

Study on hygiene practice among adolescent girls with special reference to menstrual hygiene in Barpeta, Assam

Debadeep Kalita, Giridhar Pathak

Department of Community Medicine, Fakhruddin Ali Ahmed Medical College and Hospital, Barpeta, Assam, India

Correspondence to: Giridhar Pathak, E-mail: drgp001@gmail.com

Received: May 15, 2019; Accepted: June 27, 2019

ABSTRACT

Background: Lack of awareness and poor hygiene practices during menstruation can lead to various gynecological problems in the reproductive life of girls. Menstruation is still considered as unclean in the Indian society. **Objectives:** The objective of the study is to assess the hygiene practices among adolescent girls with special reference to menstrual hygiene in urban area of Barpeta and to assess the restrictions practiced by them during menstruation. **Materials and Methods:** It was a community-based cross-sectional study involving 200 adolescent girls of Barpeta conducted from August 2018 to January 2019. The data were collected using predesigned and pretested proforma. **Results:** The study revealed that 92% of the respondents knew about menstruation before menarche. As high as 92% of the respondents believed that menstruation occurs due to natural or hormonal cause, whereas 1.5% considered it as a disease process. 81.5% girls used commercially available sanitary pads and 78.5% girls cleaned external genitalia with soap and water. All the participants avoid attending religious occasion, followed by kitchen work (57.5%), marriage party (31.5%), and 30.5% of them were sleeping separately. 46% of the respondent avoid sour food during menstruation. **Conclusion:** Although awareness regarding menstrual hygiene is quite satisfactory in majority of the respondents, yet false perceptions, ignorance, and unsafe practices are still prevailing in the community. Behavior change communication to bring about safe and hygienic practices during menstruation through different stakeholders will help in solving menstruation-related problems among the adolescent girls.


KEY WORDS: Menstrual Hygiene; Adolescent Girls; Menstruation; Sanitary Pad; Reproductive Tract Infection

INTRODUCTION

Adolescence is the critical phase of physical, mental, and psychosocial development from childhood to adulthood and is characterized by significant hormonal changes. Adolescence is the period between 10 and 19 years of life (WHO).^[1] Adolescent girls' population is around one-fifth of the female population of the world. Menstruation is a part of the female reproductive cycle and signifies girls sexual maturity from the time of puberty. Globally, around half of

the female population is in reproductive age^[2] and at any given time, 25% of the female population is menstruating.^[3] Menstruation is the natural phenomenon in women's life and requires special care from physical, mental, and social point of view.^[4] To get a dignified healthy and productive life for women and girls, it is essential that the menstrual bleeding is managed hygienically without social stigma and fear.^[5]

Menstruation is a natural process which is linked with misconceptions and wrong practices, which results in adverse health outcomes. Hygiene-related practices during menstruation are of significant importance in terms of vulnerability to reproductive tract infections.^[6] Menstrual hygiene is an important issue which is not adequately acknowledged and not received required attention in reproductive health. Hence, studies to make the issue visible to the policymakers and informed practical actions to improve the life of women, especially the adolescent girls, are very much warranted.

Access this article online	
Website: http://www.ijmsph.com	Quick Response code
DOI: 10.5455/ijmsph.2019.0513327062019	

International Journal of Medical Science and Public Health Online 2019. © 2019 Debadeep Kalita and Giridhar Pathak. This is an Open Access article distributed under the terms of the Creative Commons Attribution 4.0 International License (<http://creativecommons.org/licenses/by/4.0/>), allowing third parties to copy and redistribute the material in any medium or format and to remix, transform, and build upon the material for any purpose, even commercially, provided the original work is properly cited and states its license.

The first menstruation or menarche occurs around 11–15 years with a mean age of 13 years.^[7] The manner by which girls learn about menstruation and associated physical and psychological changes always has an impact to her response about the event of menarche.^[8] A girl having a good knowledge about menstrual hygiene and practices which are safe during menstruation is less vulnerable to reproductive tract infection and its consequences.^[9] Hence, healthy knowledge about menstruation, from childhood, will escalate the safe practices and will help in mitigating sufferings of millions of adolescent girls. With this background, the present study was conducted to assess the hygienic practice among adolescent girls with special reference to menstrual hygiene in Barpeta, Assam.

MATERIALS AND METHODS

Study Design

A community-based cross-sectional study was conducted among 200 adolescent girls of urban wards of Barpeta town.

Study Participants

Adolescent girls who attained menarche, residing at urban wards of Barpeta, were the study participants. However, the adolescent girls not willing to participate and whose parents did not give consent were excluded from the study.

