

Assessment of Knowledge, Attitude and Practice of Menstrual Hygiene Among Adolescent Girls in West Bengal, India

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Abstract

Menstrual health and hygiene in India have been significant area of concern due to various challenges and cultural factors. In India, knowledge, attitude, and practices regarding menstrual hygiene vary across different regions, socioeconomic backgrounds, and age groups. Many women and girls in India lack proper information about menstruation. The present study aims to assess the knowledge, attitude, and practices (KAP) of menstrual hygiene among adolescent girls in West Bengal, India. A total of 683 adolescent girls aged 12 to 18 years participated in this study from rural and urban areas under six districts of West Bengal, India. Data on demographic and socio-economic variables, knowledge, attitude, and practices regarding menstruation health and hygiene were collected. The mean age of participants was 15.41 ± 2.04 years, whereas the mean age of menarche was 12.59 ± 0.47 years. The majority of the studied participants (69.11%) source of information on menstruation was their mother. Again, 63.25% of the studied participants used sanitary napkins followed by homemade clothes (36.16%). Age of the participants, area of residence, family type, monthly family income, newspaper reading, television viewing, and internet use were significantly ($P < 0.0001$) associated with menstrual materials use. Raising awareness, improving infrastructure, and providing access to affordable menstrual hygiene products is important to ensuring that adolescent girls and women in India can manage their menstruation safely, hygienically, and with dignity.

Keywords: KAP Study; Menstrual Health and Hygiene; Indian Adolescent Girls

Introduction

Menstrual hygiene management (MHM) is a significant area of concern in India due to several factors including taboos, lack of proper information, inadequate sanitation facilities, and limited access to menstrual hygiene products [1]. In India, menstruation is often surrounded by taboos and stigma. Menstruating girls and women may face restrictions in their daily lives, including limitations on entering religious places or participating in certain social events. This stigma can negatively affect their overall well-being and limit their access to proper

menstrual hygiene management [2]. Lack of awareness about menstruation, menstrual hygiene, and the importance of proper hygiene practices is a significant challenge in India. Many girls and women in rural areas have limited knowledge about menstruation, which often leads to unhygienic practices [3]. Access to clean and private sanitation facilities are crucial for proper MHM. However, many schools, public places, and households in rural areas lack facilities including proper toilets with water and disposal systems. Inadequate sanitation infrastructure creates challenges for girls and women to manage their menstruation with dignity [4]. Access

to affordable and quality menstrual hygiene products, such as sanitary pads, remains a challenge in many parts of the country. Apart from this, proper disposal of menstrual waste is another concern. Lack of proper waste management infrastructure leads to improper disposal of used menstrual products, which can pose environmental and health hazards [5].

In India, several studies have been initiated on menstrual health and hygiene-related issues among adolescent girls in both rural and urban areas. In 2011, Thakre., *et al.* revealed that 36.95% of adolescent girls were aware of menstruation before menarche in the Nagpur district of Maharashtra. The mean age at menarche was 12.85 ± 0.86 years among the participants in this study. The practice of using homemade clothes was reported by 45.74% while 49.35% of study participants used sanitary pads. 33.85% of study participants had satisfactory external genitalia hygiene. Most practice restrictions on menstrual days. Menstrual hygiene indicators showed a significant difference between participants from rural and urban areas [6]. Another study from Maharashtra found that about 60% of the study participants used sanitary napkins while about 22% used water and no soap for washing hands [7]. Aggarwal., *et al.* in 2021 found that none of the participating adolescent girls from rural Maharashtra had proper knowledge about menstruation [8]. In 2016, a systematic review and meta-analysis of more than 97 thousand adolescents concluded that commercial pad use was more common in urban areas. Improper disposal was also common among the study participants in both urban and rural areas in India [1]. Dhingra., *et al.* in 2009 found the level of personal hygiene and menstrual management among tribal adolescent girls in the Jammu district was quite unsatisfactory. About 98% of the study participants believed that regular bathing should not be done during the menstrual days [9]. In 2022, Singh., *et al.* found only 42% of adolescents use hygienic methods exclusively in rural India [10]. A study from West Bengal found that only 11.25% of girls use disposable sanitary napkins [3]. Another study in West Bengal found that the difference in awareness about menstruation between urban and rural areas is highly significant. Only 37.52% of girls were aware of menstruation before menarche. Satisfactory cleanliness was practiced only by 47.63% of urban and 37.96% of rural girls [11]. Majeed., *et al.* in 2022 found statistically significant improvement in knowledge and practices on menstruation [12]. Borkar., *et al.* revealed that only 45.17% of studied participants were conscious before the onset of the menstruation cycle [13].

