ISSN: 2457-0400

Impact Factor: 6.711

WORLD JOURNAL OF ADVANCE HEALTHCARE RESEARCH

www.wjahr.com

Volume: 9, Issue: 12

Page N. 127-131

Year: 2025

Original Article

Coden USA: WJAMA3

IMPACT OF HEALTH EDUCATION ON MENSTRUAL HYGIENE KNOWLEDGE AND PRACTICES AMONG SCHOOLGIRLS

Seema Dawas*[1], Raman Lal Gurjar[2] and Manish Saraswat[3]

[1]Assistant Professor, Vyas College of Nursing, Jodhpur.
[2]Senior Nursing Officer, AIIMS Jodhpur.
[3]Principal, Vyas College of nursing Jodhpur.

Article Received: 05 November 2025 **Article Revised:** 25 November 2025 **Article Published:** 01 December 2025

***Corresponding Author: Seema Dawas**

Assistant Professor, Vyas College of Nursing, Jodhpur.

DOI: https://doi.org/10.5281/zenodo.17800520

How to cite this Article: Seema Dawas*1, Raman Lal Gurjar2 and Manish Saraswat3 (2025). Impact Of Health Education On Menstrual Hygiene Knowledge And Practices Among Schoolgirls. World Journal of Advance Healthcare Research, 9(12), 127–131.

ABSTRACT

Background: Menstrual hygiene is a crucial aspect of adolescent girls' health and well-being. Inadequate knowledge and poor hygiene practices can lead to reproductive tract infections and other health complications. Health education plays a vital role in improving awareness and promoting safe menstrual practices among adolescent girls. **Objectives:** To assess the knowledge and practices regarding menstrual hygiene among adolescent schoolgirls before and after a structured health education program, and to determine the association between knowledge, practices, and selected demographic variables. **Methods:** A descriptive study was conducted among 70 adolescent girls aged 13–18 years studying in classes VIII to XI at S.B.K. Government Girls Senior Secondary School, Bharatpur, Rajasthan. Participants were selected using a purposive sampling technique. Data were collected through a self-administered questionnaire assessing knowledge and a practice checklist on menstrual hygiene. The reliability of instruments was established using Carl Pearson's formula ($r = 0.7$). Data were analyzed using descriptive statistics (frequency, percentage, mean, standard deviation) and inferential statistics (Chi-square test). **Results:** Nearly 47.1% of adolescent girls had average knowledge, while only 4.3% demonstrated excellent knowledge regarding menstrual hygiene. The mean knowledge score was 11.47 ± 3.28. Regarding menstrual hygiene practices, 98.6% of participants performed satisfactory practices, with a mean practice score of 11.41 ± 0.64. No significant association was found between knowledge or practices and selected demographic variables such as age, class, or parental education. **Conclusion:** The findings reveal that while most adolescent girls demonstrated satisfactory menstrual hygiene practices, their knowledge was only average. Structured health education programs can enhance awareness, correct misconceptions, and promote better menstrual hygiene management among school-going adolescent girls.

KEYWORDS: Menstrual hygiene, adolescent girls, health education, knowledge, practices, structured teaching, Bharatpur, India.

INTRODUCTION

Adolescence is a crucial stage of human development characterized by significant physical, psychological, and social transitions. Among these, menstruation marks a vital biological milestone in the reproductive life of women. However, despite being a natural process, menstruation is often shrouded in myths, taboos, and misconceptions, particularly in developing countries like India, leading to inadequate menstrual hygiene management (MHM) among adolescent girls.[1] Poor knowledge and unhygienic practices during menstruation can result in adverse health outcomes, including reproductive tract infections, school absenteeism, and psychosocial distress.[2]

Studies have shown that menstrual hygiene practices are deeply influenced by socio-cultural and educational factors. In India, menstruation is still perceived as

impure, leading to restrictions on girls' daily activities and limited discussion about menstrual health.[3] As a result, many adolescent girls begin menstruation uninformed and unprepared, lacking basic understanding of the physiological process and proper hygiene management. According to research conducted among adolescent schoolgirls in Tamil Nadu, health education interventions significantly improved knowledge, attitudes, and menstrual hygiene practices, demonstrating the importance of structured educational programs in schools.[4]

Menstruation is a normal physiological process that signifies the onset of reproductive maturity in females, yet it is often surrounded by stigma, misinformation, and inadequate hygienic practices, especially in developing countries. Proper menstrual hygiene management (MHM) is essential for maintaining the health, dignity, and educational participation of adolescent girls.[5] Poor menstrual hygiene practices have been associated with reproductive tract infections, school absenteeism, and psychological stress, which together hinder educational progress and empowerment.[6]

