

# The Effectiveness Of Information Booklet On Knowledge Regarding Pre Menstrual Symptoms And Its Management Among The Adolescent Girls

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## **Abstract:**

*Premenstrual Syndrome (PMS) is a prevalent concern among adolescent girls, often leading to physical and emotional discomfort that can affect daily life and academic performance. This study aimed to evaluate the effectiveness of an information booklet on knowledge regarding premenstrual symptoms and their management among adolescent girls studying in a selected college. A pre-experimental one-group pre-test post-test design was adopted, involving 100 adolescent girls selected through purposive sampling. A structured questionnaire was used to assess knowledge before and after the intervention. The findings revealed a significant improvement in knowledge post-intervention, with the percentage of participants having good knowledge increasing from 42% in the pre-test to 58% in the post-test. Statistical analysis confirmed the effectiveness of the educational booklet, with no significant association found between knowledge levels and demographic variables. The study concludes that structured educational materials can effectively enhance menstrual health literacy among adolescents.*

**Keywords:** Evaluate, Effectiveness, Information Booklet, Knowledge, Premenstrual symptoms, Management, Adolescent girls

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## **INTRODUCTION:**

The endometrium's separation, a physiological alteration in the uterus, causes the obvious bleeding from the uterus during menstruation<sup>1</sup>. The endometrium must produce the ovarian hormones (progesterone and estrogen) and the outflow tract must be patent for menstruation to take place<sup>2</sup>. Between the ages of 11 and 15, the first period begins<sup>3</sup>. After the menstrual cycle begins, it lasts for an average of 28 days and continues cyclically at intervals of 21 to 35 days. Finally, when menopause sets in between the ages of 45 and 50, it stops<sup>4</sup>. Menstruation lasts roughly four to five days, and the typical blood loss is 35 milliliters, with estimates ranging from 20 to 80 milliliters. The first two days of menstruation account for over 70% of all blood loss. Dark-altered blood, mucus, vaginal epithelial cells, endometrial fragments, prostaglandins, enzymes, and bacteria make up the majority of the menstrual discharge<sup>5</sup>. A woman's mood, sensitivity, psychological, and physical issues during ovulation are all part of PMS. About five to ten days prior to the start of menstruation, PMS symptoms appear, and they go away during or by the end of the menstrual flow. It consistently takes place during each menstrual cycle's luteal phase. Progesterone, serotonin, and estrogen are the hormones that cause PMS<sup>6</sup>. Premenstrual dysphoric disorder is the name given to the severe version of PMS<sup>7</sup>. A variety of symptoms define PMS. These include physical, emotional, and water retention-related complaints.

Irritability, depression, mood swings, forgetfulness, restlessness, tearfulness, anxiety, tension, confusion, and anger are examples of affective symptoms. Increased hunger, headaches, exhaustion, and insomnia are examples of physical symptoms<sup>8</sup>. Although PMS is not a life-threatening illness, it can disrupt teenage girls' quality of life and have an impact on their social lives, mental health, and everyday activities<sup>9</sup>. A cross-sectional study carried out in Puducherry, India in 2019 revealed that 62.7% of Indians had PMS. Back discomfort, joint pain, and muscle aches were the most prevalent premenstrual symptoms. The quality of life was lower for teenage girls with PMS than for those without<sup>10</sup>.

## **OBJECTIVE OF THE STUDY**

1. To assess the existing knowledge regarding PMS among the adolescent girls in studying in selected college.
2. To evaluate the effectiveness of information booklet on knowledge regarding PMS among the adolescent girls.
3. To find out the association between pretest knowledge score and selected demographic variables.

## **MATERIALS AND METHODS:**

This study aimed to determine how an information booklet is effective in enhancing adolescent girls' knowledge about premenstrual symptoms and their management. A quantitative research method was employed, which allowed for numerical measurement of knowledge levels before and after the intervention using self-structured questionnaires. The study used a pre-experimental, one-group pre-test post-test design, ideal for comparing changes in knowledge in the same group before and after receiving the educational content.

The information booklet served as the independent variable, along with several background factors such as age, family structure, and menstrual history. The dependent variable was the knowledge score reflecting understanding of premenstrual symptoms and how to manage them. The study population included adolescent girls enrolled in a chosen college who had reached menarche and were both available and willing to participate during the data collection period.

A sample of 100 girls was chosen through a purposive non-probability sampling method. Participants were included based on criteria such as being post-menarche, currently attending the selected college, capable of reading the study material, and consenting to participate. Those who were absent during data collection, had prior formal education on PMS, or had psychological difficulties were excluded.

