



Original Article

Knowledge and Practice on Menstrual Hygiene among Urban Adolescent Girls in Bangladesh

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Abstract

Introduction: Menstruation-related poor knowledge and understanding among adolescent girls may lead to unsafe personal health care practice that ultimately increases the risk of genitourinary tract infections, drop-out from school, poor academic performance, and overall poor quality of life. Being a developing country, it is an unrecognized problematic area in Bangladesh. Therefore, it is crucial to assess knowledge and practice on menstrual hygiene among urban adolescent girls in Bangladesh.

Methods: This was a community-based cross-sectional study conducted in the Department of Community Medicine of Rajshahi Medical College among 495 purposively selected urban adolescent girls. Data were collected using a semi-structured interviewer-administered questionnaire.

Results: The majority (57.2%) of the respondents in the study were more than 15 years old, and most (93.3%) were Muslim. Most of the girls (82.5%) have experienced menarche within the age range of 12-15 years, and the majority of respondents, 259 (52.32%), were informed about menstruation before menarche. Their source of information about menarche was mothers in most cases. Out of 495 adolescent girls who participated in this study, 70.9% had good knowledge of menstruation. About 82% of girls used commercially made sanitary pads, and 35.2% changed pads or clothes more than three times a day during menstruation.

Conclusion: The majority (70.9%) of adolescent girls had good knowledge of menstruation, and 73.3% had a good practice on menstrual hygiene. Therefore, there is a need to design and implement universal awareness creation and advocacy programs to improve their knowledge of safe and healthy menstruation management and promote good hygienic practices by creating an appropriate supportive home and social environment for all the adolescent girls.

Keywords: Menstrual hygiene, Adolescent girl, Knowledge & practice.

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Introduction

Adolescence in girls has been defined as a special period that signifies the transition from girlhood to

womanhood.¹ Menstruation is the periodic vaginal bleeding that occurs with the shedding of the uterine mucosa. It is a universal, normal, recurrent

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and physiological event. Menstrual hygiene deals with the special health care that needs special attention during the menstrual cycle because dominant physiological and emotional changes occur at that time.²

The perception and reaction of girls towards menstruation depend to a larger extent upon their awareness, knowledge, positive attitudes, and discussion with parents to manage their menstrual bleeding safely and cleanly.³ Menstrual hygiene practice among adolescent girls is essential because inadequate management of menstrual hygiene has considerable physical, reproductive, and psychological implications.⁴ Safe menstrual hygienic practices can have paramount importance in helping millions of women suffering from complicated and complex gynecological problems due to the poor practice of menstrual hygiene.⁵ Good menstrual hygiene practices are essential during menstruation because it is also the ideal time for girls to join different situations, including high schools. Good menstrual hygiene practices may be the regular change of used clothing and underwear, change of sanitary pads every three to four hours, daily bathing, adequate washing of genitalia after each voiding of urine and/or feces, and maintaining a balanced diet with plenty of water, fruits, and vegetables rich in vitamins, iron, and calcium.⁶

Menstruation is linked with several perceptions and practices, which sometimes result in adverse, devastating, and poor health outcomes.⁷ Girls sometimes experience fear, confusion, and shame during their menstruation period because of smell, leakage, staining of clothes, and dropping of sanitary materials during class schedules. School-age girls in Bangladesh are insufficiently informed about reproductive health and the process of menstruation. These can also negatively impact concentration, class participation, and confidence in their academic studies because in Bangladesh, due to cultural taboos, the issue of menstruation is rarely mentioned publicly.⁸

Although poor knowledge and unsafe menstrual hygiene practices have many considerable clinical implications for the girls themselves and their future offspring, knowledge of adolescent girls

regarding menstruation is flawed, and their hygienic practices are not correct, particularly in the lower socio-economic condition in Bangladesh.⁹ Also, due to local religious traditions, most adolescent girls lack scientific knowledge about menstruation hygiene. Most of the time, teenage girls are reluctant to openly discuss their reproductive health problems with their parents and do not seek help regarding their menstrual problems.¹⁰ It has been reported that 40–45% of adolescent school girls have inadequate knowledge and unsafe menstrual hygienic practice in Bangladesh.¹⁰ Moreover, there is a need to re-examine the hygienic menstrual practices among adolescents in Bangladesh.^{11,12} Increased knowledge about menstruation from childhood may escalate safe practices and help mitigate the suffering of millions of girls from many gynecological problems.^{7,18} This is a recognized and unaddressed public health problem in Bangladesh.

