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A descriptive study to assess the knowledge regarding Premenstrual Syndrome among late adolescents in selected high school, Namakkal

By

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Abstract

Premenstrual Syndrome (PMS) is a recurrent cyclic symptom complex affecting emotional, behavioural and physical domains in females of reproductive age. Adolescent girls commonly experience PMS but awareness regarding its features remains inadequately explored, especially at school level. ***Aim:*** *To assess the level of knowledge regarding Premenstrual Syndrome among late adolescents studying in a selected high school at Nammakal and to determine its association with selected demographic variables.* ***Materials and Methods:*** *A descriptive research design was employed. A sample of 40 late adolescents was selected through purposive sampling technique. A structured knowledge questionnaire comprising socio-demographic variables and 30 PMS-related items was administered. Data were analysed using descriptive statistics (frequency, percentage, mean, SD) and Chi-square test to assess associations.* ***Results:*** *Majority of participants (75%) had poor knowledge (score 1–10), 25% had average knowledge (11–20) and none demonstrated good knowledge (21–30). The mean knowledge score was 8.70 ± 2.40. A significant association was observed between knowledge level and area of residence ($p<0.05$). Age, gender, family type and religion did not show significant associations ($p>0.05$).* ***Conclusion:*** *The findings indicate inadequate baseline knowledge regarding Premenstrual Syndrome among late adolescents. Strengthening school-based menstrual health education, especially targeted towards rural adolescents, is essential to improve PMS awareness, recognition and self-care practices.*

Keywords: *Premenstrual Syndrome, Late Adolescents, Menstrual Health, Knowledge Assessment, High School Girls.*

INTRODUCTION

Premenstrual Syndrome (PMS) is characterized by recurrent physical, emotional and behavioural symptoms that appear cyclically during the luteal phase of the menstrual cycle and subside shortly after the onset of menstruation. The range of manifestations is wide and includes mood instability, irritability, anxiety, depression, weight gain, breast tenderness, fatigue and headaches.[1] Symptoms vary in frequency and severity across individuals and even within the same individual from cycle to cycle. Some adolescents may also experience overlapping symptoms such as dysmenorrhea at the start of menstruation.

Although PMS is recognized worldwide, its burden remains underestimated, especially in adolescent populations. Several studies have reported substantial prevalence variability, which is largely driven by diagnostic criteria, sample characteristics and cultural perceptions about menstruation.[2] In addition, stress, lifestyle and hormonal fluctuations have been recognised as major modulators of symptom intensity.[3] In many contexts, including India, menstrual problems are commonly kept private, poorly communicated, and not addressed adequately in school health settings. Therefore, adolescent girls often fail to identify PMS as a defined health condition requiring timely knowledge or preventive care.

Inadequate awareness and lack of structured school-based menstrual education further contribute to misconceptions and poor coping practices. Strengthening knowledge during late adolescence is essential, as this is a developmental stage where cognition is matured, health-seeking behaviours begin to form, and long-term attitudes about reproductive health are established. Thus, systematic assessment of baseline knowledge regarding PMS among school-going adolescents

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becomes necessary to identify gaps and guide focused educational interventions.

NEED OF THE STUDY

Premenstrual Syndrome is highly prevalent among adolescents across different populations, yet it continues to remain unaddressed in routine school health programmes. Evidence from national and international studies has reported prevalence ranging from as low as 18.9% to as high as 100% in different regions, highlighting wide heterogeneity influenced by diagnostic tools, sociocultural practices, and lifestyle parameters. In India, studies have reported prevalence around 86%, indicating that PMS affects a substantial proportion of school-going girls.

The most commonly reported symptoms include irritability, anxiety, mood swings, fatigue, back pain, poor concentration, headache, food cravings and abdominal cramps. These symptoms may significantly affect academic performance, social interaction and emotional stability of adolescents. Despite this, PMS is often normalised by families and teachers, resulting in lack of discussion or appropriate counselling.

Late adolescence is a critical period where reproductive health education should be strengthened. Assessing baseline knowledge levels in this population is essential to identify learning gaps. High school settings provide a strategic platform to deliver structured information, as students at this age are capable of understanding physical and mental health changes associated with menstruation.

