

Menstrual Hygiene Knowledge and Practices amongst Adolescent Girls in Urban Slums of Dibrugarh Town- A Cross Sectional Study

Pranjal Sonowal¹, Kaushik Talukdar²

¹Assistant Professor, Dept of Community Medicine; Assam Medical College, Dibrugarh-02, Assam

²Demonstrator, Dept of Community Medicine; Assam Medical College, Dibrugarh-02, Assam

Corresponding Author: Pranjal Sonowal

ABSTRACT

Introduction: In Indian society menstruation is still regarded as something unclean or dirty and linked with several misconceptions and practices which results in adverse health outcomes. Good hygienic practices such as the use of sanitary pads and adequate washing of the genital area are essential during menstruation.

Aim and Objectives: 1) To assess the knowledge and practices of menstrual hygiene amongst adolescent girls in urban slums of Dibrugarh town 2) To assess the association between menstrual hygiene practices and type of family amongst the adolescent girls.

Materials and Methods: A cross sectional study was conducted in July-September 2018 among 150 adolescent girls. A pre-designed, pretested questionnaire was used in the study. Descriptive statistics were applied in data analysis.

Results: The mean age of menarche in the study group was 12.53 ± 1.235 years. Only 49.3% girls were aware of menstruation before menarche. More than four fifth of the girls were not aware of the cause and 72% did not know the source of bleeding. 76.7% study population used sanitary pad only while 15.3% used both cloth and sanitary napkins during the time of menstruation.

Conclusion: Awareness regarding the need for information about healthy menstrual practices is very important. It is essential to design a mechanism to address and gain the access of hygienic menstrual practices for adolescent girls.

Key words: Menstruation, Awareness, Healthy practices

INTRODUCTION

Menstruation though a natural part of women's reproductive cycle but in most parts of the world, it remains a taboo and is rarely talked. Various taboos and cultural practices around menstruation negatively impact the lives of adolescent girls and women, and also reinforce gender inequities and exclusion. [1] In India where female child is neglected as indicated by sex ratio; adolescent girls constitute a vulnerable group. In Indian society menstruation still regarded as something unclean or dirty and linked with several misconceptions and practices which results in adverse health outcomes. [2] Women as well as girls of reproductive age need to access the use of clean and soft absorbent sanitary products and practice of cleaning of genital area during the time of menstruation as poor personal hygiene during menstruation and use of unclean napkins or cloths results in harbouring of micro -organisms which cause reproductive and urinary tract infections. The issue of menstrual hygiene and management is insufficiently acknowledged and has not received the required attention. [3]

Menstrual Hygiene Management (MHM) is defined as 'Women and adolescent girls using a clean material to absorb or collect menstrual blood that can be changed in privacy as often as necessary for the duration of the menstruation period, using soap and water for washing the body as required, and having access to facilities to dispose of used menstrual management materials'. [4] Inadequate menstrual hygiene

is a very important risk factor for reproductive tract infections. Hence proper knowledge and practice is a vital aspect of health education for adolescent girls. Good hygienic practices such as use of sanitary pads and adequate washing of the genital area are some important aspect for adolescent girls during menstruation. [5]

Moreover, the traditional Indian society prohibits talks on such topics and also discourages open discussion on such issues. This in turn leads to intense mental stress among the adolescent girls for which they seek health advice from those quacks or persons who do not have any knowledge or very few on the subject. [6] The hygienic practices related to menstruation are of considerable importance as it can lead to increased vulnerability to reproductive tract infections (RTI) if not properly maintained. The interplay of socioeconomic status, menstrual hygiene practices, and RTIs are noticeable. Today, millions of women have suffered RTI and its complications and often this infection sometimes transmitted to offspring. [7]

The reaction during menarche depends upon previous awareness and knowledge about it. The manner in which a girl is educated about menstruation has an impact on her response to the menarche. [8] Simple activities such as television programmes for education, trained school nurses/health personnel, motivated school teachers and knowledgeable parents can play a vital role in transmitting the message of menstrual hygiene practice to the adolescent girl. [9] It was against this background that this study was planned to evaluate adolescent girls' (residing in slums of Dibrugarh town) knowledge of menstruation and menstrual hygiene, as well as their practices of menstrual hygiene.

MATERIALS AND METHODS

A community based cross-sectional study was conducted on a study population of 150 adolescent girls in the age group 10-19 years. The sample was derived from the urban slums of Dibrugarh town near Assam Medical College, Dibrugarh. Using the

prevalence rate of 43.4% sanitary pad use during menstruation from previous studies amongst late adolescent girls [10] the sample size was determined using a standard formula: $Z^2 pq/d^2$ with relative precision of 20% (d). Applying the above formula, the minimum sample size required was 130. However, a sample of 150 adolescent girls was selected to accommodate the refusals or non-response.