Therefore, this study aimed to measure the perceptions regarding menstrual hygiene and to observe the practices during the menstrual period among adolescent girls in Bangladesh. The result of this study might be helpful for adolescent girls and planning, policy-making and developing appropriate intervention mechanisms.

Materials and Methods

This cross-sectional study was carried out in the Department of Community Medicine, Rajshahi Medical College, Rajshahi, from July 2020 to December 2020. Assuming 95% confidence and 80% power, the anticipated prevalence of knowledge among adolescent girls was 50% ($p = 0.05$), and the degree of precision was 5% (accuracy = 10% of the anticipated 'p'=0.05); the sample size was estimated at 384. We further assumed 10% nonresponse and 10% missing values while conducting the study during the COVID-19 pandemic. So, the final estimated sample size was 461. A total of 495 data was collected purposively from adolescent girls residing in different urban and peri-urban areas of Bangladesh. Institutional Review Board (IRB) reviewed the Protocol to make sure that ethical

issues were handled correctly. The respondents were informed about the objectives, purpose & other relevant information of the study and then informed written consent was taken. Privacy and confidentiality were maintained strictly.

A semi-structured pre-tested interviewer-administered questionnaire in Bangla was used for data collection. In the knowledge part, there were seven statements on a 4-point Likert scale (Score 0-3 for each statement). So minimum knowledge score was 0, and the maximum knowledge score was 21 for each respondent. Higher performance is related to the higher score obtained from the knowledge portion of the questionnaire. Then this knowledge score was divided into three categories (poor knowledge-0 to 7, average knowledge-8 to 14, and good knowledge-15 to 21).

For the assessment of practice there were nine questions with binary responses for each question, no = 0 and yes = 1; 0 for a negative answer and 1 for the correct answer. So minimum practice score was 0, and the maximum practice score was 9 for each respondent. Higher performance is related to the higher score obtained from the practice portion of the questionnaire. Then this practice score was divided into 2 categories (Poor practice-1 to 5 and good practice-6 to 9).

All data were analyzed by using the SPSS software, 24-version. Categorical variables were summarized by using frequency and percentages, while continuous variables were summarized by Means and Standard Deviations (SD). Association of knowledge, attitude, and practice with sociodemographic characteristics were determined by chi-square test with appropriate probability level ($p < 0.05$ or 0.01)

Results

Of the 500 adolescent girls invited to participate, 495 completed the interview with a response rate of 99%. The Mean age of respondents was 16.02 ± 1.82 years. Most of them were Muslims (93.3%), and the rest of them were Hindu (6.5%) & Buddhist (0.2%). About 94.1% of adolescent girls were living with their parents. Most respondents (89.7%) lived in a nuclear family, and almost half (45.9%) were the eldest in birth order. Three-quarters of the respondents (73.9%) lived in their own houses, and the majority (34.9%) experienced menarche at the age of 12. The majority (45.7%) of the respondents' average monthly family expenditure was ≤ 20000 taka, and only (9.5%) respondents' family expenditure was 51000-100000 taka (Table 01).

Table 01: Sociodemographic characteristics of the respondents (n=495).