Therefore, this study becomes necessary to quantify the existing level of knowledge regarding PMS among late adolescents in selected schools in Nammakal. The findings will serve as baseline evidence for designing targeted teaching programmes and awareness interventions to improve menstrual health literacy among adolescents.

OBJECTIVES OF THE STUDY

1. To assess the knowledge score regarding Premenstrual Syndrome among late adolescents in a selected high school at Nammakal.
2. To determine the association between knowledge scores regarding Premenstrual Syndrome and selected demographic variables of late adolescents.

HYPOTHESIS

- **H_0 (Null Hypothesis):** There will be no significant association between knowledge scores on Premenstrual Syndrome and selected demographic variables among late adolescents.
- **H_1 (Research Hypothesis):** There will be a significant association between knowledge scores on Premenstrual Syndrome and selected demographic variables among late adolescents.

METHODOLOGY

A descriptive research design was adopted to evaluate the level of knowledge regarding Premenstrual Syndrome among late adolescents studying in a selected high school at Nammakal. A total of 40 students were selected using a purposive sampling method. Data were gathered using a structured knowledge questionnaire developed by the investigator.

Tool Description

The tool consisted of two sections:

- **Section I:** Socio-demographic profile (age, gender, type of family, religion, and area of residence).
- **Section II:** 30-item structured knowledge questionnaire related to Premenstrual Syndrome.

Data Collection Procedure

After obtaining required permissions, the participants were briefed about the purpose of the study. Written consent was taken. The questionnaire was then administered to the selected sample, and the responses were collected on the same day. Each correct response was scored as one mark; the cumulative score range was classified as:

- 1–10 = Poor knowledge
- 11–20 = Average knowledge
- 21–30 = Good knowledge

Data Analysis

The collected data were analyzed using descriptive and inferential statistics. Frequency, percentage, mean and standard deviation were used to describe participant characteristics and knowledge scores. Chi-square test was used to assess association between knowledge score and selected demographic variables. Significance was interpreted at $p<0.05$.

1. **Demographic Characteristics of Study Participants**

A total of 40 late adolescents participated in the study. Majority (26 subjects, 65%) were 17 years old, while 7 (17.5%) each belonged to 16 years and 18 years & above age groups. Most respondents were males (24 subjects, 60%) and 16 (40%) were females. Regarding family type, 23 (57.5%) came from nuclear families, while 17 (42.5%) lived in joint families. In terms of religion, 22 (55%) were Muslims, 15 (37.5%) were Hindus, 2 (5%) were Christians and 1 (2.5%) belonged to other religion. With respect to area of living, majority (25, 62.5%) resided in rural areas and 15 (37.5%) in urban areas.

This demographic profile indicates that the study population was representative of different socio-cultural backgrounds in the selected school at Nammakal.

TABLE 1. Demographic Characteristics of Study Participants (N = 40)

Demographic Variable	Category	Frequency (n)	Percentage (%)
Age (in years)	16	7	17.5
	17	26	65.0
	18 and	7	17.5

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	above		
Gender	Male	24	60.0
	Female	16	40.0
Type of Family	Nuclear	23	57.5
	Joint	17	42.5
Religion	Hindu	15	37.5
	Muslim	22	55.0
	Christian	2	5.0
	Others	1	2.5
Living Area	Rural	25	62.5
	Urban	15	37.5

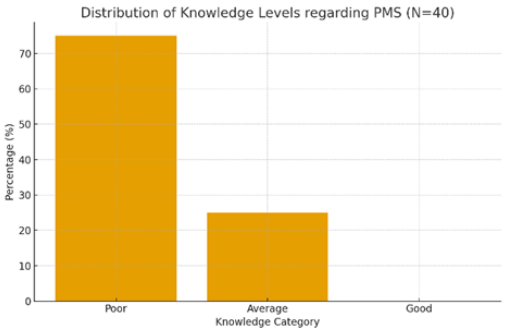
2. Distribution of Knowledge Scores on Premenstrual Syndrome

Knowledge was categorized into three levels: Poor (1-10), Average (11-20), and Good (21-30). The results revealed that, **75.0% (30 subjects)** belonged to the **poor** knowledge category, **25.0% (10 subjects)** showed **average** level knowledge, and **0% (0 subjects)** were found to have **good** knowledge. This indicates that majority of adolescents had very limited understanding towards PMS.