In India efforts are being made by the Government and Non-Governmental Organizations (NGOs) to address these challenges and promote better MHM. The 'Swachh Bharat Abhiyan' (Clean India Campaign) aims to improve sanitation and hygiene practices, including access to clean toilets, which directly benefits MHM. The National Rural Health Mission (NRHM) provides guidelines and support for promoting MHM in rural areas, focusing on awareness generation, access to sanitary products, and improved sanitation facilities [14]. The Ministry of Health and Family Welfare, Government of India has also launched the Menstrual Hygiene Scheme (MHS) to provide subsidized sanitary napkins called 'Freedays' to adolescent girls in rural areas. This scheme aims to increase access to affordable menstrual hygiene products among rural adolescent girls through the Accredited Social Health Activist (ASHA) [15]. In addition, NGOs, community-based organizations, and educational institutions are working to educate girls, women, and communities about menstruation, addressing taboos, and promoting proper hygiene practices in India.

This present study aims to assess the knowledge, attitude, and practices of menstrual hygiene among adolescent girls in West Bengal, India.

Material and Methods

683 adolescent girls aged 12 to 18 years who had experienced menarche for at least one year or more participated in this cross-sectional study. Participants were selected through a simple random technique from different habitat variations viz. rural, sub-urban, and urban areas under six districts of West Bengal, India from March 2022 to May 2023. Data on participants' knowledge, attitude, and practices in managing menstrual hygiene were collected using a pre-tested schedule. Data on demographic profiles, socio-economic levels like age and education of participants, age at menarche, mothers' educational levels and household income per month, family size, etc. were collected. In addition, data on usage and attitude towards menstrual materials were collected from each participant.

Statistical software MedCalc 20 was used to perform statistical analysis. To measure the significance of various factors related

to menstrual hygiene, descriptive and inferential statistical analyses were conducted with menstrual hygiene practices among participants.

Results

683 adolescent girls aged 12 to 18 years participated in this present study. The mean age of the participants was 15.41 ± 2.04 years, while the mean age at menarche was 12.59 ± 0.47 years. Table 1 shows the basic demographic and socio-economic characteristics of the studied participants. Most of the study participants were 16 years of age or younger (60.32%), Hindu (74.52%), and lived in rural areas (50.81%). The table also shows that most of the participants were from nuclear families (70.57%) and families with a monthly income of Indian Rupees (INR) between 10 to 20 thousand (58.12%).

Variables	Number (%)
Age of participants (Years)	
≤16	412 (60.32)
>16	271 (39.68)
Religion	
Hindu	509 (74.52)
Muslim	137 (20.05)
Christian	13 (1.91)
Others	24 (3.52)
Area of residence	
Rural	347 (50.81)
Sub-urban	214 (31.33)
Urban	122 (17.86)
Family type	
Nuclear family	482 (70.57)
Joint family	201 (29.43)
Family income (INR)	
<10K	103 (15.09)
10K-20K	397 (58.12)
>20K	183 (26.79)

Table 1: Demographic and socio-economic characteristics of study participants (n = 683).

Table 2 shows the knowledge regarding menstruation among the studied participants. The sources of information about menstruation for 69.11% of the studied participants were their

mothers, followed by the media (24.31%). 85.79% and 83.3% of the studied participants had correct information about the cause of the menstruation and source of menstrual blood, respectively. The majority of the studied participants (58.27%) were not aware of menstruation before menarche.