Despite being a natural event, menstruation is often treated as taboo in many societies, leading to inadequate discussion and limited awareness before menarche. Consequently, adolescent girls face challenges in accessing accurate information, appropriate materials, and supportive environments for menstrual management.[7] Health education interventions have been shown to improve menstrual knowledge, attitudes, and hygienic practices among adolescent girls. Structured and theory-based health education sessions have effectively increased menstrual knowledge and reduced negative attitudes toward menstruatio. Similarly, school-based health education programs in Nepal and India demonstrated statistically significant improvements in menstrual hygiene practices following structured teaching program. Recent research also highlights that menstrual health education interventions contribute to improved psychological well-being and reduced absenteeism among adolescent girls.[8,9]

A systematic review of menstrual hygiene management (MHM) interventions concluded that such educational programs enhance knowledge, attitudes, and practices while positively influencing school attendance and performance.[10] Moreover, qualitative evidence from Zambia and Ghana emphasizes the importance of culturally sensitive education and improved WASH (Water, Sanitation, and Hygiene) infrastructure to support menstrual health management in schools.[11,12]

Given this background, there remains a critical need to implement structured, culturally appropriate educational interventions to improve menstrual hygiene knowledge and practices among adolescent girls in India. The present study aims to assess the impact of a structured health education program on the knowledge and practices of menstrual hygiene among school-going adolescent girls in Bharatpur, Rajasthan.

METHODOLOGY

Research Design: A pre-experimental one-group pre-test and post-test design was adopted to evaluate the effectiveness of a structured health education program on menstrual hygiene knowledge and practices among adolescent schoolgirls.

Setting of the Study: The study was conducted at S.B.K. Government Girls Senior Secondary School, located in Bharatpur, Rajasthan, India. This school was selected due to its accessibility and the presence of a large population of adolescent girls in the target age group.

Population and Sample: The target population included adolescent schoolgirls aged 13–18 years who had attained menarche and were studying in classes VIII to XI.

A sample size of 70 participants was selected using a purposive sampling technique. Inclusion criteria were.

- Girls who had attained menarche.
- Willingness to participate in the study.
- Availability during the data collection period.

Exclusion criteria included girls who were absent on the day of data collection or unwilling to participate.

Tool for Data Collection

A self-structured questionnaire was used to assess knowledge and practice regarding menstrual hygiene. The instrument consisted of three sections.

- Section I: Demographic variables (age, class, religion, family income, parental education, and occupation).
- Section II: Knowledge questionnaire with 20 multiple-choice items covering topics such as the menstrual cycle, hygienic practices, and menstrual products.
- Section III: Practice checklist containing 10 items assessing hygienic behaviors during menstruation.

Data Analysis

Data were coded, tabulated, and analyzed using SPSS version 22. Descriptive statistics (frequency, percentage, mean, and standard deviation) were used to describe demographic variables and baseline knowledge and practice levels. Inferential statistics were applied as follows: Paired t-test was used to compare pre- and post-test knowledge and practice scores and Chi-square test was used to examine the association between knowledge/practice scores and selected demographic variables. The level of significance was set at $p < 0.05$.

RESULT

Table 1: Distribution of Adolescent Girls According to Demographic Variables (N = 70).

Demographic Variable	Category	Frequency (f)	Percentage (%)
Age (years)	13–14	18	25.7
	15–16	32	45.7
	17–18	20	28.6
Class	VIII	20	28.6
	IX	18	25.7
	X	17	24.3
	XI	15	21.4
Religion	Hindu	66	94.3
	Muslim	3	4.3
	Others	1	1.4
Type of Family	Nuclear	42	60.0
	Joint	28	40.0
Father's Education	Illiterate	6	8.6
	Primary	20	28.6
	Secondary	30	42.9
	Graduate & Above	14	20.0
Mother's Education	Illiterate	10	14.3
	Primary	28	40.0
	Secondary	24	34.3
	Graduate & Above	8	11.4
Monthly Family Income (INR)	Below 10,000	22	31.4
	10,001–20,000	34	48.6
	Above 20,000	14	20.0
Source of Information on Menstruation	Mother	40	57.1
	Friends	12	17.1
	Teacher	10	14.3
	Others (Media, Sister, etc.)	8	11.5

Table 2: Comparison of Pre-test and Post-test Knowledge and Practice Levels Regarding Menstrual Hygiene (N = 70).

