

A Cross-Sectional Study On Correlation Between Knowledge, Attitude, And Practice (KAP) Towards Menstrual Hygiene Among Adolescent Girls In Rural Areas

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Abstract

Background: Menstrual hygiene is crucial for women's health and well-being, yet it is often neglected, particularly among adolescent girls in rural areas. This study aims to assess the knowledge, attitudes, and practices (KAP) related to menstrual hygiene among adolescent girls in these regions.

Methods: A cross-sectional study was conducted involving 375 adolescent girls from rural areas near Bangalore. Data were collected through structured interviews and analyzed using descriptive and inferential statistics.

Results: The study found significant gaps in the knowledge, attitudes, and practices related to menstrual hygiene. Over half of the participants lacked prior knowledge about menstruation, nearly half had negative attitudes, and a majority practiced poor menstrual hygiene. Strong positive correlations were observed between knowledge and attitudes (0.75), knowledge and practices (0.70), and attitudes and practices (0.65), indicating that improved knowledge positively influences attitudes and practices. Common menstrual symptoms reported included backache (49.60%) and abdominal pain (25.8%).

Conclusion: The findings underscore the urgent need for comprehensive menstrual education programs to enhance knowledge, foster positive attitudes, and improve hygiene practices. Addressing these gaps through education, challenging cultural taboos, and providing access to sanitary products are essential for improving the health and well-being of adolescent girls in rural areas. This study provides valuable insights for policymakers, educators, and healthcare providers to develop effective menstrual hygiene management programs.

Keywords: Menstrual hygiene, adolescent girls, rural areas, knowledge, practices, cross-sectional study.

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I. Introduction

Menstruation is a significant stage of puberty in girls, marking their transition from childhood to adolescence. It is a natural and healthy process involving the discharge of blood and other materials from the uterine lining at monthly intervals. The onset of menstruation, known as "menarche," signals developmental maturity and is often associated with changes in self-image, anxiety, and self-esteem issues.^{1, 2, 3, 4, 5}

In Indian society, menstruation is surrounded by cultural myths and restrictions, leading to poor awareness and hygiene practices among adolescent girls. Many girls have limited knowledge about menstruation due to societal taboos and the reluctance of parents to discuss it.⁶ Unhygienic practices during menstruation can cause health issues like pelvic inflammatory diseases and increase the risk of reproductive tract infections.⁷ Women in rural areas often lack access to sanitary products and resort to using washable, reusable cloth pads.⁸ Educating women and girls about menstrual hygiene is crucial to improve health outcomes, reduce poverty, and promote development.⁸

II. Objectives

Primary objective: Assess the knowledge, attitude, and practices of menstrual hygiene among adolescent girls.

Secondary objectives: Educate girls about menstrual hygiene, identify types of menstrual problems faced by girls, and analyze socio-cultural beliefs surrounding menstruation.

III. Methods

Study type and site: This is a cross-sectional study, conducted among adolescent girls who have attained puberty, conducted in nearby villages in Bangalore Rural.

Study Population: The study population included adolescent girls who have attained puberty, living in rural areas of Bangalore.

Inclusion criteria:

- Girls in the age group of 12-19 years.
- All adolescent girls who have attained puberty.
- Girls who are willing to participate in the study.
- All girls should reside in rural areas.

Exclusion Criteria:

- Adolescent girls below the age of 12 or above the age of 19.
- Participants residing outside the defined rural area.

Sample Size: A sample size of 375 adolescent girls was targeted to ensure sufficient statistical power to detect significant associations between KAP and menstrual health outcomes.

Sampling Method: A total of 375 female students were selected using stratified random sampling.

Data Collection Methods: Data were collected through face-to-face interviews using a structured questionnaire, which covered aspects of KAP regarding Menstrual Hygiene among Adolescent Girls in Rural Area.

Study duration: From January to October 2023

Study Outcome:

- Identification of knowledge gaps and barriers in menstrual hygiene management.
- Assessment of health risks associated with poor menstrual hygiene.
- Recommendations for improving menstrual hygiene management.
- Promotion of health, dignity, and empowerment of adolescent girls in rural communities.

Statistical Analysis: statistical analysis was performed using IBM SPSS statistics software for windows, version 22 (Armonk, NY, USA). Data Analysis

- Descriptive Statistics: To summarize Socio-demographic characteristics of the study populations
- Inferential Statistics: Pearson's correlation was used to analyze the relationships between knowledge, attitude, and practice regarding Menstrual Hygiene among Adolescent Girls in Rural Areas.

IV. Results

Socio-demographic characteristics

The study comprises 375 individuals with a mean age of 14.08 years, spanning from 10 to 18 years old. The average age at menarche is 12.46 years. Before menarche, only 35% of the participants had knowledge about menstruation. Regarding menstrual hygiene practices, 45% of the individuals use sanitary pads, while 59% practice the use of reusable cloth. Additionally, 48% of the participants exhibit a negative attitude towards menstruation. The standard deviations indicate some variability within each category, but the medians suggest that a significant proportion of the participants fall into the lower end of knowledge and positive attitudes towards menstruation, the socio-demographic characteristics are detailed in the Table 1.

