

ASSESSMENT OF KNOWLEDGE REGARDING PREMENSTRUAL SYNDROME AMONG ADOLESCENT GIRLS ACROSS THREE PRIVATE SCHOOLS OF GUJRAT

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Abstract: **Background:** The Premenstrual syndrome (PMS) encompasses a range of physical, emotional, cognitive, and behavioral symptoms that occur periodically during the luteal phase of the menstrual cycle, resolving shortly after menstruation begins, in the absence of underlying medical or psychiatric conditions. **Objective:** Objective of the study is to assess the knowledge regarding premenstrual syndrome among adolescent girls across three high schools of Gujrat. **Methodology:** A descriptive cross-sectional study was conducted among 173 adolescent girls from three high schools in Gujrat—GGHSS Ghareeb Pura, GGHS Municipal Model, and GGHS MB Fatima Jinnah—over a period of four months (July to September 2025). Participants were selected using a convenient sampling technique based on inclusion criteria of age 12–17 years, attainment of menarche, school enrollment, and willingness to participate. Data were collected using a structured, pre-tested questionnaire assessing demographic characteristics and knowledge of Premenstrual Syndrome (PMS). Each correct response was scored as one mark, and knowledge levels were categorized from poor to excellent. Ethical approval, written informed consent, and confidentiality were ensured. Collected data were analysed using SPSS version 25, employing descriptive statistics (frequencies and percentages) and chi-square tests to examine associations between knowledge and demographic variables. **Results:** A total of 173 high school girls participated, mostly aged 14–15 years, with nearly equal representation from 9th and 10th grades and three schools. Overall knowledge of Premenstrual Syndrome was low, with 59.5% having poor knowledge, and no significant association was found between knowledge and age, school, or grade, indicating a substantial knowledge gap. **Conclusion:** The study revealed that the majority of high school girls had poor knowledge regarding Premenstrual Syndrome. No significant association was found between knowledge level and age, school, or grade, highlighting the need for targeted educational interventions.

Keywords: Assessment of Knowledge; Premenstrual Syndrome; Attitude; Awareness; Education.

INTRODUCTION

Premenstrual Syndrome (PMS) encompasses a diverse range of physical, emotional, cognitive, and behavioural symptoms that cyclically emerge during the luteal phase of the menstrual cycle and resolve shortly after menstruation begins, without the presence of underlying psychiatric or medical conditions (Kalaskar & Dhadave, 2024). These symptoms may include irritability, mood swings, fatigue, anxiety, depression, abdominal discomfort, and changes in appetite or sleep patterns. Although often perceived as a normal aspect of the menstrual cycle, PMS can significantly hinder daily functioning, interpersonal relationships, and psychosocial well-being (Chen et al., 2024).

PMS has broader public health implications due to its association with severe emotional disturbances and impaired performance in various domains of life (Chen et al., 2024). Evidence indicates that individuals suffering from moderate to severe PMS are at increased risk of suicidal ideation, road traffic accidents, workplace absenteeism, reduced productivity, and

compromised academic achievement (Chekol et al., 2024). Moreover, PMS has been linked to depression, family conflict, child behavioral issues, and even domestic violence, demonstrating its widespread impact beyond the affected individual (Abdelazim et al., 2024). These consequences highlight the urgent need for awareness, early identification, and appropriate management strategies.

Adolescence, typically defined as ages 10–19, represents a critical period of development characterized by rapid hormonal, psychological, cognitive, and physical changes (Poudel et al., 2023). These transitions contribute to various emotional and social challenges, making adolescent girls particularly vulnerable to PMS and related menstrual health issues (Poudel et al., 2023). Limited coping skills, inadequate knowledge of reproductive health, and sociocultural stigma surrounding menstruation further intensify the burden among young females (Zahid et al., 2023).