The study was carried out between July to September 2018. A pre-designed, pretested questionnaire was designed by the investigator, which included the demographic information like parent's education, occupation, water facility etc. Personal information like chronological age, age at menarche, menstrual pattern, awareness before menarche and source of information about menstruation were also documented. Questions on awareness and physiology of menstruation were asked to assess the knowledge about menstruation. To assess the menstrual practices, the questions were about the use of sanitary pads, number of pads per day and genital hygiene during menstruation. House to house visit was done randomly to collect the required data by interview method among the adolescent girls.

Ethical approval was obtained from the Institutional Ethics Committee of Assam Medical College and Hospital before commencing the study. Data was entered in SPSS 25 (trial version) package and analyzed. Chi square test was applied to see the association between the type of family and menstrual hygiene practices.

RESULTS

Amongst the 150 adolescent girls it was found that the mean age of the study subject was 15.53 ± 2.094 years, while their age range was from 10-19 years. Most of the study subjects were Hindu (78%) by religion, general by caste (47.3) followed by SC (26.6%). Majority of the subjects belongs to nuclear family (76.7%) followed by joint family (23.3%). Majority of the mothers of the study subjects were below

10th standards (46%) followed by illiterate (28.7%) (Table 1).

The mean age of menarche in the study subjects was 12.53 ± 1.235 years. It was evident that only 49.3% of the participants were aware about menstruation before menarche and the most important source of their information were from their mothers and sisters (47.2%) followed by from friends and relatives (28.4) and in majority (87.3%) of the subjects the cycle of menstruation was between 28-30 days (Table 2).

Table 1: Demographic characteristics of the study subject

Characteristics	No	Percentage
Age of adolescent girls		
10-13 years	22	14.7
14-16 years	75	50.0
17-19 years	53	35.3
Religion of adolescent girls		
Hindu	117	78.0
Muslim	33	22.0
Caste of adolescent girls		
General	71	47.3
OBC	34	22.7
SC	40	26.7
ST	5	3.3
Type of family		
Joint	35	23.3
Nuclear	115	76.7
Education of mother		
Illiterate	43	28.7
Below 10	69	46.0
Graduate	3	2.0
HS Pass	9	6.0
HSLC pas	26	17.3

Table 2: Information about menarche

Variable	No.	Percentage
Age of menarche		
≤11 years	23	15.3
12 years	52	34.7
13 years	42	28.0
14 years	27	18.0
≥15 years	6	4.0
Awareness about menstruation before menarche	74	49.3
Sources of information before menarche#		
Friends	2	2.7
Friends and relatives	21	28.4
Mother	13	17.6
Mother and sister	35	47.2
Teachers and textbook	3	4.1
Cycle of Menstruation		
28-30 days	131	87.3
>45 days	15	10.0
<28days	4	2.7

Multiple response

Table 3: Various reactions during menarche

Reactions	No	Percentage
Casual	53	35.3
Felt ashamed	4	2.7
Frightened	73	48.7
Happy	1	0.7
Worried	19	12.7

Table 4: Knowledge of menstruation among adolescents:

Variables	No	Percentage
Cause of Menstruation		
Curse	1	0.7
Don't know	121	80.7
Hormonal	28	18.7
Origin of blood		
Don't know	108	72.0
Urinary bladder	3	2.0
Uterus	1	0.7
Vagina	38	25.3

Table 5: Distribution of subjects according to their practice during menstruation

Variables	No.	Percentage
Absorbent used		
Both cloth and napkin	23	15.3
Only cloth	12	8.0
Only sanitary napkin	115	76.7
Reason for not using only Sanitary napkin (n=35)		
Comfortable with cloth	1	2.9
Disposal problem	2	5.7
High cost	29	82.8
Others	3	8.6
Absorbent change day		
1	12	8.0
2	64	42.7
≥3	74	49.3
Habit of absorbent_change_night		
before going to sleep	146	97.3
No habit as such	4	2.7
Washing of reuseable cloth (n=35)		
Others	1	2.9
Pond water with soap	7	20
Tap water with soap	19	54.3
Tap water without soap	2	5.7
Tube well water with soap	6	17.1
Drying of reusable cloth (n=35)		
Inside house without sunlight	3	8.6
Inside the house where sunrays are coming	8	22.9
Outside house under sunlight	24	68.5
Reusable cloth number (n=35)		
1	8	22.9
2	13	37.1
≥3	14	40
Disposal of absorbent (n=150)		
Drain	1	0.7
Dumping	8	5.3
Dustbin	4	2.7
Landfill	67	44.7
Pond	27	18.0
thrown in open place	43	28.7
Bathing during menstruation	148	98.7
Handwashing after absorbent change	150	100
Cleaning of external genitalia during menstruation	149	99.3

