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Original Article

Menstrual Hygiene Management Practices of Adolescent Girls: A Study on the Selected Schools of Bogura District, Bangladesh

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Abstract

Background: Adolescence is the very important stage of physical, psychological, and reproductive development for females and menstruation becomes an unpleasant experience for adolescent girls due to poor water, sanitation, and hygiene facilities and inadequate menstrual hygiene management items. Various aspects such as physiology, pathology and psychology of menstruation have been found to be associated with health and well-being of women; hence, it is an important issue concerning morbidity. Thus, the study was conducted to understand the scenario of menstrual hygiene management of adolescent school girls in rural setting of Bogura District. More specifically, the objectives are (i) to assess the awareness (knowledge) about Menstrual Hygiene and their sources of information; (ii) to find out the prevailing practices for menstrual hygiene among adolescent girls; and (iii) to assess the facilities existing in the respondents' educational institutions for menstrual hygiene management. **Materials and Methods**: A community based cross-sectional study has been carried out in the three Upazilas of Bogura District namely Bogura Sadar, Sherpur, and Shariakandi. Primary Data were collected randomly form 290 adolescent girls through the face-to-face interview method by using the pre-tested and structured questionnaire during the period of October 2019 to November 2019. Univariate statistics were used to analyze the data. Relevant reports, academic articles, and feature of periodicals have been used to check validity and reliability. **Results:** Among the 290 adolescent girls, 67.6% were between 15 and 19 years and 95% are from Muslim Religion. A maximum of 98% were having high school (Secondary) education and 32% respondent's family income is between 5-10 thousand. Illiteracy rate among the respondent's fathers and mother is high. Highest number of respondents (40%) had experienced of their first period at 13 years. duration of 64% girl's normal menstruation is 3-5 days and flow of blooding is moderate or normal of 69% girls. About 69% had no knowledge of menses before menarche and the source of information was mother in 71%. 35% girls commented that bleeding initiated in uterus and 63% said that they don't know about this. About 33% and 11% girls used old cloth and sanitary pad respectively and rest of them used combinedly pad, old and new cloth, and tissue paper. About 12% used only water for cleaning genital area during menstruation. **Conclusions:** This study found that menstrual hygiene practices scenario among the adolescent girls is not satisfactory. So, education and awareness related to the practices of menstrual hygiene should be increased.

Keywords: Adolescent; School Girls; Menstrual Hygiene Management; Knowledge and Practice.

Introduction

For adolescent girls, and those women who are adult experienced menstruation which is their biological process by nature.[1] During the adolescent years in girl, the onset of the menstruation as one of most important changes occurring respectively. Many of the developing countries, the average age of menarche is from 12 to 13 years in rural areas, while in urban areas menarche is 12.5 years and less than that on average.[2] Women as well as girls who using sanitary pads and sufficient washing of genital area as hygiene practices during their menstruation.[3] Proper menstrual hygiene knowledge and practices are very important for both women and adolescent by the time of their menstruation. To do this, few actions need to be followed, namely 1) Regular change of clothing and underwear; 2) Change of hygienic pads one in every three or four hours; 3) Daily showering; 4) Adequate washing of genitalia after each voiding of urine and feces.[4]

For instance, Iran as a nation of Middle Eastern country, where almost half of the total population of girls is unconscious in terms of their menstruation and hygiene practices.[5] Another example based on India, a South Asian country with large population, where 113 million of the adolescent girls face vulnerabilities and barriers significantly to a comfortable and dignified experiences with Menstrual Hygiene Practice (MHP). One in 164 girls have been using sanitary pads and overall 10 percent of total girls is not aware regarding menstruation.[6] In terms of all South Asian countries, one in every three girls are suffering vulnerabilities at MHP. But in Bangladesh, 90% of total rural girls use old cloths and stored their menstrual dress in a hidden place.[7]

The matter of reproductive and sexual illness with its complications is always difficult task for women. The impact of poor MHP is major concerns for women in those sectors, namely: Urinary tract infection, abdominal pain, scabies in the vaginal area, absence from school, and complication during pregnancy.[8] Almost half of the students are minimum level of practice for the boring school environment. The affection of health, dignity, self-esteem and privacy of millions of adolescent girls and women by MPH throughout the world which is most important phenomenon.