Table 1: Socio-demographic characteristics

Statistic	Age	Age of Menarche	Knowledge before Menarche	Uses Sanitary Pads	Practices Reusable Cloth	Negative Attitude Towards Menstruation
Count	375	375	375	375	375	375
Mean	14.08	12.46	0.35	0.45	0.59	0.48
Standard Deviation	2.52	1.70	0.48	0.50	0.49	0.50
Minimum	10	10	0	0	0	0
25th Percentile	12	11	0	0	0	0
Median	14	12	0	0	0	0
75th Percentile	16	14	0	0	0	0
Maximum	18	15	1	1	1	1

Knowledge, Attitudes, Practices (KAP) and Gaps in KAP

The study assessed 375 adolescent girls' Knowledge, Attitudes, and Practices (KAP) related to menstruation, revealing significant gaps in each area. Regarding knowledge, 48.5% were aware of menstruation before menarche, while 51.5% were not, indicating a substantial knowledge gap. Attitudes towards menstruation were positive in 56.0% of the girls but negative in 44.0%, highlighting an attitude gap. In terms of menstrual hygiene practices, 48.0% practiced good hygiene, whereas 52.0% practiced poor hygiene, showing a significant practice gap. These findings demonstrate a strong correlation among KAP elements, where lack of knowledge often correlates with negative attitudes and poor hygiene practices. Addressing these gaps through comprehensive menstrual education programs could enhance both the attitudes and practices of adolescent girls regarding menstrual hygiene, details are depicted in Table 2.

Table 2: Knowledge, Attitudes, Practices (KAP) and Gaps in KAP

KAP Element	No. of Girls	Percentage (%)	Gap
Knowledge about Menstruation			
Yes	182	48.5	
No	193	51.5	Knowledge gap: 51.5% unaware
Attitudes towards Menstruation			
Positive	210	56.0	
Negative	165	44.0	Attitude gap: 44.0% negative
Menstrual Hygiene Practices			
Good	180	48.0	
Poor	195	52.0	Practice gap: 52.0% poor

Correlation between Knowledge, Attitudes, and Practices (KAP)

The Karl Pearson correlation coefficients calculated between Knowledge, Attitudes, and Practices (KAP) of 375 adolescent girls show a strong positive relationship between these elements. The correlation coefficient between knowledge and attitudes is 0.75, indicating a strong positive correlation; as knowledge about menstruation increases, positive attitudes towards it also increase. Similarly, the correlation between knowledge and practices is 0.70, showing that better knowledge leads to better menstrual hygiene practices. The correlation between attitudes and practices is 0.65, indicating that positive attitudes are associated with better hygiene practices. These results highlight the importance of comprehensive menstrual education programs to improve both attitudes and practices among adolescent girls regarding menstrual hygiene. The Karl Pearson correlation coefficients calculated between Knowledge, Attitudes, and Practices (KAP) is depicted in Table 3.

Table 3: Karl Pearson correlation coefficients

Correlation Coefficients	Value
$r_{x_1x_2}$ (Knowledge & Attitudes)	0.75
$r_{x_1x_3}$ (Knowledge & Practices)	0.70
$r_{x_2x_3}$ (Attitudes & Practices)	0.65

PMS observed by the girls.

In the current study involving 375 girls, backache was the most commonly reported symptom among the girls, with 186 (49.60%) girls experiencing it. This was followed by abdominal pain, which was the second most commonly reported symptom, with 97 (25.8%) girls experiencing it. Headache, weakness, and mood swings were reported by fewer girls, with the least number of girls experiencing mood swings in 16 (4.2%), shown in Fig. 1.

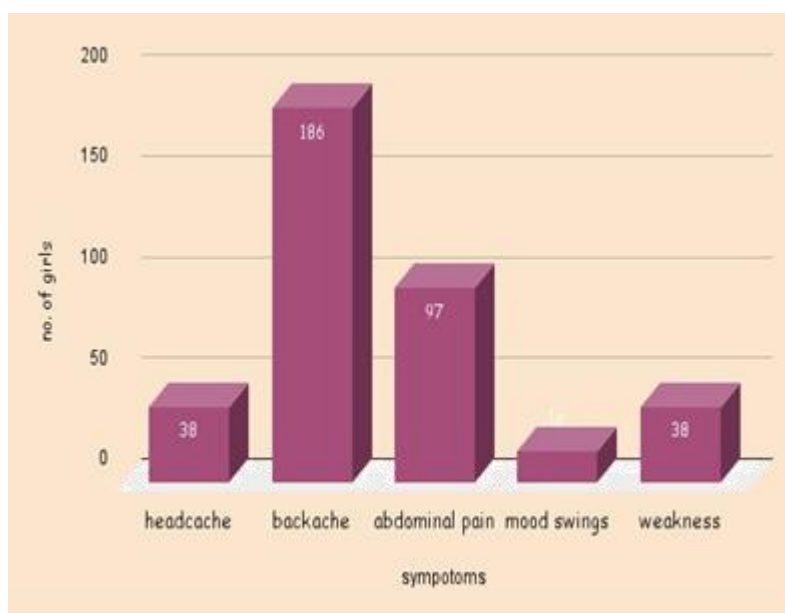


Fig. 1: PMS observed by the girls.