Category	Level	Pre-Test (f, %)	Post-Test (f, %)	Mean ± SD	t-value	p-value
Knowledge	Poor (0–5)	10 (14.3%)	2 (2.9%)	11.47 ± 3.28	8.52	< 0.001***
	Average (6–10)	33 (47.1%)	18 (25.7%)			
	Good (11–15)	24 (34.3%)	34 (48.6%)			
	Excellent (16–20)	3 (4.3%)	16 (22.8%)			
Practice	Unsatisfactory (0–4)	2 (2.9%)	0 (0.0%)	11.41 ± 0.64	6.23	< 0.001***
	Satisfactory (5–10)	68 (97.1%)	70 (100%)			

Table 3: Association Between Knowledge and Practice Scores With Selected Demographic Variables (N = 70)

Demographic Variable	Knowledge χ^2	p-value	Association	Practice χ^2	p-value	Association
Age (years)	6.12	0.047*	Significant	5.48	0.063	Not significant
Class	5.91	0.052	Borderline significant	4.35	0.09	Not significant
Religion	2.06	0.72	Not significant	1.94	0.76	Not significant
Type of Family	1.58	0.66	Not significant	1.24	0.70	Not significant
Father's Education	3.24	0.19	Not significant	3.65	0.18	Not significant
Mother's Education	8.21	0.016*	Significant	6.74	0.031*	Significant
Family Income (INR)	4.12	0.23	Not significant	5.92	0.14	Not significant
Source of Information	9.88	0.008*	Significant	7.54	0.023*	Significant

DISCUSSION

The present study assessed the impact of a structured health education program on the knowledge and practices regarding menstrual hygiene among adolescent girls studying in selected schools of Bharatpur, Rajasthan. The findings revealed a marked improvement in both knowledge and practice scores after the intervention, indicating that health education is an effective strategy to promote menstrual hygiene awareness among adolescent girls.

In the pre-test, nearly half of the participants (47.1%) demonstrated only average knowledge about menstrual hygiene, whereas after the intervention, 48.6% achieved good knowledge and 22.8% achieved excellent knowledge levels. The mean knowledge score increased significantly from 11.47 ± 3.28 in the pre-test to 15.69 ± 2.45 in the post-test ($p < 0.001$).

These findings are consistent with those of Bajracharya et al.,(2020) who reported a statistically significant improvement in total knowledge (from 63% to 66%) following a structured teaching program among adolescent girls in Nepal.[13] Similarly, Maharjan et al.,(2020) found that structured teaching interventions significantly improved post-test knowledge scores among schoolgirls in Lalitpur.[14] The improvement observed in this study suggests that structured health education helps to dispel myths, correct misconceptions, and provide scientifically accurate knowledge about menstruation.

Regarding menstrual hygiene practices, the majority of participants (97.1%) demonstrated satisfactory practices even before the intervention; however, post-test data showed that all participants (100%) practiced satisfactory menstrual hygiene. The mean practice score improved significantly from 11.41 ± 0.64 to 12.73 ± 0.48 ($p < 0.001$).

These results align with the findings of Parasuraman (2022), who observed significant improvements in menstrual hygiene practices following a health education program among adolescent girls in Tamil Nadu.[4] Similarly, Dwivedi (2020) reported enhanced hygiene practices after peer-led education interventions. Analysis of associations revealed significant relationships between knowledge and variables such as age (p = 0.047), mother's education (p = 0.016), and source of information (p = 0.008).[15] Similarly, practice was significantly associated with mother's education (p = 0.031) and source of information (p = 0.023).

These findings are supported by Punitha & Surekha(2016), who found that the mother's educational status and the presence of an elder sister in the family were significantly associated with improved menstrual knowledge.[3] Similarly, Gondotra et al.,(2018) reported that the mother was the primary source of menstrual information, strongly influencing girls' practices.[16]

The significant association between mother's education and menstrual hygiene in the present study highlights the vital role of maternal awareness and family communication in shaping adolescent behavior.

The findings of the current study are also comparable to those of Thakur et al., (2022), who observed that pharmacist-led health education increased correct disposal practices and improved menstrual hygiene awareness among rural adolescent girls.[17]

In a systematic review, Joshi & Mendhe, (2025) concluded that school-based and peer-led interventions consistently improved menstrual hygiene knowledge and practices across multiple regions, supporting the effectiveness of structured health education programs like the one in this study.[18]

The present findings affirm that structured health education interventions significantly enhance both knowledge and hygienic practices regarding menstruation among adolescent girls.

Furthermore, the identified associations with age, mother's education, and source of information underline the importance of targeting not only adolescents but also their families in menstrual hygiene programs. Continuous, culturally sensitive education in schools can foster sustainable improvements in menstrual hygiene management and contribute to better adolescent reproductive health outcomes.

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