The poor Menstrual Hygiene Management Practice of the Bangladeshi adolescent girls can be a major obstacle to achieve the Sustainable Development Goals specially goal 3 (ensure healthy lives and well-being for all at all ages), 4 (ensure inclusive and equitable quality education and promote lifelong learning opportunities for all), 5 (promote gender equality and empower all women and girls) and 6 (ensure the availability and sustainable management of water and sanitation for all). Thus, the study was conducted to understand the scenario of menstrual hygiene management of adolescent school girls in rural setting of Bogura District. More specifically, the objectives are (i) to assess the awareness (knowledge) about Menstrual Hygiene and their sources of information; (ii) to find out the prevailing practices for menstrual hygiene among adolescent girls; and (iii) to assess the facilities existing in the respondents' educational institutions for menstrual hygiene management.

Materials and Methods

Study Design: Descriptive cross-sectional study.

Study Setting: The present study was undertaken among the adolescent school girls of class 6 to 12 in three selected schools of three different Upazilas of Bogura District namely Bogura Sadar, Sherpur, and Shariakandi Upazila from the Northern part of Bangladesh. The study was carried out in a period of 6 months from October 2019 to March 2020. Written Permission has been obtained from the school authorities to collect data from the girl schools.

Study Population: Adolescent school girls of three selected schools of Bogura District between the age of 10 to 19 years.

Sample Size: The total number of 290 adolescent girls.

Sampling Technique: Non probability convenient sampling technique.

Inclusion Criteria: Those Adolescent school girls aged between 10 and 19 years and who gave verbal consent to participate in the study.

Exclusion Criteria: Those who refused to give verbal consent.

Data Collection Tools and Techniques: Data were collected using a pre-designed and pre-tested questionnaire with face-to-face interview technique.

Data Management and Analysis: The collected data were first checked for its completeness and consistency. The data then, entered on the computer programs Statistical Package for Social Sciences (SPSS) version 25 for analysis. The descriptive statistics; frequency, percentage, mean and standard deviation was used to describe the demographic characteristics, menstrual characteristics and menstrual hygiene practice of adolescent girls. Findings was presented in the form of tables and charts.

Ethical Approval: The researchers have strictly maintained all the ethics which are related to an academic research in every stage of the study. Before collecting the data, the school authority was informed about the objectives of this study and their prior permission and privacy were ensured. In this case, the formal permission of the Head Teacher and Principal

of the selected school was taken. Parental consent was not obtained since headteachers act as guardians in school. On the other hand, during the data collection, the presence of one or two school teachers was have been ensured. The purpose of the study was explained to the participants, and verbal consent was obtained from them.

Results

Socio-demographic Characteristics of the Respondents

This study was conducted among 290 adolescent girls from the different rural areas of Bogura District of Northern Bangladesh. Age-wise distribution showed that a maximum 67.6% of girls belongs to late adolescent group of 15–19 years and 32.4% belong to early adolescent group of 10–14 years. The mean age of the respondents is 15.2 years with a standard deviation of 1.73 years. Among the all adolescent girls, the religious identity of 95% respondents is Muslim and 4.1% belongs in Hindu religion. The current schooling status is also a very significant factors for the adolescent girls. The study finds that 97.9% adolescent girls are studying at secondary level of school which means class VI to X. On the other hand, only 2.1% are in the Higher Secondary level of education means Class XI-XII. The 83.8% girls mostly belong to the nuclear family whereas 16% to the joint family [Table-I]. Data about the monthly family income of the respondents shows that highest 31.7% respondents' family earn 5001 to 10,000 BDT monthly whereas 26.9% family's monthly income is 10,001 to 15,000 BDT. The monthly family income of 5.5% respondents is more than 30,000 BDT whereas 12.4% family earn below 5,000 BDT in every month. [See table I for details].

