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CHANGE IN KNOWLEDGE AND PRACTICES REGARDING MENSTRUATION IN ADOLESCENT GIRLS OF THE TRIBAL REGION OF WESTERN MAHARASHTRA

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ABSTRACT

Background: India has over 355 million menstruating women and girls, but millions of them across the country face bad experiences with Menstrual Hygiene Management (MHM)[3].

Materials and Methods: This was a Descriptive Longitudinal study with a study duration of 6 months. This study was conducted in a School in Bhandardara and the Department of Community Medicine, Dr. BVP Rural Medical College, Loni.

Results: A total of 44 students participated in the workshop. The mean age of the students was 13.98 ± 1.35 years. The mean age of menarche of study participants was 12.69 ± 1.05 years. There was a statistically significant improvement in the knowledge of the participants post-workshop regarding the ideal time for changing the napkin/cloth (p value 0.04), disposal method of used sanitary products (p value <0.0001), anatomy of the female reproductive system (p value <0.0001), and source of menstrual blood. (p value 0.0004). There was a statistically significant difference in the menstrual hygiene practice scores of the participants before and after the workshop (p-value < 0.0001).

Conclusion: The pretest knowledge and practice of the study participants regarding menstruation and menstrual hygiene practices were generally poor, and the workshop resulted in a substantial improvement in these areas.

Keywords: Menstrual Hygiene Management, Tribal Maharashtra, Menstrual Practices, Adolescent girls

INTRODUCTION

Menarche marks the onset of a girl's reproductive phase of life. During puberty, physical changes occur that transform a child's body into that of an adult, marked by changes in body size and shape.

Menstruation starts in girls at an average age of 13 years and is called menarche, and on average, continues menstruating till the age of 51 years, which is called menopause [2]. India has over 355 million menstruating women and girls, but millions of them across the country face bad experiences with Menstrual Hygiene Management (MHM)[3].

Girls often receive their gynaecological information from their mothers, religious books, older sisters, or peers. However, such information is usually given after menarche rather than before. Girls with adequate and proper knowledge regarding menstruation can understand that it is a natural phenomenon.[1]

Insufficient sanitary practices associated with menstruation are not washing genitalia regularly, using unclean cloth, etc., during menstruation has been associated with serious ill health ranging from genital tract infections, urinary tract infections, and foul odour [4-6] and future long term ill effects like premature births, stillbirths, miscarriages, infertility, toxic shock syndrome, carcinoma cervix as a complication of recurrent reproductive tract infections[7].

Therefore, correct knowledge about menstruation after primary education for girls may improve safe practices and help in mitigating the suffering of many of them. In India, many women face restrictions on cooking, work activities, bathing, worship, and consuming certain foods. These restrictions are due to people's misperception and social taboos regarding menstruation. By educating both males and females regarding menstruation, we can overcome these false beliefs and taboos [8]. According to a study, in India, one-fourth of women in the reproductive age group have any one type of Reproductive Tract Infections (RTIs).[9]

The prevalence rate of RTIs in various states of India was 19-71% [10,] and only 36% of women in India use sanitary pads during periods [11]. In India, according to School Education Statistics, the Gross Enrolment Ratio (GER) at classes I-V (6-11 years) is 100.7 for girls, falling to 97.6 in classes VI-VIII (11-14 years). A contributory factor has been the lack of adequate toilet facilities at schools, lack of access to modern menstrual hygiene products, and the reluctance of parents to send girls to school on account of menstrual health issues [13,14].

Considering the situation, the study was planned to investigate the changes in Knowledge and Practices regarding menstruation among adolescent girls in the tribal region of Western Maharashtra after a workshop on menstrual hygiene in schools.

MATERIALS AND METHODS

This descriptive longitudinal study was conducted over six months at a school in Bhandardara and the Department of Community Medicine, Dr. B.V.P. Rural Medical College, Loni. The study population included school-going girls from the 6th to 11th standard who attended an awareness workshop on menstrual hygiene and were willing to complete the questionnaire both before and after the intervention. Girls who did not participate in the workshop were excluded from the study. A universal sampling method was employed, wherein all eligible participants were included.

