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Menstrual hygiene practices among adolescent girls in rural areas of Dibrugarh: an exploration into the need for health promotion activity

Utpala Devi[1], Beauty Mahanta[2] , Prasanta Kumar Borah[1], Jayanta Kumar Das[3], Nabanita Barman[4], Jolly Rabha[3], Amrit Borah[3], Jagadish Mahanta[1]*

[1]Regional Medical Research Centre, NE Region ICMR, Dibrugarh, Assam, India; [2]Duliajan College, Duliajan, Assam, India; [3]Assam Medical College & Hospital, Dibrugarh, Assam; India; [4]Urban Health Centre, Dibrugarh, Assam, India

***Corresponding Author email:** jmahanta@gmail.com

Abstract

Assam has a high maternal and child mortality rate. Thus it would be important to explore possible aetiology for such rates and implementation of interventions at all vulnerable stage for its reduction**.** The present study was an attempt to find out the menstrual hygiene practices among adolescent girls in the rural villages of Dibrugarh and to explore the possibility of the need for health education intervention. This was a community-based cross-sectional study conducted in July-August 2015 and included 312 girls between 11-19 years of age from 30 villages of the district. A questionnaire in local language was used as the study tool. Multivariate logistic regression analysis was done to identify adjusted odd ratio and the independent predictors of morbidity factors including burning micturition and itching genitalia. The mean age of menarche of the study participant was 12.1 ± 0.9 years, most (74%) of them used cloths as an absorbent, reused cloth was used by 58%, and inadequate washing of genitalia was seen among 12% of them. Changing absorbent < 3 times/day was significantly ($p<0.05$) associated with burning micturition ($p = 0.046$) and itching in the genitalia ($p = 0.021$). Inadequate washing of genitalia was also found to be significantly associated with burning micturition ($p = 0.01$) and using reused cloth with itching in the genitalia ($p = 0.033$) respectively. Lack of awareness regarding menstrual hygiene is seen among study participants. Awareness programme on menstrual hygiene in this region can be important.

Keywords: Adolescent girl, Assam, Dibrugarh, menstrual hygiene practices, risk factors.

Introduction

Reproductive tract infection (RTI) among females during childbearing age can affect both mother and neonate. Infections in them may have their causal root during their adolescence and unhygienic practices during menstruation can be one such. Studies have reported lack of menstrual hygiene as a cause of RTI's (Mudey et al., 2010; Juyal et al., 2014). Thus knowledge about clean hygienic practices among adolescent girls could have a great impact on reducing both maternal and neonatal fatal outcomes. Assam a state in the northeast of India has a higher maternal and child

mortality rate than its national average (SRS 2010-12). Thus it is important to explore the possible aetiology for such rates and implementation of interventions at all vulnerable stage which could help in its reduction. Reproductive tract infections related to menstrual hygiene are thought to be endogenous infections and likely to be introduced to the reproductive tract through the materials used for absorbing menstrual blood or by poor personal hygiene during the menstrual period (Sumpter, 2013). Use of sanitary pads and other good menstrual hygiene practices has shown protection of health of the women and improvement in school attendance (Singh, 2006; Montgomery et al., 2012). The availability and the financial constraints could be a cause for its lesser usage of sanitary pads in rural areas including Assam. The present study was an attempt to find out the menstrual hygiene practices among adolescent girls in the rural villages of Dibrugarh and to explore the possibility of the need for health education intervention.

Materials and Methods

Type of study

Community based cross-sectional study.

Study site

Data were collected from rural areas of Dibrugarh a district of Assam, a state in the northeast region of India. As per census 2011 the district has a total population of 1,326,335 of whom 81.6% resides in rural areas. The total rural female population in the district is 5, 32,306 and its average female literacy rate is 64.85 % while that of males is 80.4%. As per Sample Registration Survey (SRS 2010-12) the maternal mortality rate of the state is 328 and infant mortality rate is 54 which are higher than the country's average.