Figure I: Distribution of the respondents by source of information

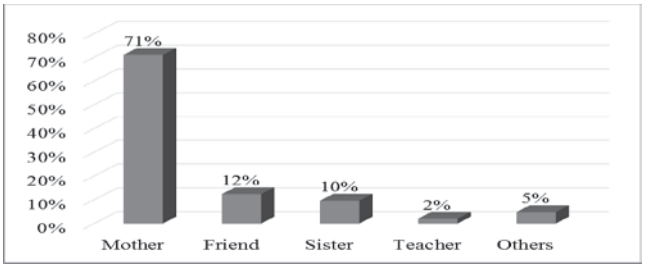

Table I: Distribution of Study population according to socio-demographic factors

Categories	Number of Adolescent Girls	Percent
Age (Year)		
Early Adolescence (10-14 years)	94	32.4
Late Adolescence (15-19 years)	196	67.6
Total	**290**	**100**
Religious Status		
Muslim	276	95.2
Hindu	12	4.1
Christian	2	0.7
Total	**290**	**100**
Current Schooling Level		
Secondary	284	97.9
Higher Secondary	6	2.1
Total	**290**	**100**
Monthly Family Income		
5000 and Below	36	12.4
5001-10000	92	31.7
10001-15000	78	26.9
15001-20000	48	16.6
20001-25000	10	3.4
25001-30000	10	3.4
More than 30000	16	5.5
Total	**290**	**100**
Family Types		
Nuclear	243	83.8
Joint	47	16.2
Total	**290**	**100**

Nature of Menstruation of Study Population

Table-II shows that the maximum number of girls had their menarche at 13 years (40%) followed by 12 years (36.6%). 13.8% of total girls have experienced their first period at the age of 14 years and 5.5% at the age of 15 years. The mean age of menarche was 12.78 years. The amount of blood flow at the time of menstruation is normal for 69% adolescent girls whereas blood flow is high for 23.4% girls followed by scanty for 7.6% girls. was scanty in 33% individuals, whereas the majority 65% had moderate blood flow. The duration of blood flow was found to be between 3 and 5 days in majority (64.1%) of the girls followed by more than 5 days (31.7%). Only 4.1% respondents said that their duration of flow was less than 3 days [See table II for details].

Table II: Pattern of Menstruation among study population

Categories	Number of Adolescent Girls	Percent
Age of Menarche		
10	02	0.7
11	10	3.4
12	106	36.6
13	116	40.0
14	40	13.8
15	16	5.5
Total	**290**	**100**
Duration of Flow (Days)		
Less than 3 days	12	4.1
3-5 days	186	64.1
More than 5 days	92	31.7
Total	**290**	**100**
Amount of blood flow		
Moderate/Normal	200	69.0
Heavy	68	23.4
Scanty	22	7.6
Total	**290**	**100**

Knowledge on Menstrual Hygiene and Management

Table-III shows that the majority of the girls (69%) have no knowledge of menstruation before menarche. The study also reveals the information about from whom the respondents have got the first information about menstruation and data figure-1 shows that 71% obtained information of menses firstly from their mother followed by friends (12.4%). The respondents have been asked about the organ from where the bleedings occur and only 35.2% of the girls knew that bleeding occurs from the uterus, whereas 62.8% have no idea of the organ from where bleeding occurs. Some of the girls mentioned kidney, blooder and liver name in this case. Very small number of girls (14.5%) has found to know that the cause of menses is physiological, and the maximum (79.3%) were not aware of anything [See table III for details].

Table III: Knowledge of adolescent girls on menstruation

Categories	Number of Adolescent Girls	Percent
Knowledge of Menarche prior before starting Menstruation		
Yes	90	31.0
No	200	69.0
Total	**290**	**100**
Knowledge of organ from where bleeding occurs		
Uterus	102	35.2
kidney	2	0.7
Urinary Bladder	2	0.7
Liver	2	0.7
Don't know	182	62.8
Total	**290**	**100**
Knowledge of Cause of Bleeding		
Physiological	42	14.5
God Given	18	6.2
Don’t Know	230	79.3
Total	**290**	**100**

Menstrual Hygiene Management Practice

In the present study, out of 290 adolescent school going girls, 93.1% have taken bath regularly during their menstruation, 74.5% have cleaned their genital area regularly during period and 87.6% mentioned that they have used water and soap for cleaning genital area during menstruation. The study sought to find out the type of menstrual absorbents used by the adolescent school girls. Table VI shows that 33.1% of the girls used sanitary pad and almost same (31.7%) school girls used Cloth. About 18% used tissue and sanitary pad when 13.8% said that they used both sanitary pad and cloth. Duration of changing absorbent materials is also an important part of menstrual hygiene management and the among the total respondents, 40% said that they have changed absorbent materials after every 5 to 7 hours followed by more than 7 hours (34.5%). On the other hand, the study also reveals that some restrictions have been imposed to the adolescent girls by their family or society during menstruation and in this regard 79% girls mentioned that they are not allowed to visit religious place or not permitted to carry out any religious activities. 12.4% respondent said that they were not going school during the period due to family restriction (see table-IV for details).