Variables	Categories	Frequency	Percentage (%)
Age	≤ 15 years	212	42.8
	> 15 years	283	57.2
Mean \pm SD	16.02 \pm 1.82 years		
Living with	Parents	466	94.1
	Relatives	11	2.2
	Peers/ Colleagues	0	0
	Alone	1	0.2
	Others	17	3.4
Religion	Islam	462	93.3
	Hindu	32	6.5

	Christian	0	0
	Buddhist	1	0.2
	Others	0	0
Birth order	Eldest	227	45.9
	Middle	113	22.8
	Youngest	155	31.3
Maternal education	Illiterate	49	9.3
	Primary	74	14.3
	Secondary	163	13.7
	Higher Secondary	89	17.6
	Graduate & above	120	45.1
Paternal education	Illiterate	46	9.3
	Primary	71	14.3
	Secondary	68	13.7
	Higher Secondary	87	17.6
	Graduate & above	223	45.2
Family structure	Nuclear	444	89.7
	Joint	51	10.3
Type of residence	Own house	366	73.9
	Rented house	129	26.1
Average monthly expenditure in taka	≤20000	226	45.7
	21000-50000	222	44.8
	51000-100000	47	9.5

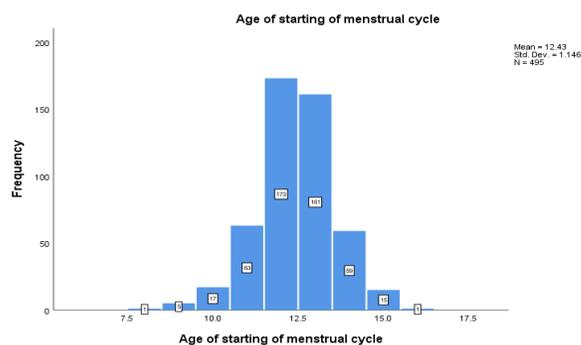


Figure-I: Distribution of respondents according to the age of starting of the menstrual cycle (n=495)

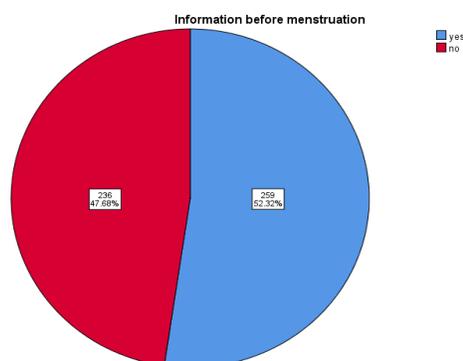


Figure II: Distribution of respondents based on knowledge about menstruation before menarche (n=495)

Most (82.5%) of the girls have experienced menarche within the age range of 12-15 years, and only 17.3% experienced menarche at less than 12 years. The majority of respondents, 52.32%, were informed about menstruation before menarche. A large proportion (70.9%) of adolescent girls mentioned that they had experienced dysmenorrhea (severe pain during menstruation). Most (82.4%) of them had regular menstrual cycles. About 52% of adolescent girls had information regarding menstruation hygienic practices before their menarche. Among them, 23.4% mentioned their mothers as the primary source of information, 15% got such information from friends, 6.5% from relatives, 4% from teachers & 3.2% from other sources (Table 02).

Table 02: Reproductive health characteristics of adolescent girls (n=495)

Variables	Categories	Frequency	Percentage (%)
Age of Menarche	<12 years	86	17.3
	12-15 years	408	82.5
	>15 years	1	0.2
Regularity of Menses (Last six months)	Yes	408	82.4
	No	87	17.6
Duration of Menstrual Cycle	<22 days	5	1.0
	22-35 days	450	90.9
	>35 days	40	8.1
Duration of menses flow	<3 days	24	4.8
	3-5 days	318	64.2
	>5 days	153	30.7
Amount of menstrual flow	<30 ml	20	4.1
	30-80 ml	462	93.3
	>80 ml	13	2.6
Abdominal pain during menstruation	Yes	351	70.9

	No	144	28.9
History of abdominal pain during menstruation among female family members	Yes	243	49.1
	No	252	50.9
Information related to menstruation before menarche	Yes	259	52.3
	No	236	47.7
Source of information (n=259)	Mother	116	23.4
	Relatives	32	6.5
	Teachers	20	4.0
	Friends	75	15.2
	Others	16	3.2