Regarding knowledge of menstruation among adolescents it was found most of the study subject (80.7%) did not know the cause of menstruation and while most of the study subjects (72%) did not know the origin of blood during menstruation (Table 4). Most of the study subjects (48.7%) got frightened followed by

35.3% participants remained causal when attained menarche (Table 3).

Majority (76.7%) of the girls used only sanitary pads during menstruation. Most of the study participants (82.8%) used cloths due to the high cost of the sanitary pad amongst those (n=35) who used cloths during menstruation. Most of the study subject (49.3%) changes their absorbent ≥ 3 times a day followed by 42.7% changes their absorbent twice a day during menstruation. Most of the study subjects (97.3%) changes their absorbent before going to bed at night. Amongst those (n=35) who used the cloth as absorbent during menstruation, most of the participant (54.3%) used tap water with soap for washing the cloth, most of the study participant (68.5%) used to dry the reusable cloth outside house under direct sunlight, while most (40%) used same cloth for ≥ 3 times during their period. On the other hand most of study participants (44.7%) used to landfill their absorbent after use. Regarding the maintenance of hygiene 98.7% study subjects used to take bath, 100% used to

wash their hand after changing their absorbent and 99.3% used to wash their external genitalia during the time of menstruation (Table 5).

Most of the study subjects (87.3%) did not attend the religious function followed by (43.3%) not picking of flowers during menstruation (Table 6).

Table 7 shows that there is significant association between the type of family and use of only sanitary napkin ($p < 0.05$), habit of change of napkin at night ($p < 0.05$) and sanitary disposal of the used absorbent ($p < 0.05$) among the adolescent girls. There is also significant association between the type of family and the number of absorbent changed per day ($p < 0.05$) among the adolescent girls.

Table 6: Restriction practiced during menstruation

Restriction practiced*	No.	Percentage
Attending Religious Function	131	87.3
Picking flowers	65	43.3
Attending school	27	18
Cooking	38	25.3
Eating sour food	46	30.7

*Multiple response

Table 7: Association between menstrual hygiene practices amongst adolescent girls and type of family:

Only sanitary napkin used				P value
Family type	Yes	No	Total	$\chi^2 = 3.617$ $p < 0.05$
Joint	31	4	35	
Nuclear	84	31	115	
Total	115	35	150	
Habit of absorbent changed at night				$\chi^2 = 0.006$ $p < 0.05$
Family Type	Yes	No	Total	
Joint	34	1	35	
Nuclear	112	3	115	
Total	146	4	150	
Sanitary disposal of absorbent				$\chi^2 = 0.037$ $p < 0.05$
Family type	Yes	No	Total	
Joint	18	17	35	
Nuclear	57	58	115	
Total	75	75	150	
Number absorbent changed daily				$\chi^2 = 1.414$ $p < 0.05$
Family type	Once daily	Twice daily	≥ 3 times daily	
Joint	3	18	14	
Nuclear	9	47	59	
Total	12	65	73	

DISCUSSIONS

The present study showed that the mean age of the study subject was 15.53 ± 2.094 years, while their age range was from 10-19 years. Study subjects were Hindu (78%) by religion, general by caste (47.3) and belong to nuclear family

(76.7%). Majority of the mothers of the study subjects were below 10th standards (46%). (Table 1) Sowmya et al. in their study in the field practice area of Bangalore found that maximum (76.25%) number of girls being between 14 and 15 years of age group. Among 210 respondents, 174

(82.9%) were Hindus, (61.0%) girls belong to nuclear family, 75 (35.7%) to joint and only 7 (3.3%) to three generation family. [11] Similar study in Gokulpuri, Delhi found that Mean (\pm SD) age was 16 (\pm 2.2) years. Among all these girls, 81 (95.3%) were Hindus and 4 (4.7%) were Muslims. Most of these girls were educated above high school (58; 68.2%). [12] Another study conducted in Slum area of Karad city under the field practice area of Krishna Institute of Medical Sciences Karad, India in year 2014 found that maximum, 70.4% girls were in age group 14 to 16 years with mean age 14.8 years. Out of total 230 girls, 15.6% were not enrolled into the school, whereas high illiteracy, 73% was found among mothers. Maximum, 77.8% families were belonged to Socio-Economic Class V. [13]

