

Adolescent Girls' Knowledge Regarding Menstrual Hygiene at Institute of Public Health School and College, Mohakhali, Dhaka

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Abstract: Menstrual hygiene refers to special health care requirement during menstruation. Knowledgeable adolescent girls' lays a major role in prevention of complication that may arise due to poor menstrual hygiene. **Aim:** The aim of this study was to assess the level of adolescent girls' knowledge regarding menstrual hygiene at Institute of Public Health School and College Mohakhali, Dhaka. **Methods and Materials:** A descriptive type of cross-sectional study was conducted with a sample of 75 those were conveniently selected from class-VII to IX of Institute of Public Health School and College, Mohakhali, Dhaka. Data were collected by researchers using face to face interview by knowledge related menstrual hygiene questionnaire. Data were analyzed using descriptive statistics like frequencies, percentages and mean. **Results** The mean age of respondents was 14 years with the range of 12-17years. Most of the Respondents (91%) were Muslims. Majority of the respondents (96%) had experience of menarche. Among the total number of respondents 39% were in class nine, 33% respondents were in class eight and 28% respondents were in class seven respectively. Among the total number of the respondents 63% got information from their mother, 37% from others about menstrual hygiene. Overall findings showed that 40% respondents had poor level of knowledge, 23% respondents had average level of knowledge, 19 % respondents had very good level of knowledge, 17% had good level of knowledge and only 1% respondents had excellent level of knowledge on Menstrual hygiene. Adolescent girls' educational status influenced the knowledge of menstrual hygiene. Those respondents had class nine level of education, they had more knowledge than class eight and seven. The mean of total knowledge score of class ix respondents was =70.50 whereas class viii was =57.00 and class vii was =50.20. **Conclusion and Recommendation:** Result suggested that education of the respondents influenced the knowledge of menstrual hygiene. Therefore, awareness by educational program is recommended.

Keywords: Adolescent Girls, Knowledge, Menstrual Hygiene.

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I. INTRODUCTION

➤ *Background of the Study*

Menstruation is a normal phenomenon among grown females like adolescent girls' who experience flowing of blood for one to seven days every month from the age of menarche to menopause. Menstrual hygiene refers to special health care requirement during menstruation such as appropriate use of hygiene material like sanitary pads or clean and soft absorbent, adequate washing of genital area and proper disposal of used absorbent pads during menstruation. Menstrual hygiene knowledge is a crucial thing of menstrual period because of inadequate knowledge of menstrual hygiene enhances of the incidence of Reproductive Tract Infection (RTI), cystitis, cervicitis, vaginitis, cervix cancer, Pelvic Inflammatory Disease (PID) and Urinary Tract Infection (UTI) [3;9;12].

World Health Organization, (2014) has defined adolescence as the age group 10-19 years. The transitional period from childhood to adulthood is considered as adolescence when maximum amount of physical, psychological, developmental and behavioral changes take place. During menarche adolescent girls are needed sufficient knowledge and special care because of some physical, psychological and social problems linked with menstruation and menstrual hygiene [8; 16]. In low -middle socio -economic countries have insufficient knowledge regarding menstruation and menstrual hygiene earlier to their menarche [3;9]. Menstrual disturbances are very common in adolescents and unhygienic practices during menstruation can result in various gynecological problems in later life [13].

Reproductive Tract Infection incidence rate throughout the world is estimated at about 2.3 million/year [9]. About 1 out of 3 adolescent girls in South Asia do not have knowledge about menstruation, 48% Irani girls and 10% of girls in India treat menstruation as a disease [7]. The prevalence of RTI present in clothes pieces' users (43.8%), then sanitary pads (34.6%) users among them 75.23% girls were not aware about the source of menstruation, 80.62% did not know the causes of menstrual bleeding [8]. Menstruation is still considered as unclean or dirty in Bangladeshi and Indian society. Near about 10% of Urinary tract infection and 10% of vaginosis and 75% of adolescents had a history of genital tract infection due to poor menstrual hygiene [4]. There are millions of adolescents all over the world are unable to carry out their menstrual period because of insufficient knowledge about menstrual hygiene [3].

Menstrual hygiene management is an emergent learning aspect of health education for adolescent girls [9]. Adolescent's those who have adequate knowledge about menstrual hygiene and do safe practice are less vulnerable to RTI and its related problems [3;8]. Now a day's knowledge about menstrual hygiene management among adolescent girls is notifiable issue to enhance adolescent health [16]. Besides there are very few nursing research was conducted on this title in Bangladesh. It will be considered as appropriate to search the knowledge about menstrual hygiene among the adolescent girls in Bangladesh. Therefore, it is necessary to

explore the level of knowledge regarding menstrual hygiene among adolescent girls to reduce the morbidity related to this physical condition.