Table 03: Knowledge regarding menstrual bleeding (n=495)

Statement	Strongly disagree	Disagree	Agree	Strongly agree
	Frequency (%)			
It is a normal phenomenon	1 (0.2%)	9 (1.8%)	142 (28.7%)	343 (69.3%)
It is unique to females	5 (1.0%)	6 (1.2%)	95 (19.2%)	389 (78.6%)
It is a lifelong process	258 (52.1%)	201 (40.6%)	27 (5.5%)	9 (1.8%)
It will be stopped after marriage	298 (60.2%)	183 (37.0%)	6 (1.2%)	8 (1.6%)
It is a sign of pregnancy	225 (45.5%)	165 (33.3%)	79 (16.0%)	26 (5.3%)
It has a foul smell	26 (5.3%)	96 (19.4%)	289 (58.4%)	84 (17.0%)
It is a pathological condition	257 (51.9%)	160 (32.3%)	59 (11.9%)	19 (3.8%)

Most (69.3%) of the respondents knew it was a normal physiological phenomenon, and 78.6% seemed to be unique to females. They strongly disagree with the fact that "Disease can be caused by menses flow" & "Menses a lifelong process," endorsed by 51.9% & 52.1%, respectively (Table 3).

Table 04: Knowledge regarding the source of menstrual bleeding (n=495)

Variables	Category	Frequency	Percentage (%)
Source of bleeding	Uterus	296	59.8
	Urinary Bladder	11	2.2
	Vagina	19	3.8
	Abdomen	23	4.6
	Do not know	144	29.1
	Others	02	0.4
Causes of bleeding	Hormones	345	69.7
	Sickness	22	4.4
	Curse	1	0.2
	Do not know	114	23.0
	Others	13	2.6

Half (59.8%) of the respondents knew that the source of menstrual blood was the uterus, and about 70% of adolescent girls knew that this bleeding was due to hormones. But 29.1% of girls did not see the source of the bleeding, and 23.0% of girls did not know the cause (Table 04).

Table 05: Perceived knowledge about menstrual hygiene practice among the respondents (n=495)

Variables	Category	Frequency	Percentage (%)
It is not allowed to touch others during menstruation	Yes	50	10.1
	No	445	89.9
It is not allowed to go to kitchens during menses	Yes	25	5.1
	No	445	94.9
It is embarrassing or not suitable to discuss with anyone about menses	Yes	172	34.7
	No	323	65.3
Activities done by menstruating women are not blessed	Yes	119	24.0
	No	376	76.0
Being free from menses is a fate	Yes	88	17.8
	No	407	82.2

Adolescent girls towards menstruation attributed positive perception & general knowledge. However, they strongly disagree that "Disease can be caused by menses flow" & "Menses a lifelong process," endorsed by 51.9% & 52.1%, respectively. Generally, most girls had fundamental knowledge regarding the source & cause of menstrual bleeding (about 65%) (Table 05).

Table 06: Menstrual hygiene practices among the respondents (n=495)

Variables	Category	Frequency	Percentage (%)
Use of homemade absorbent materials during menstrual flow	Yes	92	18.6
	No	403	81.4
Drying sanitary clothing in sunlight	Yes	124	25.1
	No	371	74.9
Use of commercially made sanitary pads during menstruation period	Yes	406	82.0
	No	89	18.0
Changing pads or clothes more than three times a day during menstruation	Yes	174	35.2
	No	321	64.8
Taking a bath daily with soap during menstruation	Yes	491	99.2
	No	4	0.8
Use of clean clothes and washing with soap and water during menstrual bleeding.	Yes	490	99
	No	5	1
Disposal of the pads by wrapping them with paper	Yes	306	61.8
	No	189	38.2
Disposal of used sanitary pads in a dustbin	Yes	418	84.4
	No	77	15.6

Most girls (82%) used commercially made sanitary pads, and about 19% used homemade absorbents. Two-thirds (64.8%) of them did not change their sanitary pad more than three times a day (Table 06).