The intervention consisted of a menstrual hygiene workshop for girls in the 6th to 11th standard, conducted at a school in Bhandardara, a tribal region of Maharashtra. A predesigned and pretested questionnaire was administered immediately before the workshop (pretest) to collect information on sociodemographic characteristics, knowledge related to the physiology of menstruation, and menstrual hygiene practices. During the workshop, participants were educated on female reproductive anatomy and physiology, as well as physical and psychological changes during puberty, the menstrual cycle, and hygiene maintenance during menstruation. The same questionnaire was used for the post-test, which was conducted six months after the workshop.

Scoring System:

- **Knowledge:** Each correct response was awarded 1 mark, while incorrect or "I don’t know" responses received 0 marks. Scores were categorized as follows: 0–4 = Poor knowledge, 5–8 = Average knowledge, and 9–12 = Good knowledge.

- **Practices:** Among the 10 questions assessing menstrual hygiene practices, only 7 were objectively scorable. Each correct answer was given 1 mark, and incorrect answers received 0 marks. The scoring was categorized as: 0–3 = Poor practices, 4–5 = Average practices, and 6–7 = Good practices.

The study commenced following ethical approval from the Institutional Ethics Committee (IEC). Written permission was obtained from the school principal, and written informed consent was secured from all participants who met the inclusion criteria.

Descriptive statistical analysis was performed using percentages, means, and standard deviations. Data were tabulated and graphically represented. Chi-square test was applied using SPSS and GraphPad software.

RESULTS

Table 1: Sociodemographic profile of the participants (n=44)

Variable	n (%)
Type of Family	
• Joint	34 (77.3%)
• Nuclear	10 (22.7%)
Mother's Education	
• Illiterate	17 (38.6%)
• Secondary school	26 (59.1%)
• Graduate	1 (2.3%)
Mother's Occupation	
• Homemaker	6 (13.6%)
• Service	4 (9.1%)
• Farmer	34 (77.3%)
Father's Education	
• Illiterate	16 (36.4%)
• Secondary school	27 (61.4%)
• Graduate	1 (2.3%)
Father's Occupation	
• Service	4 (9.1%)
• Farmer	39 (88.7%)
• Shopkeeper	1 (2.3%)
Class of the Student	
6th Std	5 (11.4%)
7th Std	12 (27.3%)
8th Std	16 (36.4%)
9th Std	6 (13.6%)
11th Std	5 (11.4%)

A total of 44 students participated in the workshop. The mean age of the students was 13.98 ± 1.35 years. The mean age of menarche of study participants was 12.69 ± 1.05 years. All the participants were from the English-medium schools and stayed in the hostel. Out of 44 participants, 35 (79.6%) had experienced menarche, and among them, nearly 28 (80%) were aware of menstruation before menarche. Among 22 (78.57%) participants, the mother was the main source of information regarding menstruation before menarche, while the elder sister was the source in 3 (10.71%) and a friend in 3 (10.71%) participants. Only 20 (45.5%) participants had attended the menstrual hygiene workshop in schools.

Table 2: Comparison of Menstrual Hygiene knowledge Before and After the Intervention (N=44)

Question	Response	Pretest n (%)	Post-test n (%)	*p*-value (χ^2 / Fisher's Exact)
What is menstruation?	Correct	43 (97.7%)	44 (100%)	0.31
	Wrong	1 (2.3%)	0 (0%)	
The purpose of using a sanitary napkin	Correct	36 (81.8%)	42 (95.5%)	0.08
	Wrong	8 (18.2%)	2 (4.5%)	
When to change the napkin	Correct	30 (68.2%)	41 (93.2%)	0.04*
	Wrong	14 (31.8%)	3 (6.8%)	
Disposal method of used sanitary napkins	Correct	19 (43.2%)	38 (86.4%)	< 0.0001*
	Wrong	25 (56.8%)	6 (13.6%)	
The cause of the body changes around menarche	Correct	28 (63.6%)	34 (77.3%)	0.24
	Wrong	16 (36.4%)	10 (22.7%)	
The female reproductive system is made up of…	Correct	2 (4.5%)	18 (40.9%)	0.0001*
	Wrong	42 (95.5%)	26 (59.1%)	
Source of menstrual blood	Correct	7 (15.9%)	24 (54.5%)	0.0004*
	Wrong	37 (84.1%)	20 (45.5%)	
A nutritious diet is needed during menstruation	Correct	39 (88.6%)	44 (100%)	0.05
	Wrong	5 (11.4%)	0 (0%)	

* Statistically significant.