Sampling:

The total sample size was calculated as 390 at 95% confidence interval, 50% exposure frequency and the design effect of 1.0 using Epi-Info 7 software. We used cluster sampling method to obtain the desired sample size. In the first stage, 30 villages (clusters) were selected using probability proportionate to the size of the population. In the second stage, 13 households from each village were selected using simple random sampling to obtain a sample size of 390. From each household one member was invited to the study. In case of refusal, the next household was surveyed.

Duration of study

The period of data collection was during the months of July and August 2015.

Study tool

A questionnaire in local language was used. The questionnaire was developed after considering previous studies and its applicability in our situation (Mudey et al., 2010; Juyal et al., 2014; Thakre et al., 2011). It included information regarding occupation of their parents, knowledge about menstruation and hygiene practices and restrictions imposed upon them with regard to menstruation.

Method of collecting data

At the first visit the local ASHA (Accredited Social Health Activist) worker was approached and explained about the importance of the study. Questionnaires were distributed through them among girls in each village who had attained menarche and belong to 13 different households. Verbal consent was obtained from their mothers. The participants were asked to fill up the questionnaire by themselves. Those who were illiterate were helped by the ASHA workers. During the data collection it was ensured that apart from the mother none was present. Full confidentiality of the available data has been maintained.

Data Analyses

All analyses were done using the Statistical Package for Social Science (SPSS v 17.0) software. Multivariate logistic regression analysis was done to identify adjusted odd ratio and the independent predictors of morbidity factors namely burning micturition and itching genitalia. The level of significance was determined at $p<0.05$.

Results and Discussion

A total number of 390 girls had participated out of which 78 were excluded due to unavailability of more than 50% of data variables. The final data analysed were obtained from 312 girls in the age group 11 to 19 years covering 30 villages. The mean age of the girls who participated in this study was 15.4 ± 1.9 years. The demographic variables, menstrual related hygienic practices among the study participant are shown in Tables 1, 2 and 3.

Majority of the study participant was in the 15-19 years age group (64.1%). Majority of the study participant's mothers were housewives (60%) and most of their fathers were cultivators by occupation (64.1%). About 19% of these girls did not ever go to school.

The mean age of menarche of study participants was 12.1 ± 0.9 years. It is seen that 85.6 % of them knew about menstruation before attaining menarche and mother (70%) was the major source for such information. The teacher played a negligible role as an informant. Most of them (61.2%) had a regular menstrual cycle and the majority had a menstrual flow of 3 days duration (85.6%).

Table 3 shows the practices followed by these girls during menstruation. It is seen that nearly 74% of them used cloths as an absorbent. Those using sanitary pads gave the history of using cloth on and off when a sanitary pad is not available. The unhygienic practice of inadequate washing of genitalia without soap was practised by 12% of the respondents. About 25% and 24% of the study participants suffered from burning micturition and itching in the genitalia respectively. Nearly 16% had restrictions in taking food, 56.4% of them were not allowed to carry out household chores, and about 23% of them did not attend school during these days.

Multivariate logistic regression analysis revealed a number of risk factors that are independently associated with burning and itching in the genitalia of the study participants (Table 4). Changing of absorbent less than 3 times a day was significantly ($p<0.05$) associated with burning micturition (OR: 2.2; 95% CI: 1.01-4.85; $p = 0.046$) and itching in the genitalia (OR: 2.5; 94% CI: 1.15-5.44; $p=0.021$) among the study participant. Washing genitalia with only water was found to be significantly associated with burning micturition (OR: 4.2; 95% CI: 1.45-12.01; $p=0.01$) and using reused cloth with itching in the genitalia (OR: 1.99; 95% CI: 1.05-3.35; $p=0.033$) respectively (Table 4).

In the present study the mean age of girls attaining menarche was 12.1 ± 0.9 years. Other researchers from different regions of India have reported as around 12 and 13 years (Mudey et al., 2010; Khanna et al., 2005; Dasgupta et al., 2008; Narayan et al., 2001).