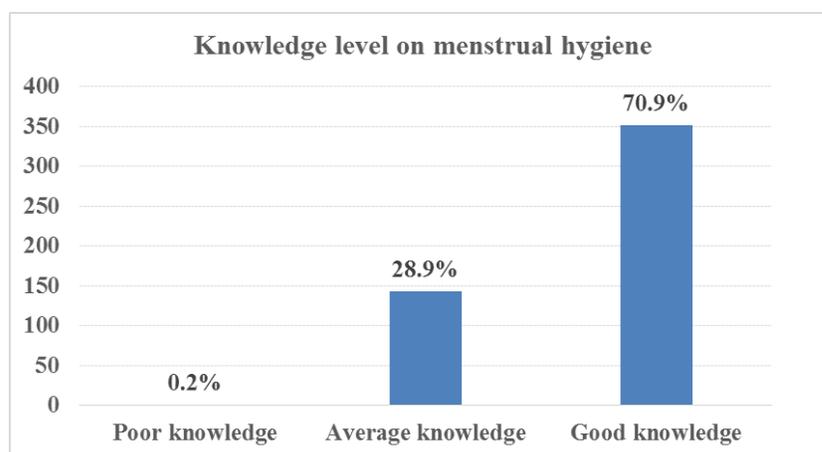


Figure III: Distribution of respondents according to the knowledge level of menstrual hygiene (n=495)

The majority (70.9%) of respondents had good knowledge of menstrual hygiene, and only a few (0.2%) had poor knowledge of menstrual hygiene.

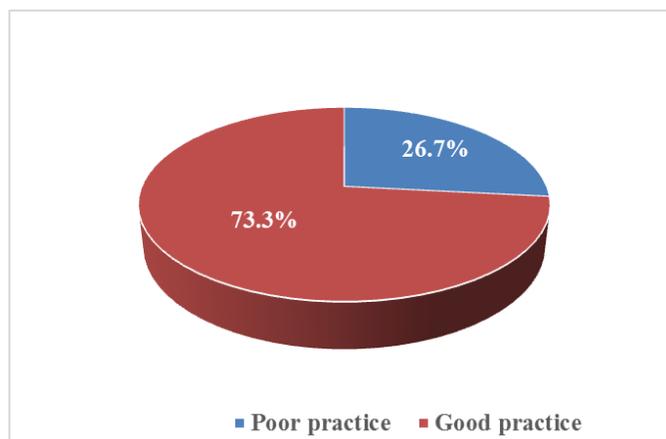


Figure IV: Distribution of respondents according to the level of practice of menstrual hygiene (n=495)

Most (73.3%) of the respondents had good practice in menstrual hygiene, and only 26.7% had poor practice.

Discussion

Poor menstrual hygiene is associated with certain reproductive tract infections.^{14,15} As adolescents have no chance of receiving the proper required training on menstruation at the appropriate time in developing countries, it is possible that menarche could lead to some critical situations such as stress, anxiety, or unhealthy behavior.¹³ This study aimed to assess the knowledge and practice of menstrual hygiene among urban adolescent girls in Bangladesh.

In the current study, the mean age of respondents was 16.02 ± 1.82 years. A study done by Kailasraj et al.,¹⁴ in India reported that the mean age of urban girls was 12.87 ± 0.94 years and this mean age was lower than our study.¹⁴

In our study, most (93.3%) respondents were Muslims, and 6.5% were Hindus. A survey by Khanal et al.,¹⁵ in Nepal, showed that 92% were Hindus. In the current study, most (89.7%) respondents lived in a nuclear family. This result differed from a study done by Khanal et al.,¹⁵ where only 55 percent of participants lived in single families.