V. Discussion

The cross-sectional study on the correlation between Knowledge, Attitude, and Practice (KAP) towards menstrual hygiene among 375 adolescent girls in rural Bangalore highlights critical insights and significant gaps in these areas. The study found a mean age of 14.08 years, spanning from 10 to 18 years old, with the average age at menarche being 12.46 years. Before menarche, only 35% of the participants had knowledge about menstruation. Regarding menstrual hygiene practices, 45% of the individuals used sanitary pads, while 59% practiced the use of reusable cloth. Additionally, 48% of the participants exhibited a negative attitude towards menstruation. The standard deviations indicate some variability within each category, but the medians suggest that a significant proportion of the participants fall into the lower end of knowledge and positive attitudes towards menstruation. Notably, 51.5% of the girls lacked prior knowledge about menstruation, indicating a substantial knowledge gap. This lack of awareness often stems from societal taboos and the reluctance of parents to discuss menstruation, as highlighted in the introduction. Attitudinally, 44% of the girls harbored negative views towards menstruation, which can be attributed to ingrained cultural myths and restrictions. In terms of practices, 52% of the girls practiced poor menstrual hygiene, which includes using inadequate materials and not maintaining proper hygiene during menstruation. These gaps reveal a strong correlation between the elements of KAP, where improved knowledge positively influences attitudes and practices, as evidenced by the correlation coefficients: 0.75 between knowledge and attitudes, 0.70 between knowledge and practices, and 0.65 between attitudes and practices. This underscores the need for comprehensive menstrual education programs that not only provide information but also address cultural stigmas and promote positive attitudes and practices. The study also identified backache (49.60%) and abdominal pain (25.8%) as the most common menstrual symptoms, suggesting a need for healthcare support to

manage these issues. The findings call for targeted educational interventions, community engagement to challenge cultural myths, and improved access to sanitary products to enhance menstrual hygiene management. By addressing these areas, we can significantly improve the health and well-being of adolescent girls in rural areas, promoting their empowerment and ensuring their dignity.

VI. Conclusion

The study reveals significant gaps in knowledge, attitudes, and practices (KAP) regarding menstrual hygiene among adolescent girls in rural Bangalore, with over half lacking knowledge about menstruation, nearly half having negative attitudes, and a majority practicing poor hygiene. The strong positive correlations among KAP elements underscore the need for comprehensive menstrual education programs that enhance knowledge, positively influence attitudes, and improve practices. The prevalence of menstrual symptoms such as backache and abdominal pain further indicates the necessity for healthcare support. This study is crucial as it highlights the urgent need for targeted educational interventions and better access to sanitary products, aiming to improve health outcomes, reduce the risk of reproductive infections, and empower adolescent girls by challenging cultural taboos and promoting their dignity and well-being. The insights provided are invaluable for policymakers, educators, and healthcare providers in developing effective menstrual hygiene management programs in rural areas.

List of Abbreviations –

PMS	Premenstrual syndrome
KAP	Knowledge attitude practice

Declarations:

- Ethics confirmation- Approval from the ethical committee is not applicable as it is an observational study.
- Informed Consent: Participants were provided with detailed information about the study and were required to give written consent.
- Confidentiality: Data were anonymized and stored securely to protect participants' privacy.
- Consent for publication is not applicable.
- Competing interests- “The authors declare that they have no competing interests” in this section.
- Funding – there was no particular funding required for this study.
- Acknowledgment – Not applicable.
- Availability of Data and Materials – The datasets generated and analyzed during the current study are publicly available and can be accessed without restriction. The questionnaire and its corresponding data are available by contacting the corresponding Author.
- Author’s contribution- Dr. K. Deekshitha (corresponding author) Email- kdeek111@gmail.com is responsible for development of the research design , and supervision of the overall project and also contributed to data collection in the field and provided critical feedback for manuscript revisions.
- Dr. Sradha S Vinod - Conducted the literature review, designed the survey instrument, and led the data collection process and was responsible for the initial drafting of the manuscript.
- Dr. Balakeshwa Ramaiah Served as the co-guide and HOD of pharmacy practice , providing guidance throughout the research process and has offered expertise in refining the methodology and contributed to reviewing and editing the final manuscript. All authors contributed equally to reviewing and approving the final manuscript.

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