There was a statistically significant improvement in the knowledge of the participants post-workshop regarding the ideal time for changing the napkin/cloth (p value 0.04), disposal method of used sanitary products (p value <0.0001), anatomy of the female reproductive system (p value <0.0001), and source of menstrual blood. (p value 0.0004) as shown in Table 2.

Table 3: Comparison between the menstrual hygiene knowledge score of the participants before and after the workshop (N=44)

Knowledge about menstruation	Pretest score n (%)	Post-test score n (%)	
Average	14 (31.8)	07 (15.9)	Chi-square: 8.093 p-value is 0.0175.
Good	20 (45.5)	33 (75.0)	
Poor	10 (22.7)	4 (9.09)	

As shown in Table 3, there was a statistically significant difference in the knowledge scores of the participants before and after the workshop (p-value = 0.01).

Table 4: Comparison of Menstrual Hygiene Practices Before and After the Intervention (N=44)

Practice	Response	Pretest n (%)	Post-test n (%)	*p*-value (χ^2 / Fisher's Exact)
How do you wash your private parts?	Good	6 (13.6%)	12 (27.3%)	0.1855
	Bad	38 (86.4%)	32 (72.7%)	
What do you use for cleaning?	Good	32 (72.7%)	42 (95.5%)	0.0087*
	Bad	12 (27.3%)	2 (4.5%)	
Do you cut or shave pubic hair?	Good	28 (63.6%)	35 (79.5%)	0.1561

	Bad	16 (36.4%)	9 (20.5%)	
Disposal method of used sanitary napkins	Good	17 (38.6%)	40 (90.9%)	< 0.0001*
	Bad	27 (61.4%)	4 (9.1%)	
Changing the pad or cloth in school	Good	22 (50.0%)	37 (84.1%)	0.0015*
	Bad	22 (50.0%)	7 (15.9%)	
During menstruation, do you attend school?	Good	34 (77.3%)	38 (86.4%)	0.4070
	Bad	10 (22.7%)	6 (13.6%)	
Washing hands after changing the pad	Good	35 (79.5%)	41 (93.2%)	0.1204
	Bad	9 (20.5%)	3 (6.8%)	

*Statistically significant.

In our study, all participants used sanitary napkins. As shown in Table 4, there was a statistically significant improvement in the menstrual hygiene practices of the participants post-workshop regarding what to use for cleaning private parts (p value 0.0087), Disposal method of used sanitary napkins (p value < 0.0001), and changing the pad or cloth in school (p value 0.0015).

Table no.5: Comparison between the menstrual hygiene practice score of the participants before and after the workshop (N=44)

Menstrual Hygiene Practice score	**Pretest score n (%)**	**Post-test score n (%)**	
Average	33 (75.0)	12 (27.27)	Chi-square: 27.086 p-value < 0.0001
Good	06 (13.6)	30 (68.18)	
Poor	5 (11.4)	2 (4.54)	

There was a statistically significant difference between the menstrual hygiene practice score of the participants before and after the workshop (p value < 0.0001)

DISCUSSION

A total of 44 students, with a mean age of 13.98 ± 1.35 years, had participated in the workshop. The mean age of menarche of study participants was 12.69 ± 1.05 years. Out of 44 participants, 35 (79.6%) had experienced menarche, and among them, nearly 28 (80%) were aware of menstruation before menarche. Among 22 (78.57%) participants, the mother was the main source of information regarding menstruation before menarche, while the elder sister was the source in 3 (10.71%) and a friend in 3 (10.71%) participants. Only 20 (45.5%) participants had attended the menstrual hygiene workshop in schools. In a study conducted by Sanjay Dixit et al.,[14] the age of menarche ranged from 11 to 15 years, with a mean of 12 years overall. Similar to our study, 86% of the girls were aware of menstruation before it began. The chief source of this information were mothers in 70% participants followed by friends in 11% in a study conducted by Sanjay Dixit et al.[14] In studies conducted in West Bengal[4], Pondicherry[13], West Bengal (by Paria)[15], Nagpur[16] and Wardha[5] it was observed that Mother was the informant in 37.5%, 66%, 76.8%, 71.3% and 40.67% of girls respectively. However, a different picture was presented in a study conducted among schoolgirls in Egypt by El-Gilany[17], which reported that mass media was the primary source of information. Additionally, a similar survey conducted in Uttarakhand[18] found that friends were the primary source of information (31.8%).