Sample Size

The sample size was calculated using the formula (Daniel, 1999) $n = Z^2pq/d^2$, where p = prevalence, $q = (1-p)$, $Z = 1.96$ (considering 95% confidence interval), and d = absolute precision of 7. Considering the prevalence of unhygienic practices = 48.75%,^[10] the sample size came to be 196, which is rounded up to 200.

Data Collection

A community-based cross-sectional study was conducted to assess the hygiene practices among adolescent girls with special reference to menstrual hygiene and restrictions practiced by them during menstruation. After obtaining institutional ethics committee clearance, informed consent was obtained from adolescent girls and their parents for conducting the study.

There are 22 urban wards in Barpeta district. Ten (10) urban wards were selected randomly. The sample size was determined using proportional allocation. In the urban wards, the households were selected using systematic sampling method. From the selected household, one adolescent girl was selected randomly and included in the study. This process was repeated till the desired sample size was obtained. If selected household did not have any adolescent girl or in

case of non-response, immediate next house was selected. The adolescent girls of the sampled population who were willing to take part in the study were interviewed using a predesigned and pretested proforma. Information regarding sociodemographic characteristics such as age of adolescent girl, religion, types of sanitary latrines, socioeconomic status, educational status of parents, perception about menstruation, sociocultural factor influencing menstruation, hygienic practices, and history of reproductive tract infection during menstruation were collected.

Data Analysis and Interpretation

Data were collected and entered into excel sheet for tabulation and calculation. Compiled data were analyzed using proportion and percentage.

RESULTS

Table 1 depicts that most of the respondents (51.5%) were aged between 10 and 14 years, while age range in the remaining was 15–19 years (48.5%). Majority of the respondents were Hindu (70%) by religion, followed by Muslim (30%). On the basis of socioeconomic status, most of the adolescent girls belonged to upper middle (50.5%) followed by lower middle (22%) class. Most of the respondents in the study live in nuclear family (89.5%), in pucca house (86%), and using sanitary latrine (94%). As per literacy status, majority of mothers of the respondents (30.5%) studied up to intermediate or post-high school. 3% of mothers were illiterate.

As observed in Table 2, most of the respondent (84%) attained menarche between 12 and 14 years of age. In 86.5% respondents, the duration of menstrual blood flow was found to be between 3 and 5 days, followed by <2 days in 8% and more than 5 days in 5.5%. In 66.5% adolescent girls, menstruation cycle was between 28 and 32 days followed by <28 days in 19.5% and more than 32 days in 14%. Excessive menstrual blood flow was found in 5.5% respondents. As per perception about cause of menstruation, 92% of the respondents believed that menstruation occurs due to natural or hormonal cause, and 1.5% of them thought menstruation to be a disease process. When the respondents were questioned to elicit their knowledge on menstruation and menstrual hygiene, majority of them (92%) knew about menstruation before menarche. Only 8% of them did not have knowledge about menstruation before menarche. Mother and sisters' were the source of information about menstruation in most of the respondent (72.5%).

Regarding the practices during menstruation as shown in Table 3, most of the respondents (81.5%) used commercially available sanitary pads, followed by the use of old or reused clothes in 7.5% respondents. The frequency of change pad during menstruation was one pad per day in 12%, two pads per day in 50.5%, three pads per day in 26.5%, and more than

Table 1: Sociodemographic characteristics of the study population

Sociodemographic characteristics	Frequency (%)
Age (in years)	
10–14	103 (51.5)
15–18	97 (48.5)
Religion	
Hindu	140 (70)
Islam	60 (30)
Socioeconomic status	
Upper	24 (12)
Upper middle	101 (50.5)
Lower middle	44 (22)
Upper lower	20 (10)
Lower	11 (5.5)
Types of family	
Nuclear	179 (89.5)
Joint	21 (11.5)
Types of house	
Pucca	172 (86)
Kutchra	28 (14)
Sanitary latrine	
Present	188 (94)
Absent	12 (6)
Mothers education	
Graduate or post-graduate	23 (11.5)
Intermediate or post-high school	61 (30.5)
High school certificate	55 (27.5)
Middle school certificate	40 (20)
Primary school certificate	15 (7.5)
Illiterate	6 (3)

3 pads per day in 11%. 81.5% of the respondents disposed their used pads by sanitary method. Cleaning of external genitalia each time after changing the pad during menstruation with soap and water was found to be 78.5% and with only water in 21.5%. Most of the respondents (98.5%) took bath daily during menstruation. 93.5% of the respondents washed hand with soap and water after changing their pads and 6.5% washed hand with water only [Table 3].

