Section: Community Medicine

Original Research Article

A STUDY ON HOW A PLANNED EDUCATIONAL PROGRAM HELPS ADOLESCENT GIRLS UNDERSTAND MENSTRUAL HEALTH IN A SCHOOL IN DAHOD

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Received : 10/05/2025
Received in revised form : 05/07/2025
Accepted : 24/07/2025

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DOI: 10.70034/ijmedph.2025.3.271

Source of Support: Nil,
Conflict of Interest: None declared

Int J Med Pub Health
2025; 15 (3); 1474-1477

ABSTRACT

Background: Adolescent girls in rural and tribal areas often lack proper menstrual health education, leading to poor menstrual hygiene management and associated health issues. **Objectives:** This interventional study aimed to assess the impact of a school-based menstrual health education program among adolescent girls in the tribal region of Dahod.
Materials and Methods: Pre- and post-intervention surveys were conducted to evaluate the knowledge and attitudes regarding menstrual health among the participants.
Results: There was a significant improvement in menstrual health knowledge following the intervention. The mean knowledge score increased from 5.3 ± 2.16 pre-intervention to 13.8 ± 1.7 post-intervention (mean difference = 8.5, $t = 266.5$, $p < 0.001$), indicating a statistically significant change. Additionally, the proportion of girls in the "Excellent" knowledge category rose from 0% to 80.5% post-intervention.
Conclusion: This study highlights the importance of targeted educational programs to improve menstrual health awareness and hygiene practices in underserved communities.
Keywords: Adolescent girls, menstrual health, hygiene education, interventional study, tribal area, Dahod.

INTRODUCTION

Menstrual health is a critical aspect of adolescent health, particularly for girls in developing countries where cultural taboos and lack of awareness pose significant challenges to effective menstrual hygiene management (MHM).[1] In rural and tribal areas, such as Dahod, Gujarat, India, the situation is further exacerbated by poor access to menstrual products, inadequate sanitation facilities, and limited health education.[2] Adolescence is a critical time for girls to develop knowledge and healthy practices related to menstruation, which can influence their overall health and well-being throughout life.[3]
Several studies have shown that school-based menstrual health education programs can significantly improve knowledge, attitudes, and practices related to menstrual hygiene among adolescent girls.[4] However, there is limited data on the effectiveness of such programs in tribal areas, where cultural barriers and economic challenges are more pronounced.
This study aimed to evaluate the impact of a school-based menstrual health education program among adolescent girls in the tribal region of Dahod. The objectives were to assess the baseline knowledge, attitudes, related to menstruation, deliver an educational intervention, and evaluate the changes post-intervention.

MATERIALS AND METHODS

Study Design

This was a community-based, study conducted in a selected schools of tribal region of Dahod. The study followed a pre-post intervention design, with data collected at baseline and 3months after the educational intervention.

Study Population

The study was conducted among adolescent girls enrolled in government school of tribal area in Dahod. A total of 208 girls were included in the study, selected using purposive sampling. Informed consent was obtained from the participants and their guardians.

Intervention

The intervention consisted of a structured menstrual health education program delivered following the pre-test. The program covered topics such as the menstrual cycle, hygiene practices during menstruation, dispelling myths and taboos, and the importance of using sanitary products.

Data Collection

A pre-tested base line assessment was done first; structured questionnaire was used to collect data related to menstrual health. The questionnaire covered demographics, knowledge (menstrual causes, blood origin, frequency, duration, menopause awareness, absorbent use, sanitary napkin frequency, sun drying, external genital cleaning, and material used for cleaning) and attitudes toward menstruation.1 week after the baseline data an educational intervention was given. Post-test data was collected after 3months using the same questionnaire.

Data-Analysis

The collected data were analysed using excel. Descriptive statistics (mean, frequency, percentage) were used to summarize the data. Paired t-tests were applied to assess the significance of changes in score of pre- and post-Intervention. A p-value of <0.05 was considered statistically significant. Chi-square was applied on variables related to attitude towards menstruation.