METHODOLOGY & MATERIALS

The study employed a descriptive cross-sectional design and was conducted over a four-month period from July to September 2025 at three selected government girls' high schools in Gujrat, namely GGHSS Ghareeb Pura, GGHS Municipal Model, and GGHS MB Fatima Jinnah. A sample of 173 adolescent girls was drawn from a total population of 305 using a convenience sampling technique, calculated with a 5% margin of error. The study included girls aged 12–17 years who had attained menarche, were regularly attending school, were willing to participate, and could understand the questionnaire, while those who had not attained menarche, were absent, unwilling, or had medical conditions affecting menstruation were excluded. Data were collected using a structured questionnaire consisting of a demographic section and an adopted

PMS knowledge questionnaire with 25 multiple-choice items, where correct responses were scored as one and incorrect or unanswered responses as zero, and knowledge levels were categorized from poor to excellent. Data collection was carried out in classroom settings after obtaining formal permission from school authorities and informed consent from participants, ensuring confidentiality and voluntary participation. The collected data were analyzed using SPSS version 25, applying descriptive statistics and chi-square tests to examine associations between knowledge levels and selected demographic variables. Ethical principles were strictly observed, including informed consent, anonymity, confidentiality, and the participants' right to withdraw from the study at any time without any risk or penalty.

RESULTS

Table 1: Demographics characteristics of participants

Demographic Variables	Category	Frequency (f)	Percentage (%)
Age	12-13 Year	44	25.4
	14-15 year	76	43.9
	16-17 year	53	30.6
School Name	GGHSS Ghareeb Pura Gujrat	74	42.8
	GGHS Muncipal Model Gujrat	50	28.9
	GGHS MB Fatima Jinnah Gujrat	49	28.3
	GGHSS Ghareeb Pura Gujrat	74	42.8
Grade of Study	9 Grade	85	49.1
	10 Grade	88	50.8

Table 1 presents the demographic characteristics of the participants. Most students were aged 14–15 years (43.9%), followed by those aged 16–17 years (30.6%) and 12–13 years (25.4%). Participants were drawn from three schools, with the highest proportion from GGHSS Ghareeb Pura Gujrat (42.8%), while GGHS Municipal Model Gujrat and GGHS MB Fatima Jinnah Gujrat contributed nearly equal proportions (28.9% and 28.3%, respectively). Regarding grade of study, participants were almost equally distributed between 9th grade (49.1%) and 10th grade (50.8%).

Knowledge Regarding Premenstrual Syndrome

Table 2 presents the level of knowledge of school-going girls regarding Premenstrual Syndrome (PMS). Overall, the table shows that a high proportion of participants gave wrong answers to most of the questions related to the definition, causes, timing, symptoms, and management of PMS. For many items, more than half of the respondents answered incorrectly, indicating limited awareness about PMS. The highest proportion of wrong responses was observed for questions related to symptom disappearance, nutrient imbalance, and ways to reduce mood swings, where more than 80% of the girls answered incorrectly. Comparatively better knowledge was seen in a few areas, such as abdominal bloating and irritability before menstruation, where slightly more than half of the participants provided correct answers. However, in general, correct responses remained low across most items, reflecting inadequate overall knowledge of PMS among school-going girls.

Table 2: Knowledge of school going girls Regarding Premenstrual Syndrome

Variable	Wrong Answer Frequency (%)	Correct Answer Frequency (%)
1. What is Premenstrual Syndrome (PMS)?	123(71.1%)	50(28.9%)
2. PMS occurs during which phase of the menstrual cycle?	120(69.4%)	53(30.6%)
3. PMS symptoms usually disappear:	149(86.1%)	24(13.9%)
4. PMS is mainly caused by fluctuations in:	106(61.3%)	67(38.7%)
5. PMS is common among:	97(56.1%)	76(43.9%)
6. Which of the following is a common physical symptom of PMS?	106(61.3%)	67(38.7%)
7. Abdominal bloating before menstruation is a symptom of:	84(48.6%)	89(51.4%)
8. Headache and fatigue during the premenstrual phase indicate:	102(59%)	71(41%)
9. Which symptom is commonly seen before menstruation?	106(61.3%)	67(38.7%)
10. Pain in the lower abdomen before periods is called:	93(53.8%)	80(46.2%)
11. Mood swings experienced before periods are a sign of:	106(61.3%)	67(38.7%)
12. Irritability and anger before menstruation occur due to:	84(48.6%)	89(51.4%)
13. Which emotional symptom is commonly associated with PMS?	102(59%)	71(41%)
14. Difficulty in concentrating before periods is related to:	106(61.3%)	67(38.7%)
15. Social withdrawal before menstruation indicates:	120(69.4%)	53(30.6%)
16. Which nutrient imbalance is associated with PMS?	149(86.1%)	24(13.9%)
17. Stress increases the severity of PMS because it:	106(61.3%)	67(38.7%)
18. Lack of sleep before menstruation can:	93(53.8%)	80(46.2%)
19. Sedentary lifestyle is considered:	106(61.3%)	67(38.7%)
20. PMS may be more common in females with:	123(71.1%)	50(28.9%)
21. Which simple measure helps reduce PMS symptoms?	120(69.4%)	53(30.6%)
22. To reduce mood swings during PMS, one should:	149(86.1%)	24(13.9%)
23. Which dietary habit worsens PMS symptoms?	106(61.3%)	67(38.7%)
24. A warm bath or warm compress helps relieve:	123(71.1%)	50(28.9%)
25. When should a girl seek medical help for PMS?	120(69.4%)	53(30.6%)