TABLE 2. Knowledge Level Distribution of Participants (N = 40)

Knowledge Category	Score Range	Frequency (n)	Percentage (%)
Poor	1–10	30	75.0
Average	11–20	10	25.0
Good	21–30	0	0.0

Figure 1. Distribution of Knowledge Levels regarding Premenstrual Syndrome among Late Adolescents (N = 40)



This bar chart shows the percentage distribution of subjects according to their knowledge category. Most adolescents (75%) had poor knowledge scores, 25% had average knowledge, and none achieved good knowledge.

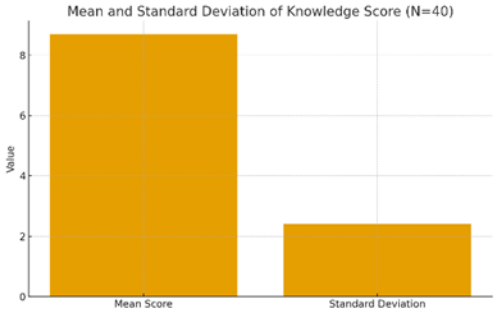
3. Mean Knowledge Scores

The overall mean knowledge score was **8.70 ± 2.40**. This mean score lies within the poor knowledge range, thus statistically confirming low literacy on PMS among participants. This suggests that the education level regarding menstrual health is currently inadequate and requires targeted health teaching intervention.

TABLE 3. Mean and Standard Deviation of Knowledge Scores (N = 40)

Parameter	Mean Score	SD
Pre-test Knowledge Score	8.70	2.40

Figure 2. Mean and Standard Deviation of Knowledge Score among Late Adolescents (N = 40)



This figure compares the mean pre-test knowledge score (8.70) with its standard deviation (2.40), indicating overall low knowledge and moderate variation between participants.

4. Association of Knowledge Score with Demographic Variables

Chi-square test was used to determine association between knowledge scores and demographic variables.

Demographic Variable	Association Status
Age	Not significant ($p > 0.05$)
Gender	Not significant ($p > 0.05$)
Type of family	Not significant ($p > 0.05$)
Religion	Not significant ($p > 0.05$)
Area of Living	Significant ($p < 0.05$)

TABLE 4. Association of Age with Knowledge Score (N=40)

Age (Years)	Poor (1–10)	Average (11–20)	Good (21–30)	Total (n)	Chi-square (χ^2)	p-value
16	5	2	0	7	$\chi^2 = 0.52$	>0.05 (NS)

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17	19	7	0	26		
18 & above	6	1	0	7		

Only **Area of Living** showed a statistically significant association with knowledge scores, indicating that adolescents from urban areas had relatively better awareness compared to rural adolescents. This implies that geographical exposure and access to health information may influence menstrual health knowledge.

TABLE 5. Association of Gender with Knowledge Score (N=40)

Gender	Poor (1–10)	Average (11–20)	Good (21–30)	Total (n)	Chi-square (χ^2)	p-value
Male	18	6	0	24	χ^2 = 0.000	>0.05 (NS)
Female	12	4	0	16		

TABLE 6. Association of Living Area with Knowledge Score (N=40)

Living Area	Poor (1–10)	Average (11–20)	Good (21–30)	Total (n)	Chi-square (χ^2)	p-value
Rural	16	9	0	25	χ^2 = 4.30	<0.05 (**Significant**)
Urban	14	1	0	15		

TABLE 7. Association of Type of Family with Knowledge Score (N=40)

Type of Family	Poor (1–10)	Average (11–20)	Good (21–30)	Total (n)	Chi-square (χ^2)	p-value
Nuclear	18	5	0	23	χ^2 = 0.30	>0.05 (NS)
Joint	12	5	0	17		