In the present study mean age of menarche in the study subjects was 12.53 ± 1.235 years. It was evident that only 49.3% of the participants were aware about menstruation before menarche and the most important source of their information were their mothers and sisters (47.2%) and in 87.3% of the participants the cycle of menstruation was between 28-30 days (Table 2). Mohite et al. in their study in Slum area of Karad city under the field practice area of Krishna Institute of Medical Sciences Karad, India in year 2014 found that mean age at menarche was 12.8 years with maximum, 70% had history of regular menstrual cycle. [13] Another study in Gokulpuri, Delhi found that mean (\pm SD) age of menarche in the study subjects was 11.4 ± 5.3 years. [12] Wagh et al. in their study in Nagpur in 2017 also found that out of 100 girls, 71 (71%) knew about menstruation before menarche while 29 (29%) did not have any knowledge. [14] Similar study in urban slums of Bilashpur (Chhattisgarh) found that mean age of menarche was 13.3 years. Mother seemed to be source of information about menstruation in maximum (80%) girls in his study. [15] Jugdand et al. in their study in Guntur found that out of total 360 adolescent girls, 257 (71.39%) girls have attained menarche.

Maximum number of girls (72.77%) has attained menarche in the age ranged between 12-14 years. In 66.54% girls, menstrual cycle was of 28-32 days. Only 36.19% girls were aware regarding menstruation prior to the attainment of menarche. In 61.29% of girl's mother was found to be first source of information regarding menstruation. [16] Udayar et al. In their study in Andhra Pradesh in 2015 found that (80.2%) got the information about menstruation before menarche from their mothers. [17] Sowmya et al. in their study in Bangalore found that 87.6% of the girls were aware about menstruation prior to the attainment of menarche. Mothers were the first informants in about 56.5% girls. [11]

Regarding knowledge of menstruation among adolescents in present study it was found most of the study subject (80.7%) did not know the cause of menstruation and while most of the study subjects (72%) did not know the origin of blood during menstruation (table 4). Most of the study subjects (48.7%) got frightened when attained menarche (table 3). Wagh et al. in their study in Nagpur in 2017 found that 71 (71%) girls knew the cause of menstruation as physiological whereas 18 (18%) girls didn't know the cause, 11 (11%) girls still believe it as curse of God. 68 (68%) girls knew the source of bleeding during menstruation as uterus. [14] Similar study in urban slums of Bilashpur (Chhattisgarh) found that 50% girls in response to menarche was sad, in 22% girls it was normal, 18% girls were scared, but we could not get any response in 10% girls. Only 62% girls knew about the source of menstrual blood. [15] Udayar et al. in their study in Andhra Pradesh in 2015 found that Majority of adolescent girls believed that the cause of menstruation was physiological (97.6%). [17]

In our study it was found that 76.7% girls used only sanitary pads during menstruation. Most of the study participants (82.8%) used cloths due to the high cost of the sanitary pad amongst those who used cloths during menstruation. Most of the

study subject (49.3%) changes their absorbent ≥ 3 times a day during menstruation and most of the study subjects (97.3%) changes their absorbent before going to bed at night. Amongst those (n=35) who used the cloth as absorbent during menstruation, most of the participant (54.3%) used tap water with soap for washing the cloth, most of the study participant (68.5%) used to dry the reusable cloth outside house under direct sunlight, while most (40%) used the same cloth for ≥ 3 times during their period. On the other hand most of study participants (44.7%) used to landfill their absorbent after use. Regarding the maintenance of hygiene 98.7% study subjects used to take bath, 100% used to wash their hand after changing their absorbent and 99.3% used to wash their external genitalia during the menstruation. Mohite et al. in their study in Slum area of Karad city under the field practice area of Krishna Institute of Medical Sciences Karad, India in year 2014 found that only 12.6% adolescent girls were practicing disposable adsorbent sanitary napkins; 55.6% was used 2 - 3 pads / day during their menstrual period. The reuse of material was practiced by maximum, 87.3% girls and of which only 18.4% were use soap (detergent) and water to clean the cloth material, 88% girls were dried it in sunlight. Higher percentages of girls, 77.3% were practiced an insanitary method of disposal of materials. The practices of personal hygiene including bath during menstruation and cleaning of external genital parts were followed by 95.2% girls respectively. [13] Similarly Sharma et al. in their study in Gokulpuri, Delhi found that 53 out of 71 (85.9%) girls used sanitary pads during menstruation. A majority 57 (91.9%) out of 71 girls threw absorbent in routine waste after use. Out of 17 girls who reused cloth, 73.08% reported that washroom facilities were available at home for cleaning cloth used as absorbent. In cases of reused cloth, the places of its drying which were observed, was outside the house in sunlight by 1 (5.8%) girl, 14 (82.2%) dried them

