledge**. Only 8.3% exhibited **average knowledge**, and none of the participants had inadequate knowledge.

Table 2: Distribution of participants according to knowledge level regarding premenstrual syndrome (N = 60)

Knowledge level	Frequency (n)	Percentage (%)
Good	23	38.3
Adequate	32	53.3
Average	5	8.3
Inadequate	0	0.0

Association Between Knowledge Scores and Demographic Variables

The association between knowledge scores and selected demographic variables was analyzed using the Chi-square test. Monthly family income showed a statistically significant association with knowledge level ($p = 0.01$). However, no statistically significant association was observed between knowledge scores and age, religion, type of family, educational stream, marital status, or source of information ($p > 0.05$).

Table 3: Association between knowledge level and selected demographic variables

Variable	χ^2	p-value	Interpretation
Age	1.54	0.21	Not significant
Religion	0.17	>0.05	Not significant
Type of family	0.142	0.70	Not significant
Educational stream	0.11	>0.05	Not significant
Monthly family income	5.59	0.01	Significant
Marital status	1.00	0.30	Not significant
Source of information	0.05	0.82	Not significant

4. Discussion

The present study assessed the knowledge regarding premenstrual syndrome (PMS) among adolescent girls studying in a selected higher secondary school in Greater Noida, Uttar Pradesh. The findings revealed that more than half of the participants (53.3%) had adequate knowledge regarding PMS, while 38.3% demonstrated good knowledge and only 8.3% had average knowledge. These findings indicate that although the majority of adolescent girls possessed a basic understanding of PMS, gaps in knowledge still exist, highlighting the need for continued menstrual health education.

The demographic profile showed that most participants were aged 15–17 years, belonged to the Hindu religion, lived in joint families, and were enrolled in the science stream. Family members were reported as the primary source of information regarding PMS. This finding suggests that parents and family members continue to play an important role in shaping adolescents' knowledge about menstrual health. Therefore, awareness programmes should target not only students but also parents and teachers to promote accurate information and healthy menstrual practices.

The present findings are comparable with previous studies reporting that adolescent girls generally possess moderate to adequate knowledge regarding PMS but continue to have misconceptions related to its causes, symptoms, and management. Differences in knowledge levels across studies may be attributed to variations in educational background, cultural beliefs, socioeconomic status, accessibility of reproductive health information, and study settings.

A statistically significant association was observed between monthly family income and knowledge regarding PMS. Adolescents from families with higher socioeconomic status may have greater access to health information, educational resources, healthcare services, and digital media, contributing to better knowledge. In contrast, no significant association was observed between knowledge level and age, religion, type of family, educational stream, marital status, or source of information. This suggests that awareness regarding PMS should be strengthened among all adolescent girls irrespective of their demographic characteristics.

The findings emphasize the importance of integrating menstrual and reproductive health education into school health programmes. Structured educational sessions conducted by nurses, school health educators, and teachers can improve adolescents' understanding of PMS, dispel myths and misconceptions, encourage healthy self-care practices, and promote timely healthcare-seeking behaviour when symptoms interfere with daily activities.

Although the present study provides valuable baseline information regarding adolescents' knowledge of PMS, its findings should be interpreted in light of certain limitations, including the relatively small sample size, the use of purposive sampling, and the conduct of the study in a single educational institution, which may limit the generalizability of the results. Future studies involving larger and more diverse populations are recommended to provide stronger evidence regarding adolescents' knowledge and awareness of premenstrual syndrome.

5. Conclusion

Premenstrual syndrome is a common health concern among adolescent girls and has the potential to affect their physical, emotional, academic, and social well-being. The present study demonstrated that the majority of participants possessed adequate knowledge regarding premenstrual syndrome, while a considerable proportion had good knowledge. However, certain knowledge gaps were still identified, indicating the need for continued menstrual health education.

Among the selected demographic variables, only monthly family income showed a statistically significant association with knowledge regarding premenstrual syndrome. These findings emphasize the importance of implementing structured health education programmes in schools to improve awareness, correct misconceptions, and encourage appropriate self-care practices among adolescent girls. School-based educational interventions led by nurses and teachers can play a vital role in promoting menstrual health and improving the quality of life of adolescents.

6. Recommendations

Based on the findings of the study, the following recommendations are suggested:

- 1) Similar studies should be conducted with larger sample sizes to improve the generalizability of the findings.
- 2) Comparative studies involving rural and urban schools may provide a broader understanding of adolescents' knowledge regarding premenstrual syndrome.

- 3) Interventional studies evaluating the effectiveness of structured educational programmes on menstrual health awareness are recommended.
- 4) School health programmes should include regular menstrual health education sessions conducted by qualified healthcare professionals.
- 5) Parents and teachers should be actively involved in promoting accurate menstrual health information among adolescent girls.

7. Strengths and Limitations

Strengths

- The study addressed an important adolescent reproductive health issue.
- A structured questionnaire was used to assess participants' knowledge.
- The findings provide baseline information that may assist in planning future school health education programmes.

Limitations

- The study included only 60 participants.
- Participants were selected using purposive sampling.
- The study was conducted in a single higher secondary school, limiting the generalizability of the findings.
- Self-reported responses may have introduced response bias.

Acknowledgements

The authors express sincere gratitude to the school authorities and all adolescent girls who willingly participated in the study. The authors also acknowledge the guidance and support received from the faculty members throughout the conduct of the research.

Conflict of Interest

The authors declare that there is no conflict of interest regarding the publication of this manuscript.

Funding

The study did not receive any external funding.

Ethical Approval

Permission to conduct the study was obtained from the concerned school authority prior to data collection. Participation was voluntary, and informed consent/assent was obtained from all participants as applicable. Confidentiality and anonymity of the participants were maintained throughout the study.

Author Contributions

The author contributed to the conception and design of the study, data collection, data analysis, interpretation of findings, manuscript preparation, and final approval of the manuscript.

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Author Profile



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