Note: NS = Not Significant

TABLE 8. Association of Religion with Knowledge Score (N=40)

Religion	Poor (1–10)	Average (11–20)	Good (21–30)	Total (n)	Chi-square (χ^2)	p-value
Hindu	9	6	0	15	χ^2 = 6.98	>0.05 (NS)
Muslim	19	3	0	22		
Christian	2	0	0	2		
Others	0	1	0	1		

DISCUSSION

The current study provides clear evidence that the overall awareness and understanding of Premenstrual Syndrome among late adolescents in the selected high school at Nammakal is extremely limited. Three out of every four participants demonstrated poor knowledge levels, and none of the participants were able to achieve good knowledge scores. This finding reflects a major gap in the reproductive health education that adolescents receive at school level.

Premenstrual Syndrome is a biologically defined cyclic phenomenon linked to hormonal fluctuations, yet most adolescents are not adequately informed about its physiologic basis. Without adequate biomedical understanding, PMS is frequently perceived as “natural female irritability” or “normal weakness during periods.” Such misconceptions not only trivialize the real symptom burden but also prevent adolescents from using coping strategies or seeking support when necessary.

The significant association between living area and knowledge score suggests that locality and environment play a crucial role in exposure to health information. Adolescents in rural regions may lack access to professional health counselling, menstrual hygiene education campaigns, or digital platforms that offer credible information. Urban students often have more access to schools with health educators, internet awareness content, and peer-group discussions that may help disseminate such knowledge. This rural-urban difference is an important public health signal — menstrual health interventions need stronger targeting in rural populations.

Comparable studies from different states in India report high PMS prevalence but consistently show knowledge deficit among adolescents. Other international studies in middle-eastern and Asian populations echo similar trends, where socio-cultural taboos limit menstruation-related discussions at household and community level. This suggests that PMS knowledge deficit is not an isolated problem of a single school, but a systemic issue observed across diverse regions.

Importantly, the present study indicates that age within late adolescence (16–18 years) does not significantly change the knowledge level. This reinforces that simply growing older in late adolescence does not automatically increase menstrual knowledge without structured educational input. Gender differences were also not significant, which suggests that male adolescents should not be excluded from menstrual health literacy programmes — because boys will grow into partners,

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fathers, and families in future, and must be sensitized to female reproductive health.

Overall, the findings clearly indicate that there is a major need to integrate menstrual education — specifically PMS recognition and management — into routine school health programmes. Education initiatives should aim not only at symptom awareness but also at dismantling stigma surrounding menstrual discussions. Introducing adolescent-friendly teaching modules in high schools has the potential to significantly improve health-seeking behaviour, emotional coping skills, and wellbeing during menstruation among adolescent girls.

CONCLUSION

The study concluded that most late adolescents studying in the selected high school at Nammakal possessed inadequate knowledge regarding Premenstrual Syndrome. The mean score (8.70 ± 2.40) falls within the poor knowledge range, indicating that reproductive health literacy is insufficient in this age group. Among all demographic variables assessed, only the area of residence demonstrated a significant association with knowledge level, suggesting that socio-geographic factors influence awareness. Strengthening educational interventions targeting PMS awareness is therefore essential in school settings to promote early recognition and appropriate coping behaviours among adolescent girls.

LIMITATIONS

1. The study was limited to one selected high school at Nammakal, so results cannot be generalized to entire adolescent populations.
2. Only 40 samples were included, which may restrict statistical power.
3. The study assessed knowledge only; it did not evaluate attitudes or practices related to PMS.
4. Self-reported responses might be influenced by recall bias or misunderstanding of medical terminology.

RECOMMENDATIONS

1. Menstrual health education modules should be implemented in high schools to improve PMS-related literacy among adolescents.
2. Health counselling sessions could be conducted by school health nurses or health educators to support students experiencing PMS symptoms.
3. Future studies should include larger multi-centric samples and explore additional components such as attitudes, symptom severity, lifestyle factors and coping strategies.
4. Awareness campaigns, use of digital platforms, and menstrual health clubs in schools may enhance accessibility and openness to discuss menstrual issues.

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