The research tool was a self-structured questionnaire developed after reviewing relevant literature and consulting subject experts. It was divided into two parts: Section A Socio-Demographic Data, while Section B Self Structure Knowledge Questionnaires. Before the main study, a pilot study was conducted on a small, similar group to evaluate the clarity, reliability, and appropriateness of the tool and the data collection process.

Data collection took place in three distinct stages. First, a pre-test was conducted to assess initial knowledge levels. This was followed by distribution and explanation of the information booklet. After seven days, a post-test using the same questionnaire was administered to measure any improvement in knowledge. Ethical clearance was obtained in advance, and written informed consent was collected from all participants.

The collected data were analysed using both descriptive and inferential statistics. Frequencies, percentages, mean values, and standard deviations were used to summarize participant characteristics and knowledge levels. The paired t-test was used to assess the statistical difference between pre-test and post-test scores, while chi-square analysis helped explore relationships between knowledge scores and selected demographic factors.

This well-structured methodology ensured that the study was conducted in a valid, reliable, and ethical manner. The overall process was designed to accurately assess the impact of the information booklet and contribute evidence on the effectiveness of educational tools in promoting adolescent girls' reproductive health knowledge.

## **RESULTS:**

1. Frequency and percentage distribution of demographic variable of knowledge regarding premenstrual symptoms and its management among the adolescent girls

The present study focused on adolescent girls aged between 17 and 19 years. Among them, the majority (62%) were 19 years old, followed by 25% aged 18, and 13% aged 17. In terms of family structure, 57% of the participants belonged to nuclear families, while 43% were from joint families. Regarding maternal education, 44% of mothers were graduates, 43% were undergraduates, and 13% held postgraduate qualifications. For fathers, 54% were graduates, 25% were undergraduates, and 21% had completed post-graduation. The occupational status of mothers showed that 59% were engaged in unspecified jobs, 22% were teachers, 11% were in business, and 8% worked in the medical field. Fathers' occupations included business (48%), other unspecified professions (32%), teaching (13%), and the medical profession (7%). When examining household income, 38% of families earned between ₹10,000–30,000, 32% earned ₹31,000–60,000, and 30% had incomes above ₹61,000. Dietary habits revealed that 67% of participants were vegetarians, 27% followed a mixed diet, and 6% were non-vegetarians. Menstrual patterns showed that 39% experienced menstruation for 4–5 days, 27% for 3–4 days, 25% for 5–6 days, and 9% for more than 6 days. Additionally, 73% of the girls reported having a menstrual cycle of 21–28 days, 15% had cycles longer than 29 days, and 12% had cycles shorter than 21 days. Residential distribution was nearly equal, with 51% from rural areas and 49% from urban areas. Regarding the impact of PMS on mental health, 38% believed it did affect them, 42% felt it didn't, and 20% were unsure. In terms of physical

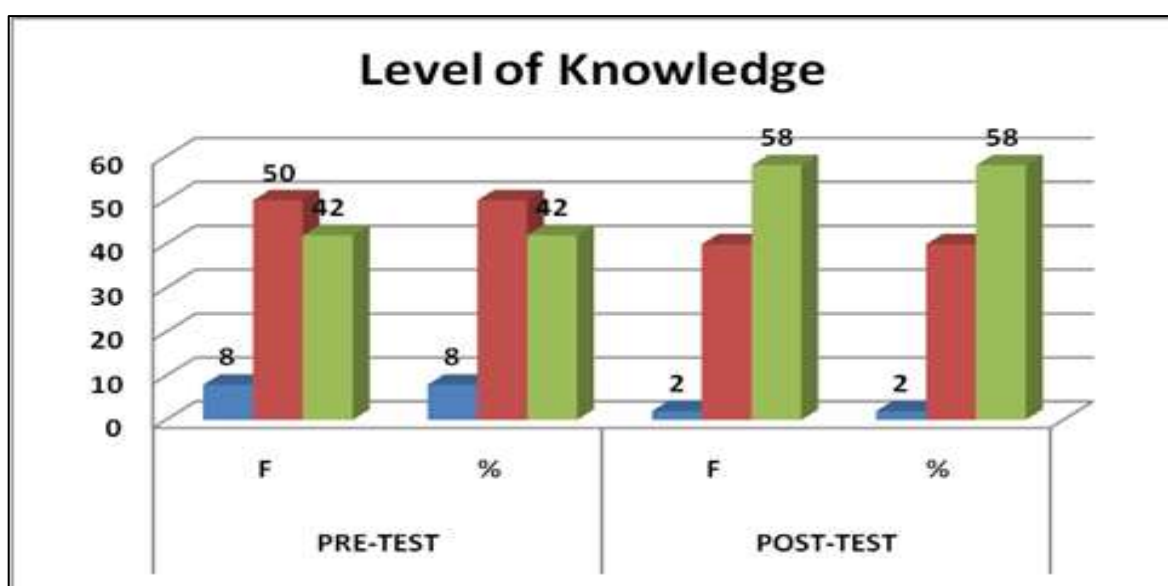
activity, 47% had a moderate activity level, 39% were active, and 14% were sedentary. The age at menarche was reported as 14–17 years by 58% of participants, 10–13 years by 24%, and 15–19 years by 18%. Regarding living arrangements, 59% lived at home, 30% in hostels, and 11% as paying guests. Finally, a majority (89%) of participants were Hindus, with 6% Muslims and 5% Christians.