RESULTS

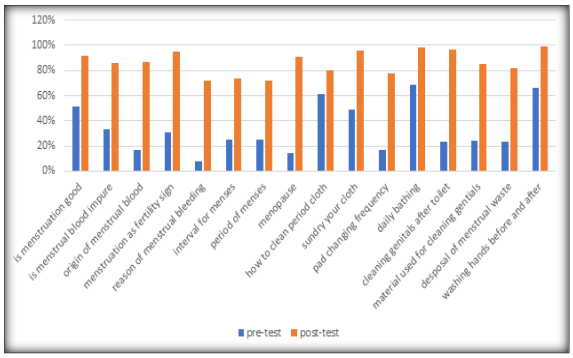

Figure 1: Comparison of pre and post-test knowledge questions

Table 1- Presents the socio-demographic and menstrual baseline characteristics of the 208 adolescent girls included in the study. The majority of participants (59%) were in the age group of 13–15 years, followed by 29% in the 16–19 years range, and 12% aged 9–12 years. Most of the participants (93%) belonged to the Hindu religion. When looking at parental education, it was observed that a significant proportion of mothers (73%) were illiterate, while only 3% had attained education up to the secondary level and above. In contrast, fathers had relatively better educational backgrounds, with 30% being just literate, 22% educated up to primary level, and 21% having education at the secondary level or higher.

Regarding menstrual health-related baseline characteristics, the age at menarche varied, with 50% experiencing menarche at 12–13 years, 28% at 14–15 years, and 5% at 10–11 years. Interestingly, 17% of the girls had not yet attained menarche at the time of the survey. About 57% of the girls reported having prior knowledge of menstruation before their first period, while 43% did not. The primary source of menstrual information was their mothers (77%), followed by teachers (17%) and media such as social platforms or electronic media (6%).

Table 2- Displays the distribution of knowledge scores before and after the educational intervention. In the pre-test, 37% of participants scored in the "Below Average" category (scores 0–4), 56% scored "Average" (5–8), and only 7% achieved a "Good" score (9–12). Notably, none of the participants scored in the "Excellent" category (13–16) prior to the intervention. However, after the intervention, there was a dramatic improvement in knowledge levels. A remarkable 80.5% of participants scored in the "Excellent" category, 18% in the "Good" category, and only 1.5% remained in the "Average" range, with no participants in the "Below Average" category. This distribution clearly indicates a substantial positive shift in knowledge post-intervention.

Table 3- Further supports these findings through a comparison of mean knowledge scores before and after the intervention. The mean pre-test knowledge score was 5.3 (±2.16), whereas the post-test score rose significantly to 13.8 (±1.7), with a mean difference of 8.5. The paired t-test yielded a t-value of 266.5 and a p-value of <0.001, confirming the statistically significant improvement in knowledge due to the educational intervention.

Figure 1- Graphically represents the upsurge in the proportion of students achieving better knowledge scores across various domains after the intervention. The visual clearly shows a rightward shift in the distribution, reflecting increased awareness and understanding of menstrual health among the participants.

Table 4- Attitude-related changes were analysed using the chi-square test. A statistically significant shift in perceptions was observed across all six assessed beliefs and taboos surrounding menstruation ($p < 0.0001$ for all). For example, the belief that girls should not touch others during menstruation dropped from 50% agreement to 37.5%, and the number of girls disagreeing with this notion increased significantly post-intervention.