Table 4 shows the sociocultural factors influencing menstruation. All the participants were not attending religious ceremonies during menstruation, followed by avoiding kitchen work (57.5%), not attending marriage party (31.5%), sleeping separately (30.5%), and restricted to attend school (21.5%). Respondents on asking about restriction of food during menstruation, almost half of them (46%) avoided sour food, followed by egg (19.5%) and banana and other food (6%).

Table 5 shows the presence of reproductive tract infection during menstruation. 10.5% of the respondents complained

Table 2: Information about menarche and perception about menstruation

Information and perception	Total (%)
Age of menarche (years)	
10–11	26 (13)
12–14	168 (84)
15–18	6 (3)
Mean age of menarche 13±1 years	
Duration of menstrual blood flow	
<2	16 (8)
3–5	173 (86.5)
>5	11 (5.5)
Menstrual cycle	
<28	39 (19.5)
28–32	133 (66.5)
>32	28 (14)
Quantity of menstrual blood flow	
Excessive	11 (5.5)
Normal	165 (82.5)
Scanty	24 (12)
Perception about cause of menstruation	
Hormone/natural	184 (92)
Do not know	13 (6.5)
Disease	3 (1.5)
Knowledge of menstruation and menstrual hygiene before attaining menarche	
Present	184 (92)
Absent	16 (8)
Source of information about menstruation	
Mother and sister	145 (72.5)
Friends and relatives	40 (20)
Teachers and textbook	3 (1.5)
Media	12 (6)

of burning micturition and 18% of the respondents had white discharge per vagina during last menstruation.

DISCUSSION

This study shows that the mean age of menarche was 13 ± 1 years, which was similar to a study conducted by Banerjee *et al.* (13 ± 1 years),^[7] Cakir *et al.* (12.8 ± 1.3 years),^[11] and Singh *et al.* (12.5 ± 1.52 years).^[12]

The result revealed that 92% of the respondents had knowledge about menstruation before menarche. A similar cross-sectional study done in Nepal by water aid reported that a large majority of respondents (92%) had knowledge about menstruation before their menarche.^[13] In a cross-sectional study done among 160 adolescent schoolgirls in West Bengal by Dasgupta and Sarkar, it was observed that 108 (67.5%) study participants were aware about menstruation before attaining menarche.^[10]

Table 3: Distribution of adolescent girl as per hygienic practices

Hygienic practices during menstruation	Total (%)
Use of absorbent during menstruation	
Commercially available	163 (81.5)
New clothes	5 (2.5)
Reused cloths/old clothes	15 (7.5)
Mixed use	17 (8.5)
Number of pads used per day	
1	24 (12)
2	101 (50.5)
3	53 (26.5)
>3	22 (11)
Disposal of used absorbent	
Sanitary	163 (81.5)
Insanitary	37 (18.5)
Cleaning of external genitalia after changing the pad	
Soap and water	157 (78.5)
Water only	43 (21.5)
Bathing during menstruation	
Daily	197 (98.5)
Irregularly	3 (1.5)
Hand washing after changing pads	
Soap and water	187 (93.5)
Water only	13 (6.5)

Table 4: Sociocultural factor influencing menstruation

Sociocultural factors	Total (%)
Restriction observed during menstruation	
Religious occasions	200 (100)
Avoiding kitchen work	115 (57.5)
During marriage	63 (31.5)
Sleeping separately	61 (30.5)
Avoiding school	43 (21.5)
Restriction of food during menstruation	
Sour food	92 (46)
Egg	39 (19.5)
Banana and others	12 (6)

NB: Multiple response

Some other studies reported contradictory observations also. A study carried out in rural set up of West Bengal by Sudeshna and Dasgupta observed that only 42% of respondents knew about menstruation before attaining menarche^[14] and another study conducted in a South Indian town by Zaidi *et al.*^[15] found that only 18.67% of the respondent had knowledge regarding menstruation before menarche.

It was observed in the present study that 92% of the respondents believed that menstruation occurs due to natural or hormonal cause. Similar observations also reported by Dasgupta and

Table 5: Presence of any reproductive tract infection during menstruation

Reproductive tract infection	Total (%)
Burning micturition	
Present	21 (10.5)
Absent	179 (89.5)
White discharge P/V	
Present	36 (18)
Absent	164 (82)

Sarkar^[10] in a cross-sectional study done among adolescent girls in field practice area of Singur, West Bengal, where 86.25% girls believed menstruation as physiological, 6.25% of the girls believed it as a curse of god, 5% of the respondent considered it as a disease process, and 2.5% believed it to be due to some sin. However, in another study done in Rajasthan by Khanna *et al.*,^[16] nearly 70% of the respondent did not consider menstruation as a natural process. In our study, it was observed that 1.5% of the respondent believed menstruation as a disease process.