In this study, most girls (82.5%) have experienced menarche within the age range of 12-15 years. Khanal et al.,¹⁵ showed that the mean age at menarche was 12.77 ± 0.98 years. Similar findings were also found in a study conducted by Karki et al.,¹⁶ in a slum area of Kathmandu where the mean age of menarche was 12.51 ± 1.101 years. Sapkota et al.,¹⁷ conducted research in Panchakanya VDC Sunsari was reported that the mean age of menarche was 13.1 ± 0.9 years. Geographical, environmental, nutritional, and socio-economic factors are responsible for the variation of the mean age of menarche.

In the current study majority (52.32%) of the respondents were informed about menstruation before menarche. Nearly similar findings were found in a study done by Prajapati et al.,¹⁸ in the rural Kheda district in India found that the pre-knowledge regarding menstruation of the study subjects was 47.5%. But findings were not similar to those done by Pradhan et al.,¹⁹ in Nepal, and Khanal et al.,¹⁵ in Nepal. But Kailasraj et al.,¹⁴ reported that only 43.4% were aware of menstruation before attaining menarche.

In this study, 69.3% of the respondents knew that it was a normal physiological phenomenon. A

nearly similar finding was found in a study done by Kailasraj et al.,¹⁴ where 62.4% were aware that menstruation is a natural process.

In the present study, most of the girls (82%) used commercially made sanitary pads. A similar finding was found in a study by UNICEF²¹ in Bhutan: every nine out of ten (91.9 %) schoolgirls used sanitary pads. But this finding was not similar to a survey done by Kailasraj et al.,¹⁴ where 58.9% used sanitary pads during menstruation. Khanal et al.,¹⁵ reported that 59.2 percent of girls used commercial hygienic pads during menstruation, while the study conducted by Karki S et al.,²⁰ found 65.5%. Only 10.5% used sanitary pads in a survey conducted in the rural Kheda district in India by Prajapatiet al. (2015)¹⁸.

In this study, 35.2% of respondents changed pads or clothes more than three times a day during menstruation. Kailasraj et al.,¹⁴ showed that 46.8% of girls changed absorbents twice a day. Khanal et al.,¹⁵ showed that half (50%) of the girls changed absorbent 1 to 2 times a day, and 37.2% reused cloth pieces. A study conducted in rural Kheda district, India, by Prajapati et al.,¹⁸ reported that 77% changed absorbent 1 to 2 times in a day and 51.5% of girls reused cloth pieces. A study by Karki et al.,²⁰ reported that 35.7% of girls changed absorbent 1 to 2 times a day. There is a significant difference observed among Bangladeshi, Nepalese and Indian contexts.

In our study, 84.4% of girls discarded used sanitary pads in the dustbin. Khanal et al.,¹⁵ reported that used places were thrown elsewhere by 23% and disposed of in dustbins by 16.3%. Sapkota D et al.,¹⁷ in Nepal, showed that 28% of girls disposed of used materials by throwing them elsewhere. The difference should be due to a place of residence, i.e., urban, semi-urban and rural areas. In the current study, 23.4% mentioned their mothers as the primary source of information, 15% got such information from friends, 6.5% from relatives, 4% from teachers & 3.2% from other sources. Khanal et al.,¹⁵ reported that 61% of respondents got information regarding menstruation from their mother, 12% from their sister, 16% from teachers, and 9.8% from friends.

Sapkota D et al.,¹⁷ in Nepal reported that the primary source of information was the mother, which was in accordance with our findings.

Although menstruation is a natural process, it is related to several misconceptions and practices which results in adverse health outcome. Without scientific information and awareness of menstruation, adolescent girls suffer from reproductive health morbidity. As knowledge is an awareness of a specific subject matter, we should be careful to inform young people about these matters to teenage girls.

Conclusion

This study reported that about a third of the girls had a low knowledge of menstruation. The results of this study indicated a need for the establishment of a comprehensive health education program with strong familial input that involves instruction & learning related to menstruation. Mass media can provide information in a socially and religiously acceptable way. A mixed-method study may be conducted to better understand and interpret the problem.

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Conflict of interest: None declared

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