Parameters	Number (%)
Source of information on menstruation	
Mother	472(69.11)
Elder Sister	11(1.60)
Friend/Classmate	13 (1.90)
School Teacher	6(0.88)
Doctor/Health Worker	12(1.76)
Media	166(24.31)
Significant Others	3 (0.44)
Cause of the menstruation	
Know	586 (85.79)
Do not know	97(14.21)
Origin of the menstruation blood	
Know	569(83.30)
Do not know	114(16.70)
Aware of the period before menarche	
Yes	285(41.73)
No	398(58.27)

Table 2: Knowledge regarding menstruation among study participants.

Table 3 shows the attitude regarding menstrual health among the studied participants. 45.09% of the studied participants were disgusted by their menarche. Most of the participants are concerned about their menstrual symptoms (84.62%) and monitor their menstrual cycle (68.67%) regularly. Additionally, the table shows that price is the main factor when choosing menstrual products. 95.31% of the studied participants felt that visiting a Gynecologist is important while 98.68% of the studied participants were not willing to talk with men about their menstrual health and hygiene-related problems.

Table 4 shows the hygienic practices during menstruation among the studied participants. The sanitary napkin was used by 63.84% of the studied participants followed by homemade cloths (36.16%). The majority of the studied participants (67.05%)

Parameters	Number (%)
Reaction about menarche	
Normal	144 (21.08)
Exited	17 (2.49)
Scared	83 (12.15)
Embarrassed	24 (3.52)
Disgusted	308 (45.09)
Depressed	107 (15.67)
Concerns about menstrual symptoms	
Yes	578 (84.62)
No	105 (15.38)
Monitoring menstrual cycle	
Yes	469 (68.67)
No	214 (31.33)
Factors when choosing menstrual products	
Comfort	109 (15.96)
Price	409 (59.88)
Easily Disposable	31 (4.54)
Absorbency	99 (14.49)
Trendy	14 (2.06)
All	21 (3.07)
Important to visit Gynecologist	
Yes	651 (95.31)
No	32 (4.69)
Important to talk with men	
Yes	9 (1.32)
No	674 (98.68)

Table 3: Attitude regarding menstrual health among study participants.

disposed of their used sanitary pads twice a day and discarded the used pads as routine waste (94.88%). Again the table shows that 75.26% of the studied participants cleaned their external genitalia with water only. Most of the participants (94.87%) bathed daily during menstruation. All study participants are required to practice restrictions on menstrual days. 98.97% of studied participants have toilet facilities at their home.

Table 5 shows the association between factors related to menstrual health and the usage of menstrual materials among the studied participants. The majority (63.84%) of the studied

Parameters	Number (%)
Use of sanitary pad	
Homemade cloths	247 (36.16)
Sanitary napkins	436 (63.84)
Disposal of sanitary pad	
Once daily	97 (14.21)
Twice daily	458 (67.05)
More than twice	128 (18.74)
Method of disposal	
Throw it as routine waste	648 (94.88)
Burn it	3 (0.44)
Others (flush/hide)	32 (4.68)
Cleaning genitals after urinating during menstruation	
Yes	609 (89.16)
No	74 (10.84)
Cleaning of external genitalia	
Water only	514 (75.26)
Water and soap	27 (3.95)
Washing lotion	126 (18.45)
Unsatisfactory	16 (2.34)
Restriction practiced during menstruation	
Yes	683 (100.00)
No	0
Bath during menstruation	
Daily	648 (94.87)
First day	33 (4.84)
Not take any time	2 (0.29)
Toilet facility at home	
Yes	676 (98.97)
No	7 (1.03)

Table 4: Practices during menstruation among study participants.

participants used modern menstrual materials. Mother’s education level of study participants was not significantly associated (P = 0.26) while participants’ age, area of residence, family type, monthly family income, newspaper reading, television viewing, and internet usage within the last three months were significantly (P < 0.0001) associated with menstrual materials use (traditional and modern) among studied participants.