In this study, regarding the practices during menstruation, most of the respondents (81.5%) used commercially available sanitary pads, followed by the use of old or reused clothes in 7.5% respondents. Similarly, Arumugam *et al.*^[17] conducted a community-based cross-sectional study among women of reproductive age found that 72.5% of the respondents used sanitary pads during menstruation, 37% cleaned external genitalia with soap and water, and 6% of them with clean water and antiseptics. Khanna *et al.*^[16] study stated that 68% girls used sanitary pads. However, the use of sanitary pads was found to be very low in some studies. Dasgupta and Sarkar^[10] study showed that only 11.25% of the respondents used sanitary pads during menstruation. In another study done by Singh *et al.*^[18] in married women of Dehradun stated that only 13% of the respondent used sanitary pads, 13.5% of the respondents used homemade pads, whereas rest of the respondents (73.5%) used clean cloths. In this study, 78.5% of the respondents cleaned external genitalia each time changing the pad during menstruation with soap and water and water only in 21.5%. Similarly, Nair *et al.*^[19] found that 78% of the respondents' cleaned external genitalia with soap and 15.5% cleaned with water only during pre-intervention phase.

Among different types of sociocultural factor influencing menstruation, all the participants were not attending religious occasion during menstruation, followed by avoiding kitchen work (57.5%), not attending marriage party (31.5%), and had to sleep separately (30.5%). These findings indicate the prevailing traditional beliefs and restrictions observed during menstruation in the community. Similar findings were also reported by some researchers that most of the girls were restricted from playing games and performing routine household work and attending religious ceremonies.^[20,21]

Sudeshna and Dasgupta also observed that 38% of the adolescent girls were abstained from school in their last menstrual period.^[14] Thakre *et al.* observed that a significant number of girls (26.36%) were restricted from household work and were asked to sleep in a separate bed. The same study reported that most of the respondents (71.78%) did not attend religious ceremonies or visit temples.^[22]

In the present study, almost half of the respondents (46%) avoid sour food, followed by egg (19.5%) and banana and other food (6%). Sudeshna and Aparajita^[23] also reported that 80% of girls avoid sour food during menstruation.

In our study, 10.5% of the respondents complained of burning micturition and 18% of the respondents developed white discharge per vagina during last menstruation. Similarly, Sudeshna and Aparajita^[23] also reported that 10.5% had burning sensation during micturition and 18.4% had white discharge from vagina during menstruation. However, Srivastava^[24] study carried out on adolescent girls attending the gynecology OPD at a private clinic in Bhopal found that 60% girls had burning micturition as a common problem and in 28% girls had vaginal discharge during menstruation. Nair *et al.*^[19] study showed that 47% of the respondents had burning micturition and 56% of the respondents had vaginal discharge during menstruation which was contradictory to our study findings.

Strength and Limitations of this Study

The present study was conducted in urban wards of Barpeta town for the 1st time. The study will definitely help to know the baseline knowledge and practices regarding menstruation among the adolescent girls. However, the study was conducted with limited resources in a small group of population. Memory or recall bias may be anticipated.

CONCLUSION

This present study reveals that awareness on menstrual hygiene is quite satisfactory in majority of the respondents. However, false perceptions, ignorance, and unsafe practices during menstruation are still prevailing in a small proportion of respondents. Hence, the study findings emphasize the need to enhance safe and hygienic practices during menstruation and help them to come out from age-old misconceptions, traditional beliefs, and restrictions imposed during menstruation. Behavior change communication through different stakeholders for adopting positive attitudes toward menstruation will definitely help in solving menstruation related problems among the adolescent girls.