Table 1: Distribution of socio-demographic and menstrual baseline characteristics of participants

Variables	n (%)
Age in years	
9-12	25 (12%)
13-15	**123 (59%)**
16-19	60 (29%)
Religion	
Hindu	**192 (93%)**
Others	16 (7%)
Mother's education	
Illiterate	**153 (73%)**
Just literate	36 (17%)
Up to primary level	15 (7%)
Secondary level and above	4 (3%)
Father's education	
Illiterate	56 (27%)
Just literate	**63 (30%)**
Up to primary level	45 (22%)
Secondary level and above	44 (21%)
Menstrual baseline characteristics	
Age at menarche	
Not yet	36 (17%)
10-11	10 (5%)
12-13	**105 (50%)**
14-15	57 (28%)
Knowledge prior to menarche	
Yes	**119 (57%)**
No	89 (43%)
Source of menstruation information	
Mother	**160 (77%)**
Teachers	36 (17%)
Social media/TV/radio, etc	12 (6%)

Table 2: Frequency & percentage distribution of knowledge score of participants

Grading	Score	Pre-test		Post-test	
		Frequency	%	Frequency	%
Below average	0-4	76	37	0	0
Average	5-8	116	**56**	3	1.5
Good	9-12	16	7	37	18
Excellent	13-16	0	0	168	**80.5**

Table 3: Comparison between Pre-test & Post-test knowledge by mean SD and t-value

Knowledge	mean	SD	N	Mean difference	t-value	p-value
Pre-test	5.3	2.16	208	8.5	266.5	**<0.001**
Post-test	13.8	1.7	208			

Table 4: Comparison between pre-test and post-test attitude related to menstruation using frequency and chi-square

Sr. no.	Variables	Pre-test			Post-test			Chi square	P-value
		Agree	Disagree	Don't know	Agree	Disagree	Don't know		
1	Notallowed touch others	104	46	58	78	124	6	81.75	<0.0000001
2	Notallowed to go to kitchens	108	74	26	67	134	7	37.85	<0.0000001
3	Embarrassing/not good/ to discuss	76	66	66	77	114	17	41.73	<0.0000001
4	Activities are not blessed	57	51	100	75	103	30	53.32	<0.0000001
5	Being free from menses is a fate	56	80	72	50	143	15	55.48	<0.0000001
6	not allowed to visit holy places	96	70	42	102	97	9	25.90	<0.0000238

DISCUSSION

Present study demonstrated a significant improvement in menstrual health knowledge among adolescent girlspost-intervention, with mean knowledge scores increasing from 5.3 ± 2.16 to 13.8 ± 1.7 ($p < 0.001$). This aligns with findings from a study conducted in rural India, where a pharmacist-led educational program resulted in a statistically significant enhancement in both knowledge and practices related to menstrual hygiene among adolescent girls.[5]

Similarly, a systematic review of educational interventions across various regions in India found

that menstrual education programs consistently improved knowledge, attitudes, and practices (KAP) among adolescent girls. These studies underscore the effectiveness of structured educational interventions in enhancing menstrual health awareness.[6]

While knowledge levels improved, challenges in translating this knowledge into practice were noted. In present study, despite increased awareness, some girls continued to face barriers in practicing optimal menstrual hygiene, often due to lack of access to sanitary products or private sanitation facilities. This mirrors findings from a study in rural India, which highlighted that improved knowledge did not always lead to better hygiene practices, primarily due to infrastructural and resource limitations.[7]

Cultural taboos and misconceptions surrounding menstruation remain prevalent. Present study observed a significant shift in attitudes post-intervention, with a decrease in the belief that menstruating girls should not touch others or enter kitchens. This is consistent with findings from a study in Northeast Ethiopia, where educational programs led to a reduction in menstrual-related myths and improved school attendance among girls.[4]

CONCLUSION

The study demonstrated that a structured educational intervention significantly improved menstrual health knowledge and positively influenced attitudes among adolescent girls in a tribal school in Dahod. The shift from below-average to excellent knowledge levels and the reduction in menstrual taboos reflect the effectiveness of the program. These findings underscore the importance of incorporating menstrual health education into school curricula, particularly in underserved rural and tribal regions, to promote better hygiene practices, reduce stigma, and empower young girls with essential health information.

Limitations

Single-CentreStudy: The intervention was conducted in only one government school in a tribal area of Dahod, which limits the generalizability of the findings to other schools or regions with different socio-cultural contexts.

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