Prior knowledge about menarche was present in most (85.6%) of the respondents and mother was the primary source of information for the majority (70%) of them. Mother as a first informant has been reported by other Indian studies previously (Mudey et al., 2010; Thakre et al., 2011). Since mothers in rural areas are themselves ignorant about menstrual hygiene to be practiced they need information and education to teach their daughters. Teachers can also play a role here but in the present study teacher was found to have negligible role (0.3%) Training of school teachers for imparting knowledge regarding menstrual hygiene especially in rural areas can be of value. Apart from teachers ASHA workers, Non-Governmental Organisations (NGO's), mothers club etc can also have a role.

Table 1. Demographic variables of study participants.

Variable	Total number	Percentage
Age of the participants		
11 -14years	112	35.9
15-19 years	200	64.1
Mother's occupation		
Housewife	189	60.6
Cultivator	51	16.3
Daily wage worker	39	12.5
Tea garden worker	25	8
ASHA worker	1	0.3
Teacher	2	0.6
Service holder	3	1
Business	2	0.6
Father's Occupation		
Cultivator	200	64.1
Daily wage	49	15.7
Tea garden worker	12	3.8
Service Holder	22	7.1
Business	21	6.7
Teacher	4	1.3
Driver	1	0.3
No work	3	1
Does she go to school		
Yes	254	81.4
No	58	18.6

Table 2. Information about menarche and menstrual cycle

Variable	Number	Percentage
Age at menarche		
Does not remember	10	3.2
9 years	2	0.6
10 years	9	2.9
11 years	68	21.8
12 years	110	35.3
13 years	113	36.2
Age at which you came to know about menarche		
Did not know before menarche	45	14.4
9 years	3	1
10 years	25	8
11 years	56	17.9

12 years	110	35.3
13 years	73	23.4
From whom she came to know about menstruation		
Mother	218	69.9
Friends	48	15.4
Family member	34	10.9
Other sources	11	3.5
Teacher	1	0.3
Do you have a regular cycle		
Yes	191	61.2
No	121	38.8
Duration of flow		
3 or less than 3 days	40	12.8
More than 3 days	267	85.6
Did not comment	5	1.6

Table 3. Menstrual hygiene practices among the study participants.

Variable	Number	Percentage
Type of absorbent used		
Cloth	229	73.4
Both sanitary pad and cloth	83	26.6
Type of cloth used		
Every time new	132	42.3
Reused after washing	180	57.7
Frequency of changing absorbent per day		
3 times or more	257	82.4
Less than 3 times	33	10.6
Did not comment	22	7.1
Use of water/soap for cleaning of private parts		
Only water	37	11.9
Soap and water	275	88.1
Restrictions in taking food during those days		
Yes	49	15.7
No	263	84.3
Attend school during those days		
Yes	182	58.3
No	72	23.1
Carry out household work during those days		
Yes	176	56.4
No	136	43.6

Do you suffer from burning micturition		
Yes	79	25.3
No	233	74.7
Do you suffer from itching in the genital region		
Yes	74	23.7
No	238	76.3

Table 4. Risk factors for associated morbidities (Burning micturition & itching in genitalia)

Risk factors for burning micturition					
Variable	**Total**	**Burning micturition present**	**Adjusted OR**	**95% CI**	**p value**
Age					
11-14 years	112	29	1.05	0.57-1.94	0.87
15-19 years	200	50			
Duration of menstrual days					
3 days or less	40	6	2.12	0.82-5.48	0.12
≥ 3 days	267	73			
Type of absorbent material used					
Cloth	229	55	0.74	0,40-1.37	0.33
Sanitary pad and cloth	83	24			
Type of cloth used					
New	132	29	1.38	0.79-2.41	0.25
Reused	180	50			
Frequency of change of absorbent/day					
≥3 times	257	64	2.22	1.01-4.85	0.046* (p<0.05)
<3 times	33	14			
Washing of genital region with					
Soap & water	275	69	4.17	1.45-12.01	0,01* (p<0.05)
Only water	37	10			
Risk factors associated with itching in the genitalia					
Variable	**Total**	**Itching in perineal region present**	**Adjusted OR**	**95% CI**	**p value**
Age					
11-14 years	112	25	1.19	0.66-2.14	0.56
15-19 years	200	49			
Duration of menstrual days					
3 days or less	40	5	2.43	0.88-6.68	0.86
≥ 3 days	267	69			
Type of absorbent material used					
Cloth	229	55	1.0	0.53-1.93	0.97
Sanitary pad & cloth	83	19			