Table 3. Overall Knowledge of participants

Level of Knowledge	Frequency	Percentage
Poor Knowledge	103	59.5
Moderate Knowledge	44	25.4
Good Knowledge	26	15.0
Total	173	100.0

Table 3 presents the overall knowledge levels of the participants regarding Premenstrual Syndrome. Out of 173 participants, 59.5% had poor knowledge, 25.4% had moderate knowledge, and only 15% demonstrated good knowledge. These results indicate that the majority of participants lacked adequate knowledge about PMS.

Association of Knowledge with Demographic Variables

Table 4. Association between Level of Knowledge and Age of Participants (n = 173)

Age (Years)	Poor Knowledge n (%)	Moderate Knowledge n (%)	Good Knowledge n (%)	Total	χ^2	p-value
12–13	30 (68.2)	9 (20.5)	5 (11.3)	44	6.82	0.146
14–15	46 (60.5)	20 (26.3)	10 (13.2)	76		
16–17	27 (50.9)	15 (28.3)	11 (20.8)	53		
Total	103	44	26	173		

Table 4 shows the association between participants' age and level of knowledge. Poor knowledge was most common across all age groups, though it decreased with increasing age, while moderate and good knowledge showed a gradual increase among older participants. However, the chi-square test indicated no statistically significant association between age and knowledge level ($\chi^2 = 6.82$, $p = 0.146$).

Table 5. Association between Level of Knowledge and School Name (n = 173)

School Name	Poor Knowledge n (%)	Moderate Knowledge n (%)	Good Knowledge n (%)	Total	χ^2	p-value
GGHSS Ghareeb Pura Gujrat	48 (64.9)	17 (23.0)	9 (12.1)	74	4.91	0.297
GGHS Municipal Model Gujrat	30 (60.0)	12 (24.0)	8 (16.0)	50		
GGHS MB Fatima Jinnah Gujrat	25 (51.0)	15 (30.6)	9 (18.4)	49		
Total	103	44	26	173		

Table 5 presents the association between participants' level of knowledge and school name. In all three schools, the majority of students demonstrated poor knowledge, followed by moderate and good knowledge in smaller proportions. Although slight variations were observed among schools, the chi-square test showed no statistically significant association between school name and level of knowledge ($\chi^2 = 4.91$, $p = 0.297$).

Table 6 Association between Level of Knowledge and Year of Study (n = 173)

Year of Study	Poor Knowledge n (%)	Moderate Knowledge n (%)	Good Knowledge n (%)	Total	χ^2	p-value
9th Grade	56 (65.9)	19 (22.4)	10 (11.7)	85	3.98	0.136
10th Grade	47 (53.4)	25 (28.4)	16 (18.2)	88		
Total	103	44	26	173		

Table 6 presents the association between the level of knowledge and year of study of the participants. Among students of 9th grade, the majority had poor knowledge (65.9%), while 22.4% had moderate knowledge and 11.7% had good knowledge. In comparison, among 10th grade students, 53.4% had poor knowledge, followed by 28.4% with moderate knowledge and 18.2% with good knowledge. The chi-square test revealed no statistically significant association between year of study and level of knowledge ($\chi^2 = 3.98$, $p = 0.136$).

DISCUSSION

The discussion focuses on demographic characteristics, overall knowledge regarding Premenstrual Syndrome (PMS), and the association between knowledge and selected demographic variables. In the present study,

most participants were aged 14–15 years (43.9%), followed by 16–17 years (30.6%) and 12–13 years (25.4%). Similar age distributions have been reported in school-based studies conducted among adolescent girls

in South Asia, where mid-adolescence represents the largest proportion due to higher school attendance in secondary classes (Dhingra & Kumar, 2009; Singh et al., 2021).