II. PROBLEM STATEMENT

Adolescent menstrual hygiene is an indispensable thing to establish adolescent health wellbeing. Inadequate menstrual hygiene influences and increases the health issue like – RTI, UTI, rashes and itching, Pelvic Inflammatory Diseases and complications that lead to infertility in later life, exposed psychological and social effect on adolescent girls. Many myths and social norms restrict girls' levels of participation in society. This can make their daily lives difficult and limit their freedom. About 88.5% of urban participant have negative reaction to menstruation [2;4;11].

In Bangladesh, insufficient knowledge about menstrual hygiene which has led to misconception and increased absence from school during menstruation. Near about 10% of Urinary tract infection and 10% of vaginosis and 75% of adolescents had a history of genital tract infection due to poor menstrual hygiene. Menstruation rarely exposed publicly due to consider it cultural taboos. Not only that Bangladesh education did not consider the menstrual hygiene management as a mandatory topic [2;4]. Several studies conducted in schools throughout parts of Nepal and India show inadequate knowledge of menstrual hygiene and practices that poor management of menstrual period may accompany discomfort, reproductive tract infection, smelling, and embarrassment which further leads to various sexually transmitted diseases [3].

➤ *Justification of the Study*

An adequate knowledge about menstrual hygiene can reduce the vulnerability of upcoming reproductive disorder [2]. To create global awareness regarding menstrual hygiene 28th of May 2014 first celebrated as Global Menstrual Day [4]. Menstrual hygiene is some essential things to establish adolescent health wellbeing. A study conducted in Riyadh, Saudi Arabia revealed that 61.5% of girls got their menstrual information from their mother first, where teacher was last source of information [2]. It was also observed that when the teachers were approached, students expressed being embarrassed and hesitant in discussing these issues with their students in India [11].

A study showed that girls preferred to suffer the discomfort of using thick cloth, restricting their movement, and using friends' toilets rather than use the school toilet due to inadequate knowledge of menstrual hygiene [5]. Adolescents need to have adequate knowledge about menstrual hygiene to avoid menstrual health related discomforts RTI, PID, UTI and complication [3;9]. Near about 10% of Urinary tract infection and 10% of vaginosis and 75% of adolescents had a history of genital tract infection due to poor menstrual hygiene [4]. For this reason, this is important to assess the level of knowledge regarding menstrual hygiene among adolescent girls and the result of this study will be helpful to recommended providing

appropriate knowledge on menstrual hygiene to protect health and wellbeing of adolescent girls.

➤ *Research Question:*

What is the level of Adolescent Girls Knowledge Regarding Menstrual Hygiene at Institute of Public Health School and College, Mohakhali, Dhaka?

- **Aim:** The aim of this study is to assess the level of adolescent girls' knowledge regarding menstrual hygiene at Institute of Public Health School and College, Mohakhali, Dhaka.

• *Objectives:*

- ✓ To identify the level of adolescent girls' knowledge regarding the concept of menstruation.
- ✓ To find out the level of adolescent girls' knowledge regarding management of menstrual hygiene.
- ✓ To measure the level of adolescent girls' knowledge regarding the complications due to poor menstrual hygiene.
- ✓ To state the adolescent girls' socio-demographic characteristics.

➤ *Research variables*

• *Socio-Demographic Variables*

- ✓ Age
- ✓ Level of class
- ✓ Religion
- ✓ Housing status
- ✓ Parents' educational status
- ✓ Father's education
- ✓ Mother's education
- ✓ Parents' occupation
- ✓ Father's occupation
- ✓ Mother's occupation
- ✓ Monthly family income
- ✓ Age of menarche
- ✓ Source of obtained information regarding menstrual hygiene.

➤ *Knowledge Related Variables:*

- Concept of menstruation includes (meaning, cause and duration of menstruation, age of menarche, source of menstrual bleeding, age of puberty).
- Management of menstrual hygiene.
- Complications due to poor menstrual hygiene.

➤ *Operational Definitions*

- **Adolescent:** In this study adolescent girls means those girls who have 12-17 years' age and those are studying at Institute of public health school and college Mohakhali, Dhaka.
- **Knowledge of menstrual hygiene:** In this study the researchers considered to explore the level of knowledge of respondents about menstrual hygiene which refers to

the concept of menstruation, management of menstrual hygiene, and complications due to improper menstrual hygiene.

III. METHODS AND MATERIALS

This chapter contains description of the methods and materials of the study. For achieving the objectives, the study was conducted systematically and followed the methodology mentioned below:

➤ *Study design*

A descriptive type of cross-sectional study was carried out to assess the level of adolescent girls' knowledge regarding menstrual hygiene at Institute of Public Health School and College Mohakhali, Dhaka.

➤ *Study Period*

The study was conducted from July 2022 to June 2023.