In this study, the knowledge of participants about menstruation was found to be poor in 22.7% of participants in the pretest, which significantly reduced to only 9% in the post-test after the workshop. Studies have shown that age- and sex-appropriate adolescent health education programs help fill the gaps in the knowledge of adolescents about their bodies, reproduction, and contraception[19]. Apart from creating awareness, this study significantly improved the menstrual hygiene practices of the study participants. Only 13% of study participants were following good menstrual hygiene practices

before the workshop, but after the workshop, this percentage significantly increased to 68%. Many studies have shown improvements in menstrual practices following intervention.[19]

In the current study, 97.7% of study participants were aware that menstruation is a natural process. Similar findings were reported in a study conducted by Sanjay Dixit et al.,[14] where 89% of girls indicated that menstruation is a normal process. In a survey conducted in West Bengal, it was reported that 86.25% of girls knew that menstruation is a natural process.[4]

In our study, 81.1 % of students correctly knew the purpose of using sanitary napkins, and only 68.2% had correct knowledge of when to change the napkin. In a study conducted by Sanjay Dixit et al.,[14] 93% of the participants correctly knew that sanitary pads were to be used during menstruation. In contrast, a study in West Bengal[4] and Pondicherry[3] showed that only 48.75% and 88% of girls, respectively, were aware of the same.

In our study, only 15.9% of the students correctly identified the source of menstrual blood. In a survey conducted in Pondicherry, only 38% of girls had correct knowledge regarding this, whereas in a study conducted by Sanjay Dixit et al.,[14] 60% of girls had the correct idea that the source of blood during menstruation was uterus.

In the current study, all students (100%) were using sanitary pads during menstruation. In studies conducted in Indore city of Madhya Pradesh[14] and Pondicherry[13] 98% and 94.8% used sanitary pads during menstruation, respectively, whereas a study conducted in West Bengal[4] and Uttarakhand[18] shows only 11.25%, and 34.8% of girls used sanitary pads, respectively. In contrast, three-fourths of the girls in Rajasthan were using old cloth during periods, and one-fifth (19.5%) were using sanitary pads.[20] The rate of using sanitary pads was only 15.67% in a study conducted by Abhay Mudey et al in Sawangi Wardha[5]. In our research, this might be because the school itself provides the students with napkins.

In our study, 72.7% of students used soap water for cleaning their genital area. Similarly, 97.5% used soap water, as per a study conducted in West Bengal, whereas in a study conducted by Sanjay Dixit et al., only 44% used soap water.[14]

In the present study, approximately 22% of the study participants reported that they don't attend school during menstruation. In terms of restrictions followed, 81% of girls had some restrictions (Religious occasion, Marriage, School, Playing, visiting a holy place, Household work, or other) during menstruation. Studies conducted in West Bengal showed that 85% and 80.3% of girls had a similar restriction during menstruation.[4,14] In a similar survey conducted in Nagpur[16], it was demonstrated that 73.64% of girls practiced various restrictions. This reflects the age-old practices in different cultures and taboos in society regarding menstruation, which need to be reformed to empower the girl child.

CONCLUSION

The pretest knowledge and practice of the study participants regarding menstruation and menstrual hygiene practices were generally poor, and the workshop resulted in a substantial improvement in these areas. Menstrual hygiene should be an integral part of the school/college curriculum and addressed by trained teachers, counselors, or healthcare personnel. Scientific materials on menstrual hygiene, including books and videos, preferably in regional languages, should be made available in the library to prevent users from being misled by unreliable sources of information.

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CONFLICTS OF INTEREST

There are no conflicts of interest.

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