The participants were drawn from three government girls' high schools, with the highest representation from GGHSS Ghareeb Pura Gujrat (42.8%). Comparable sampling patterns have been observed in Pakistani and Indian studies conducted in public sector schools, ensuring homogeneity in educational exposure and socioeconomic background (Naz et al., 2018; Sharma et al., 2020).

Regarding grade of study, the sample was almost equally distributed between 9th and 10th grades. Similar grade-wise distributions have been reported in studies assessing menstrual and PMS knowledge among adolescents, indicating adequate representation of secondary school students (Rani & Kumari, 2016).

The present study revealed that a majority of participants (59.5%) had poor knowledge regarding Premenstrual Syndrome, while only 15% demonstrated good knowledge. These findings are consistent with numerous studies conducted in developing countries, which reported inadequate awareness and understanding of PMS among adolescent girls (Parveen et al., 2016; Bansal et al., 2019).

A study conducted in Lahore by Naz et al. (2018) reported that more than half of adolescent girls had insufficient knowledge regarding menstrual disorders, including PMS. Similarly, a study from India found that only 18% of adolescent girls had good knowledge of PMS, while the majority held misconceptions regarding its causes and management (Kumar et al., 2016).

In contrast, studies conducted in developed countries have reported higher levels of PMS awareness among adolescents. For example, a study in the United States reported moderate to good knowledge in over 60% of participants, which was attributed to comprehensive school health education and open discussion about reproductive health (Campbell et al., 2019). The comparatively low knowledge levels observed in the present study may be linked to cultural taboos, limited reproductive health education, and lack of structured school-based awareness programs.

Although the present study showed a gradual improvement in knowledge with increasing age, the association between age and knowledge level was not statistically significant ($p = 0.146$). Similar findings were reported by Sharma et al. (2020), who found no significant relationship between age and PMS knowledge among adolescent girls.

This suggests that age alone does not guarantee improved understanding of PMS unless supported by

formal education. However, some studies have reported contradictory findings. A study by Raval et al. (2018) found significantly better knowledge among older adolescents, attributing this improvement to increased exposure and personal experience with menstrual symptoms. The discrepancy may be due to differences in educational content and cultural openness across regions.

The present study found no statistically significant association between school name and level of knowledge ($p = 0.297$), although slight variations in knowledge levels were observed. Similar findings have been reported by Singh et al. (2021), who found that PMS knowledge did not significantly differ among students from different government schools following the same curriculum.

However, studies comparing public and private schools have reported significant differences, with private school students demonstrating better knowledge due to improved health education facilities and extracurricular awareness sessions (Dasgupta & Sarkar, 2008). Since all schools in the present study were government institutions, the lack of significant difference is understandable.

In the present study, 10th grade students showed relatively better knowledge compared to 9th grade students; however, the association was not statistically significant ($p = 0.136$). Similar findings were reported by Parle and Khatoon (2019), who found that advancement in grade did not significantly influence PMS knowledge unless specific reproductive health topics were included in the curriculum.

In contrast, a study by Bansal et al. (2019) reported significantly higher knowledge among senior students, which was attributed to biology education and exposure to health-related topics. The lack of significance in the present study may reflect insufficient emphasis on PMS in the school syllabus.

The findings of the present study indicate that poor knowledge regarding Premenstrual Syndrome is widespread among adolescent girls, regardless of age, school, or grade. Similar conclusions have been drawn in multiple studies across South Asia, emphasizing the urgent need for structured menstrual health education programs (Naz et al., 2018; Sharma et al., 2020).

CONCLUSION

The findings of the present study conclude that the majority of adolescent girls had poor knowledge regarding Premenstrual Syndrome, indicating a significant lack of awareness about its causes, symptoms, and management. Although slightly better knowledge was observed among older students, those in higher grades, and students from certain schools, no

statistically significant association was found between knowledge level and age, school name, or year of study. These results suggest that demographic factors alone do not substantially influence knowledge regarding PMS. Overall, the study highlights the urgent need for structured, school-based educational and awareness programs to improve understanding of Premenstrual Syndrome and promote better menstrual health practices among adolescent girls.

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