Sr. No	Demographic Data	Category	Frequency	Percentage
			F	%
1	Age	17 years	13	13
		18 years	25	25
		19 years	62	62
2	Family Pattern	Nuclear Family	57	57
		Joint Family	43	43
3	Education of Mother	Under-graduation	43	43
		Graduation	44	44
		Post-graduation	13	13
4	Education of Father	Under-graduation	25	25
		Graduation	54	54
		Post-graduation	21	21
5	Occupation of Mother	Business	11	11
		Teacher	22	22
		Medical Profession	8	8
		Other	59	59
6	Occupation of Father	Business	48	48
		Teacher	13	13
		Medical Profession	7	7
		Other	32	32
7	Monthly income of Parents	10,000 – 30,000	38	38
		31,000 – 60,000	32	32
		61,000 & Above	30	30
8	Diet Pattern	Vegetarian	67	67
		Non - Vegetarian	6	6
		Mixed	27	27
9	Duration of menstruation	3-4 days	27	27
		4-5 days	39	39
		5-6 days	25	25
		More than 6 day	9	9
10	Menstrual cycle	Less than 21 days	12	12
		21 - 28 days	73	73
		More than 29 days	15	15
11	Place of residence	Rural	51	51
		Urban	49	49
12	Do you think that PMS symptoms affect to your mental health?	Yes	38	38
		No	42	42
		May be	20	20

13	Physical activity	Sedentary	14	14
		Moderate	47	47
		Active	39	39
14	Age at menarche (First Period)	10 - 13 Year	24	24
		14- 17 Year	58	58
		15 - 19 Year	18	18
15	Nature of stay	Home	59	59
		Hostel	30	30
		Paying Guest	11	11
16	Religion	Hindu	89	89
		Christians	5	5
		Muslim	6	6
		Others	0	0

2. Frequency and percentage distribution of knowledge regarding premenstrual symptoms and its management among the adolescent girls.

Level of Knowledge	PRE-TEST		POST-TEST	
	F	%	F	%
Poor Knowledge score (0- 10 Score)	08	08	02	02
Average Knowledge score (11-20 score)	50	50	40	40
Good Knowledge score (21-30 score)	42	42	58	58



The knowledge level of adolescent girls regarding premenstrual symptoms and their management was assessed before and after an intervention. In the pre-test, 8% of participants demonstrated poor knowledge (scoring between 0-10), 50% had average knowledge (scores 11-20), and 42% had good knowledge (scores 21-30).

After the intervention, the post-test results revealed a noticeable improvement. Only 2% of participants remained in the poor knowledge category, indicating a significant reduction. The percentage of those with average knowledge slightly decreased to 40%, while those achieving good knowledge scores increased to 58%.

These findings clearly suggest that the intervention was effective in enhancing the knowledge of adolescent girls regarding premenstrual symptoms and their management.

3. Presents the association between adolescent girls' pre-test knowledge regarding premenstrual symptoms and its management with various demographic variables using chi-square analysis.

The present study assessed the knowledge regarding premenstrual symptoms and their management among adolescent girls and examined its association with selected demographic variables. The findings revealed that a significant proportion of participants initially had average knowledge, with only a few demonstrating good knowledge in the pre-test. However, following the educational intervention, there was a marked improvement, with the majority of girls shifting to the good knowledge category in the post-test, indicating the effectiveness of structured awareness programs in enhancing premenstrual health understanding. Importantly, statistical analysis showed no significant association between pre-test knowledge scores and any demographic variables, as all p-values were greater than 0.05. Age, parental education and occupation, monthly income, dietary patterns, menstrual characteristics, residence, physical activity, perception of PMS impact, age at menarche, nature of stay, and religion all failed to show significant relationships with knowledge levels. These findings suggest that knowledge gaps regarding premenstrual symptoms are widespread and not strongly influenced by demographic background, highlighting the need for inclusive health education initiatives targeting all adolescent girls.