inside the house, and 2 (11.7%) girls dried them outside in dark places. When enquired about reasons for non-usage of sanitary pads, 10 out of 18 (55.5%) reported that they followed mothers' advice and kept using cloth. [12] Another study in Nagpur in 2017 found that 64% girls use sanitary pads during menstruation, 19% girls used old cloth while 17% girls used new cloth during menstruation as adsorbent material. 9% girls dispose pads or used cloth in dustbin, 19% girls flush them in toilet while 12% girls throw them roadside. [14]

Jitpure in his study in urban slums of Bilashpur (Chhattisgarh) found that out of 79 girls who used sanitary napkins, 1.3% girls changed it once a day, 35.4 % twice a day, 40.5% girls thrice a day, 18.9% girls changed it 4 times a day, and 3.8% girls > 4 times a day. 82.2% girls threw the pads in house dustbin and 2.5% girls threw on roadside. The used clothes were washed using soap and water by 80.9% girls, 9.5% used only water, and 9.5% used disinfectant. The clothes were dried in house corner by 80.9% girls and 19.1% girls dried the clothes in sunlight whereas 80.9% girls finally disposed off the used clothes after 2-3 months, 4.8% after 4-5 months, and 9.5% after 6-12 months by burning(19.1%), throwing in dustbin (14.3%), and 4.8% threw on roadside. 41% girls washed the genitals with only water, 40% girls with soap and water, and 19% girls with water and disinfectant. [15] Jugdand et al. in their study in Guntur found that 53.7% girls have reported use of sanitary pads during menstruation and 34.63% girls have reported use of old clothes during menstruation. [16] Another study in Andhra Pradesh in 2015 also found that sanitary pad usage was highest among the materials used during menstruation (78.5%), followed by usage of new cloth (13%). 43% subjects used to change the absorbent once, 58.0% of them were throwing the absorbent in dust bin and most of them are using only water for cleaning external genitalia (82.9%). Among those who were drying the absorbent, 14.3% were drying it under

sunlight and, and only 17.1% are using soap and water for this. ^[17]

In the present study it was found that most of the study subjects (87.3%) did not attend the religious function during menstruation (table 6). Sharma et al. in their study in Gokulpuri, Delhi found that Twenty eight out of 71 (40.0%) girls were restricted at home or not allowed to go out during menstruation. Around 33 out of 71 (46.4%) girls practiced different restrictions during menstruation. ^[12] In another study in Nagpur in 2017 found that 96% girls avoid going to temple, 68% girls restrict their daily activities, 56% girls avoid going to functions, 50% girls avoid going to kitchen, 50% girls avoid going to kitchen while 45% girls avoid touching things at home. ^[14] Jogdand et al. in their study in Guntur found that 78.99% girls were not allowed to attend religious occasions. 22.97% and 20.63% girls respectively were restricted from doing routine household work and playing. ^[16] In a study in Andhra Pradesh in 2015 also found that out of the various restrictions practiced during menstruation, important ones were like attending religious functions which was seen among 52% of the study subjects and others like restrictions in attending school (20.5%), touching sacred books (11.6%), playing or outing (9.6%), and keeping them separated (4.4%). ^[17]

The present study shows that there is significant association between the type of family and the use of only sanitary napkin, habit of change of absorbent at night, sanitary disposal of the used absorbent among the adolescent girls ($p < 0.05$). The present study also highlight the association between the type of family and the number of absorbent changed per day by the adolescent girls during the time of menstruation ($p < 0.05$) (Table 7). In a cross-sectional study done by Sarkar I. et al. at West Bengal also showed association between the type of family and good menstrual hygiene practices (OR=1.38). ^[18]

CONCLUSIONS

The present study has highlighted the needs of accurate and adequate information about menstruation and its appropriate management among the adolescent girls. It is also important to educate adolescent girls about the issues related to their menstruation, so that they could safeguard themselves against various infections and diseases of reproductive tract. Since mothers are the first teacher of their children, so they need to be equipped with the correct information as well as communication skills regarding menstruation, so that adolescent girls became ready for this important physiological changes in their life.

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