Menstrual Hygiene Management Facilities in the School

88.7 percent of the total respondents said that facilities for MHM exist in their school and 11.3 percent said no regarding this issue. The study also finds the types of facilities which exist in the school of the respondents. The data shows that 64.8% respondents said that sufficient water and light are available in the school and 43.8% mentioned that soap or handwash also available in the school for washing the hands. Only 7.8% adolescent girls said that disposal bin in the toilet of school is available for dumping the absorbent materials. Another very important question has been asked to the respondents that does the adolescent girls come to the school during their period and the data shows that 56.6% did not attend in the school during their period means they missed school due to that. Among these adolescent girls, 40% missed school 3 days in a month due to their period followed by 2 days (28%). 25.6% missed school for one day due to menstruation (see table-V for details).

Table IV: Menstrual Hygiene Practice of the Adolescent Girls

Categories	Number of Adolescent Girls	Percent
Taking bath every day during menstruation		
Yes	270	93.1
No	20	6.9
Total	**290**	**100**
Cleaning genital area during menstruation		
Regularly	216	74.5
Not regularly	74	25.5
Total	**290**	**100**
Materials used for cleaning genital area during menstruation		
Water only	36	12.4
Water and Soap	254	87.6
Total	**290**	**100**
Types of absorbent materials used by the adolescent girls during menstruation		
Sanitary Pad	96	33.1
Cloth	92	31.7
Tissue	4	1.4
Tissue & Sanitary Pad	52	17.9
Sanitary Pad & Cloth	40	13.8
Others	6	2.1
Total	**290**	**100**
Duration of changing absorbent materials		
≤ 4 Hours	74	25.5
5-7 Hours	116	40.0
> 7 Hours	100	34.5
Total	**290**	**100**
Restrictions imposed and practiced by the family or society during menstruation		
Not visiting religious place or not permitting religious activities	230	79.3
Household Work	6	2.1
Presence at School	36	12.4
Prohibition for taking some foods	18	6.2
Total	**290**	**100**

Table V: Menstrual hygiene management facilities in the school of Respondents

Categories	Number of Adolescent Girls	Percent
Menstrual hygiene management facility exists at the school		
Yes	256	88.7
No	34	11.3
Total	**290**	**100**
Facilities existing at the school (N=256)*		
Availability of pad	62	24.2
Availability of disposal bin in the toilet	20	7.8
Availability of soap or handwash	112	43.8
Availability of sufficient water and light	166	64.8
Total	**290**	**100**
Share of adolescent girls coming to school during menstruation in last one month		
Yes	126	43.4
No	164	56.6
Total	**290**	**100**
Menstrual problems interfering with attendance in school during menstruation in last 1 month		
One day	42	25.6
Two days	46	28.0
Three days	66	40.2
Four days	06	03.7
More than Four days	04	02.4
Total	**164**	**100**

Discussion

This study shows that the age of menstruating girls ranged from 10 to 19 years with a maximum number of girls, that is, 67.6% found between the age group of late adolescents (15–19 years) which was similarly observed in a study in Kolkata where 57% girls belonged to 15–19 years age group,[9] and in another study conducted by Jain et al. 67.55% girls were between 14 and 16 years.[10] In this study, a majority of 95.2% of the girls are Muslim. In some others study conducted in Bangladesh have also the same findings like us that majority of the adolescent girls were Muslims. The type of the family has a high influence in the hygiene status of the adolescent. Hence, the family type of the girl was also considered and 83.8% girls belonged to nuclear family which was comparable to a study where 70.6% of girls belonged to nuclear family.[12]

The mean age of menarche of participants is 12.8 years, while a study at Haryana and other conducted by Sharma et al. showed the mean age to be 12.21 ± 1.70 and 12.8 years, respectively.[13, 14] The pattern of menstruation including the amount of flow, and length of the menstrual cycle is also analyzed, and it was observed that 69% girls have moderate blood flow while 23% have heavy blood flow during their menstruation and 7.6% have scanty. The duration of menstrual flow in our study is 3–5 days for 64% girls, whereas in a study by Mathiyalagen et al. 76.9% girls had bleeding for 3–5 days.[15] In a study by Kanotra et al. the duration of menstrual flow was within 5 days in 96.3% of girls and 3.7% had prolonged menses (>5 days).[16]