Sr. No	Demo-graphic Data	Category	Pre-test level of knowledge			Chi-Value	df	P-value
			Poor	Average	Good			
1	Age	17 years	1	7	5	1.949	4	0.745
		18 years	1	15	9			
		19 years	6	28	28			
2	Family Pattern	Nuclear Family	6	30	21	2.081	2	0.354
		Joint Family	2	20	21			
3	Education of Mother	Under-graduation	4	21	18	1.088	4	0.896
		Graduation	3	21	20			
		Post-graduation	1	8	4			
4	Education of Father	Under-graduations	3	13	9	2.423	4	0.659
		Graduation	3	25	26			
		Post-graduation	2	12	7			
5	Occupation of Mother	Business	1	7	3	5.061	6	0.536
		Teacher	1	12	9			
		Medical Profession	0	6	2			
		Other	6	25	28			
6	Occupation of Father	Business	3	24	21	7.889	6	0.246
		Teacher	0	7	6			
		Medical Profession	0	6	1			
		Other	5	13	14			
7	Monthly income of Parents	10,000 - 30,000	5	17	16	2.673	4	0.614
		31,000 - 60,000	1	17	14			
		61,000 & above	2	16	12			
8	Diet Pattern	Vegetarian	6	34	27	8.231	4	0.083
		Non - Vegetarian	0	6	0			
		Mixed	2	10	15			
9		3-4 days	3	10	14	6.403	6	0.38

	Duration of menstruation	4-5 days	2	25	12			
		5-6 days	2	10	13			
		More than 6 days	1	5	3			
10	Menstrual cycle	Less than 21 days	1	5	6	1.129	4	0.89
		21 - 28 days	5	38	30			
		More than 29 days	2	7	6			
11	Place of residence	Rural	5	21	25	3.265	2	0.195
		Urban	3	29	17			
12	Do you think that PMS symptoms affect to your mental health?	Yes	3	21	14	1.992	4	0.737
		No	3	18	21			
		May be	2	11	7			
13	Physical activity	Sedentary	1	6	7	0.635	4	0.959
		Moderate	4	23	20			
		Active	3	21	15			

14	Age at menarche (First Period)	10 - 13 Year	0	11	13	4.708	4	0.319
		14- 17 Year	7	30	21			
		15 - 19 Year	1	9	8			
15	Nature of stay	Home	5	30	24	1.834	4	0.766
		Hostel	2	13	15			
		Paying Guest	1	7	3			
16	Religion	Hindu	7	45	37	3.27	4	0.514
		Christians	1	3	1			
		Muslim	0	2	4			
		Others	0	0	0			

#### DISCUSSION:

The findings of the study clearly indicate that the information booklet was effective in improving the knowledge of adolescent girls regarding premenstrual symptoms and their management. A significant increase was observed in the number of participants with good knowledge after the intervention, suggesting that structured educational materials can bridge existing gaps in menstrual health awareness. Despite differences in demographic factors such as age, parental education, income, and residence, no significant association was found between these variables and pre-test knowledge levels, highlighting that knowledge deficiencies are widespread across all backgrounds. This reinforces the importance of implementing inclusive, school-based awareness programs to empower adolescent girls with accurate information on PMS, thus promoting better self-care and reducing the stigma around menstrual health.

#### CONCLUSION:

Based on the study findings, it can be concluded that the use of an information booklet significantly enhanced the knowledge of adolescent girls regarding premenstrual symptoms and their management. The marked improvement in post-test scores demonstrates the effectiveness of structured, targeted educational interventions in increasing awareness and understanding among adolescents. Moreover, the absence of a significant association between pre-test knowledge and demographic variables suggests that knowledge gaps exist across all groups, regardless of background. Therefore, the study emphasizes the need for accessible, inclusive health education strategies in schools and colleges to ensure that all adolescent girls are equipped with the necessary knowledge to manage premenstrual symptoms effectively and confidently.

#### DECLARATION:

### **Acknowledgement**

The Researcher would like to express their heartfelt gratitude to all the contributors who helped direct and indirect to the completion of this work.

### **Conflict of Interests**

Authors have decided that no conflict of interest exists.

### **Author Contribution**

Ethical Permission, data collection and data analysis were done by corresponding author. Supervision, guidance and validation were done by secondary Author.

### **Funding**

The Researcher was not funded by internal or external agency; rather it was personal efforts of the author.

### **Consent and Ethical Approval**

**Approval No: PUIECHR/PIMSR/00/081734/82343** Formal ethical approval was received from the institutional ethical committee; informed consent was obtained from participants, and assured of anonymity.

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