			1		
Type of cloth used					
New	132	23		1.05 -3.35	0.033*
Used cloth	180	51	1.88		
Frequency of change of absorbent/day					
≥3 times	257	58		1.15-5.44	0.021*
<3 times	33	15	2.50		
Washing of genital region					
Soap & water	275	66		0.83-7.33	0.084
Only water	37	8	2.54		

In the present study about 73% of the girls were using cloth as an absorbent. The rest 27% even though reports using sanitary pads had actually used them on and off. In other regions of the country too, a majority of them is being reported to wash and reuse cotton cloths (Mudey et al., 2010; Khanna ei al., 2005; Dasgupta et al., 2008; Narayan et al., 2001). Use of clean absorbent material is reported to be very important since improperly washed and stored absorbent makes one prone to infection (El-Gilany et al., 2005). Thus, it is very important to make the girls aware of menstruation and the clean practices to be followed during those days. In the present study use of reused cloth was significantly associated with itching in the genitalia ($p<0.05$). This could be due to improper washing, drying or storage as reported by others (El-Gilany et al., 2005). Thus using disposable sanitary pads is one of the good menstrual practices but very few of the rural girls in India can afford sanitary pads due to financial constraints (Thakre et al., 2011). Even though Government of India launched a scheme in 2011 to provide sanitary pads at subsidized cost but that is limited to selected areas (Press Information Bureau, GOT, 2010). Making them available to our girls in this region will be an important issue to be taken care of.

Not only the type of the absorbent but even frequency of changing habit of absorbent is also important. In the present study, a significant association with itching in the genitalia ($p=0.02$) as well as burning micturition ($p=0.046$) was seen.

Unsatisfactory washing of genitalia may be due to lack of awareness or unavailability of privacy (Thakre et al., 2011). In the present study it is evident that washing private parts with only water was significantly associated with burning micturition ($p = 0.01$).

As is seen in the present study, restrictions practised since early days in these areas are still being followed by the newer generation too in rural areas. Most of these like restrictions in food can make them vulnerable to diseases. Previous investigators have also reported restrictions during these days (Mudey et al., 2010; Dasgupta et al., 2008).

It is seen in our schools mostly in rural areas there is lack of separate and hygienic toilets for girls, undermining the right of privacy (Ten, 2007). As a result many of them prefer to avoid school even at the cost of sacrificing their classes. Thus they lag behind their male counterparts. This is one of the hindrances for attaining universal education and the elimination of gender disparity and women empowerment (Ten, 2007). In the present study it was seen that 23% of the study participants remain absent from school during her menstrual periods. Absenteeism in school during menstruation due to lack of privacy has been reported by other investigators (Ten, 2007).

As evident from the present study there is lack of knowledge regarding hygienic practices to be

practised during menstrual period. Even though financial constraints and availability would not make it possible for all rural girls to avail commercially available sanitary pads, which would have been the best hygienic method to be practised, it is still possible for healthy practice with the available option. Proper use of cloths as absorbents, number of times to be changed, the method of washing, drying and storing them would still be a good hygienic practice. These can be done by the creation of awareness among the rural adolescent girls. The importance of imparting education to girls through teachers, parents, ASHA and media has been suggested by others too investigators (Water Aid in Nepal, 2009 a; Garg et al., 201; Allah et al., 2011; Fakhri et al., 2012). Significant improvements in knowledge , beliefs and practices regarding menstruation have been reported by others (Haque et al., 2014). In our region too, introducing education based intervention through school in this region could target the majority of the adolescent girls who in turn can further spread the information into the community.

Lack of awareness regarding menstrual hygiene is seen among adolescent girls in rural areas of this region. Hence targeting the girl child through school based education programme on menstrual health can play an important role in reducing menstruation related morbidity increasing the female literacy rate in this region and in the long run can have an important role in controlling maternal and neonatal morbidity and mortality.

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