As the adolescent girls live in rural areas and the majority of the girls were secondary school, their knowledge about menstruation was poor. The girls in majority were unaware of the scientific basis and physiology of process of menstruation. Only 31% girls were aware of the term menstruation before menarche. Mother was the first informant in 71% cases. This is expected as mothers are usually the closest confidant teacher of most of the growing adolescent girls in our environment. Whereas in a study conducted by Dudeja et al. 56.4% girls were aware of the process of menstruation before menarche and 60.7% girls

revealed mother as their source of information while 31.8% declared that they obtained information from their friends.[17] Other sources of information were sisters, friends, and relatives. A study in Ethiopia reported teacher to be the first source of information in 43.1% of girls.[18]

The adolescent girls had limited knowledge about the reproductive system of human body, and hence it was very sad to observe in this study that 62% of girls did not know about the organ from where menstrual bleeding initiates. Only 35% of the girls could comment uterus as the bleeding organ which was in accordance to a research done by Prajapati et al. in which 17% girls could identify uterus to be the origin of bleeding.[19] In Nigeria, 22.37% of girls commented that bleeding originates in the uterus.[20] In another study by Juyal et al., 29.1% of the girls were having knowledge about the reproductive system as the source of bleeding.[21] It was observed in this study that 14.5% of girls believed it to be a physiological process and 76% were unaware of the reasons for menstruation which was found similar to a study by Misra et al. as stated by 62%.[22]

In this study, about 33% of the girls used sanitary pad, whereas 31% used cloth. A study conducted in Delhi, 63.3% of the girls used sanitary pads, whereas cloth was used by 25.3%. The practice of using pads was found less than that reported from a study by Patavegar et al. in which 85.92% used sanitary pads.[23] Many of the girls preferred cloth pieces and the usual practice was washing the cloth pieces and then drying them in the sun in a private area so that nobody can see them.

Personal hygiene practices such as hand washing, bathing, and cleaning private parts regularly play a vital role in safeguarding oneself from infections. Simple hand washing with soap and water during period of menstruation and after using toilet can be beneficial. In our study, hand washing with only water was found in 12% of girls, whereas 88% of girls used soap and water which was found to be similar to a study in which 28.5% girls used only water and 71.5% used both soap and water for hand washing.[12] In another study by Patle and Kubde, 43.75% of the urban girls and 61.96% of the rural girls used water and 56.25% of urban girls and 38.04% of rural girls used both soap and water to wash hands.[24]

Different restrictions were practiced by most of the girls in this study due to their false beliefs and improper perceptions about menstruation. Traditional practices and superstitions are followed due to lack of knowledge among adolescent girls and their families. Multiple restrictions were followed by every adolescent girl which included not visiting religious places. Restrictions such as separation from the family during menstrual bleeding, not touching anyone in the family, and sleeping outside the house were also found to be practiced. Almost every girl followed some or the other restrictions. In another study carried out in slum and non-slum areas by Rokade and Kumavat, 77% of girls from slum area and 76.61% of girls from non-slum area practiced various types of restrictions, and the commonest restriction reported in both the groups was related to religious activity – 68% in slum and 70.16% in non-slum girls.[25]

Conclusion

This study found that menstrual hygiene practice (MHP) was unsatisfactory among the adolescent girls of the study area. More concerning issue is that a greater number of girls of the study area is not using sanitary pads. Mothers had been a main source of information and consultation. Unsatisfactory hygienic practices among rural girls depend on education status of parents, socio economic status, standard of living, toilet facility and water source at home and school and various other factors. The results of this study will be helpful for women's health nursing, and others health care provider to provide more emphasize on health promotion and counselling program regarding menstrual hygiene practice among rural school going adolescent girls in Northern Bangladesh.

This study recommended that menstrual hygiene, health and sex education program could be conducted at rural schools and also at primary care level among adolescent girls in Bangladesh. Government and NGOs need to focus activities related to dissemination of low-cost sanitary napkin among rural girls. Health education program will be conducted for mothers to increase awareness among mothers through health personnel. Furthermore, intervention research could be developed from these findings. Further study could be conducted to find the relationship between discomforts

of backache and regularity of menstruation among urban girls in Bangladesh.

Authors Contribution

Rahman and Islam conceived the topic, and develop the proposal and data collection tool together. Yesmen participated in the data collection, data coding and entry. Data analysis, and manuscript preparation was done by Islam. Rahman also played major role in manuscript revision and finalization. All the authors gave final approval for this version of the manuscript to be considered for publication.

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