Parameters	n (%) of menstrual material used		p Value
	Traditional 247 (36.16)	Modern 436 (63.84)	
Age (Years)			
≤16	198 (80.16)	214 (49.09)	<0.0001
>16	49 (19.84)	222 (50.91)	
Area of residence			
Rural	198 (80.16)	149 (34.18)	<0.0001
Sub-urban	37 (14.98)	177 (40.59)	
Urban	12 (4.86)	110 (25.23)	
Family type			
Nuclear family	123 (49.79)	359 (82.34)	<0.0001
Joint family	124 (50.21)	77 (17.66)	
Monthly family income (INR)			
<10K	89 (36.03)	14 (3.21)	<0.0001
10K-20K	138 (55.88)	259 (59.41)	
>20K	20 (8.09)	163 (37.38)	
Education level of the mother			
Uneducated	18 (7.28)	33 (7.57)	0.2612
Up to Secondary	105 (42.51)	212 (48.62)	
Higher Secondary and above	124 (50.21)	191 (43.81)	
Reading newspaper			
Reads	165 (66.81)	401 (91.97)	<0.0001
Never Reads	82 (33.19)	35 (8.03)	
Watching televisions			
Watches	191 (77.33)	424 (97.25)	<0.0001
Never Watches	56 (22.67)	12 (2.75)	
Internet use (within last 3 months)			
Used	69 (27.94)	376 (86.24)	<0.0001
Did not use	178 (72.06)	60 (13.76)	

Table 5: Association between factors related to menstrual health and usage of menstrual materials among study participants.

Discussion

This present cross-sectional study aimed to assess the knowledge, attitude, and practices of menstrual hygiene among adolescent girls in West Bengal, India. A total of 683 girls aged 12 to 18 years participated in this present study. Knowledge, attitude, and practices regarding menstrual health and hygiene differ by place of residence. Mother is the main source of information for

adolescent girls although the education level of mothers' was not significantly associated with menstrual materials use among studied participants. Monthly household income was significantly associated with menstrual product usage as the present study found that price was the main factor while choosing menstrual products among the studied participants. In this present study, most of the participants knew the menstruation cycle, which

significantly involved spending time reading newspapers, watching television, and the Internet use daily. In addition, Internet usage, newspaper reading, and television viewing were significantly associated with traditional and modern menstrual product use among study participants. In this study, 41.73% of participants were aware before the onset of their menstruation cycle, which shows similar findings to a study conducted in West Bengal [11]. In the present study, 36.16% of the participants used homemade cloths as sanitary pads which showed similar results compared to other studies conducted in India.

The psychological approaches to menstruation among adolescent girls vary widely depending on various factors, including cultural, social, and individual differences. Menstruation elicits various emotional responses among adolescent girls, ranging from acceptance and indifference to negative emotions such as embarrassment, anxiety, or frustration. These emotions influenced by cultural taboos, societal attitudes, and individual experiences. Some may experience changes in their body image or self-esteem during menstruation. Physical discomfort, hormonal fluctuations, or concerns about leakage or odor impact how they perceive themselves and their confidence levels. Conversely, cultural practices that celebrate menstruation foster positive attitudes and a sense of empowerment.

Conclusion

It is important to continue raising awareness, improving infrastructure, and providing access to affordable menstrual hygiene products to ensure that adolescent girls and women in India can manage their menstruation safely, hygienically, and with dignity. To increase knowledge, attitude, and practice of good menstrual hygiene in India, it is essential to focus on education, awareness campaign, and access to menstrual hygiene products. Menstrual health and hygiene-related education should introduce into the school curriculum, ensuring both girls and boys receive age-appropriate information about menstruation, menstrual hygiene, and related health issues. This education should address common myths, cultural taboos, and misconceptions associated with menstruation. In addition, health awareness campaigns should organize with NGOs at the local level to eliminate stigma and raise awareness about menstrual hygiene. Affordable menstrual products, clean sanitation facilities, and waste management

systems should be accessible to all. By implementing these strategies, it is possible to increase knowledge, promote positive attitudes, and improve the practice of good menstrual hygiene in India, leading to better outcomes and empowering girls and women.

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