REFERENCES

1. World Health Organization. Programming for Adolescent Health and Development. WHO Technical Report Series

- No.886. World Health Organization; 1996. p. 2.
2. Population Reference Bureau. The World's Women and Girls' Data Sheet; 2011. Available from: <http://www.prb.org/pdf11/world-women-girls-2011-data-sheet.pdf>. [Last accessed on 2012 Dec 15].
3. Adhikari P, Kadel B, Dhungel SI, Mandal A. Knowledge and practice regarding menstrual hygiene in rural adolescent girls of Nepal. Kathmandu Univ Med J (KUMJ) 2007;5:382-6.
4. Menstrual Cycle; 2006. Available from: <http://www.en.wikipedia.org/wiki/Menstrualcycle>. [Last accessed on 2012 Nov 15].
5. Mahon T, Fernandes M. Menstrual hygiene in South Asia: A neglected issue for WASH (water, sanitation and hygiene) programs. *Gend Dev* 2010;18:99-113.
6. Singh MM, Devi R, Garg S, Mehra M. Effectiveness of syndromic approach in management of reproductive tract infections in women. *Indian J Med Sci* 2001;55:209-14.
7. Banerjee I, Chakraborty S, Bhattacharyya NG, Bandyopadhyay S, Saiyed HN, Mukherjee D, *et al.* A cohort study of correlation between body mass index and age at menarche in healthy Bengali girls. *J Indian Med Assoc* 2007;105:75-8.
8. Rao S, Joshi S, Kanade A. Height velocity, body fat and menarcheal age of Indian girls. *Indian Pediatr* 1998;35:619-28.
9. Wasserheit JN. The significance and scope of reproductive tract infections among third world women. *Suppl Int J Gynecol Obstet* 1989;3:145-68.
10. Dasgupta A, Sarkar M. Menstrual hygiene: How hygienic is the adolescent girl? *Indian J Community Med* 2008;33:77-80.
11. Cakir M, Mungan I, Karakas T, Giriskan I, Okten A. Menstrual pattern and common menstrual disorders among university students in Turkey. *Pediatr Int* 2007;49:938-42.
12. Singh A, Kiran D, Singh H, Nel B, Singh P, Tiwari P, *et al.* Prevalence and severity of dysmenorrhea: A problem related to menstruation, among first and second year female medical students. *Indian J Physiol Pharmacol* 2008;52:389-97.
13. Water Aid. Is Menstrual Hygiene and Management an Issue for Adolescent Girls? Water Aid in South Asia Publication; 2009. Available from: <http://www.wateraid.org/nepal>. [Last accessed on 2012 Aug 04].
14. Sudeshna R, Dasgupta A. Determinants of menstrual hygiene among adolescent girls: A multivariate analysis. *Natl J Community Med* 2012;3:294-301.
15. Zaidi SH, Sivakami A, Ramasamy DJ. Menstrual hygiene and sanitation practices among adolescent school going girls: A study from a South Indian town. *Int J Community Med Public Health* 2015;2:189-94.
16. Khanna A, Goyal RS, Bhawsar R. Menstrual practices and reproductive problems: A study of adolescent girls in Rajasthan. *J Health Manage* 2005;7:91-107.
17. Arumugam B, Nagalingam S, Varman PM, Ravi P, Ganesan R. Menstrual hygiene practices: Is it practically impractical? *Int J Med Public Health* 2014;4:472-6.
18. Singh A, Kandpal SD, Roy D. Menstrual hygiene practices and RTI among ever-married women in rural slum. *Indian J Community Health* 2011;22:41-3.
19. Nair AR, Pal DK, Dandotiya D, Verma S, Sawlani H, Kushwah S. A study to assess the knowledge regarding practices of menstrual hygiene and reproductive tract infections among school going adolescent girls. *Int J Med Sci Public Health* 2019;8:189-93.

20. Bobhate P, Srivastava S. A cross sectional study of knowledge and practices about reproductive health among female adolescent girls in an urban slum of Mumbai. *J Fam Reprod Health* 2011;5:117-24.
21. Jogdand K, Yerpude P. A community based study on menstrual hygiene among adolescent girls. *Indian J Matern Child Health* 2011;13:1-6.
22. Thakre SB, Thakre SS, Reddy M, Rathi N, Pathak K, Ughade S. Menstrual hygiene: Knowledge and practice among adolescent school girls of Saoner, Nagpur district. *J Clin Diagn Res* 2012;5:1027-33.
23. Sudeshna R, Aparajita D. Determinants of menstrual hygiene among adolescent girls: A multivariate analysis. *Nati J Community Med* 2012;3:294-301.
24. Srivastava S. Analytical study of urinary tract infection in adolescent girls. *Int J Reprod Contracept Obstet Gynecol* 2018;7:1385-8.

How to cite this article: Kalita D, Pathak G. Study on hygiene practice among adolescent girls with special reference to menstrual hygiene in Barpeta, Assam. *Int J Med Sci Public Health* 2019;8(9):759-764.

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