➤ *Study Setting*

The study was conducted at Institute of Public Health School and College, Mohakhali, Dhaka. It is a renowned educational Institute and was established in 1967. Near about 1100 students get opportunity to study in both boys' and girls' section.

➤ *Study Population*

The study population of the selected area who were studying in class-VII, class-VIII, class-IX at Institute of Public Health School and College Mohakhali, Dhaka particularly adolescent girls, in this school. The total number of students were 300 studied in those classes.

➤ *Sample Size*

The sample size of the study was selected 75 according to 25% proportion of estimation from the total number of population (N=300) [10].

➤ *Sampling Technique*

Simple random technique was adopted by lottery for selecting the sample of the study by the researchers who was met the inclusion criteria.

➤ *Inclusion Criteria*

- Adolescent girls' (12-17 years) who were studying in Institute of Public Health School and College Mohakhali, Dhaka.
- Adolescent girls' who were present and agreed voluntarily participate in the study during data collection.
- Adolescent girls' those who were psychologically and physically sound.

➤ *Exclusion Criteria*

Those girls were excluded from the study who did not meet the inclusion criteria.

➤ *Research Instrument*

A structure questionnaire was developed by the researchers according to the objectives and variables of the

study after reviewing the relevant literatures. A structure questionnaire was developed in English then it was translated in Bangla version based on back translation process for understanding the participant.

- The questionnaire was consisted of two parts
- Part I: Socio-demographic questionnaire: consisted of 12 items. The questionnaire was designed to collect the following data: age, level of class, religion, housing status, parent’s occupation, parent’s monthly income, parents’ education, age of menarche, source of information regarding menstrual hygiene.
- Part II: Knowledge related questions on menstrual hygiene: consisted of 03 domains. Domain-1= concept of menstruation which contain 06 questions, domain-2= management of menstrual hygiene with 09 questions, Domain-3= complications due to poor menstrual hygiene management which contains 05 questions.

Each question had 04(four) options and 01(one) option was considered as correct answer. One mark was allocated for correct answer and thus total marks were 20(twenty). Then 20 (twenty) marks were converted in 100% by respondents during analysis.

➤ *Validity*

The validity of the questionnaire was assessed and reviewed by the three experts (subject teachers and guide teachers) in College of Nursing Mohakhali, Dhaka. Then researchers modified the instruments based on expert recommendations.

➤ *Reliability*

Reliability was done by pre-tests of the questionnaire. A pre-test was conducted in another school (T&T School, Mohakhali) on the same characteristics of 10 samples to check acceptancy and consistency of the instrument. (The mean of total score of menstrual hygiene knowledge was 82.4). After pretesting and reviewing of the pretesting results, the necessary corrections were made for finalizing of data collection procedure.

➤ *Ethical Consideration*

- Informed Consent: A written permission was obtained from the Principal, College of Nursing Mohakhali, Dhaka.

After approval of the study proposal permission was taken from the school authority for data collection. Memo no. P.F.1-1/2003/CN/300/1(30).

- Voluntary Participation: Objectives of the study was explained to the adolescent girls to participate them voluntarily then written consent was taken from the respondents by the researchers.
- Confidentiality, Anonymity and Privacy: Respondents were assured about human rights of them and confidentiality, anonymity and privacy were maintained strictly.
- No Harm: Respondents were assured that there was no any harm to participate in this study.
- Right to Withdrawn: The respondents were assured that they could be withdrawn from the study at any time without any hesitation. The accumulated data will be utilized for academic purpose only.

➤ *Data Collection Procedure*

The researchers were collected data by face-to-face interview through Bangla questionnaire. It was taken 15-20 minutes for individual participant. Before data collection the researchers explained the purpose of the study to the participant and written consent was obtained from them.

After completing the questionnaire, the researcher thanked the respondents for spending time to participate in this study. This process was continued until desired sample found. Data were collected from July to June 2023.

➤ *Data Processing and Analysis*

Collected data was checked, organized, edited, entered into the master sheet then, it was analyzed manually by the researchers with the help of scientific calculator. The descriptive statistics was used for the analysis of the respondents’ characteristics, distribution and level of knowledge of menstrual hygiene in terms of frequency, percentages, range and mean. The important significant findings were analyzed to fulfill the objectives of the study.

➤ *Data presentation*

The results were presented by using column and tables with interpretation.

Table 1 Grading Criteria

SL.NO	Knowledge level (Grade)	Percentage %
1.	Excellent	90-100%
2.	Very good	80-89%
3.	Good	70-79%
4.	Average	60-69%
5.	Poor	<60%

IV. RESULT

This chapter provides a detailed description of the results with appropriate interpretation according to objectives

of this study. The results of the variables are provided according to objectives of the as simple frequency, percentage, mean in tables and charts.

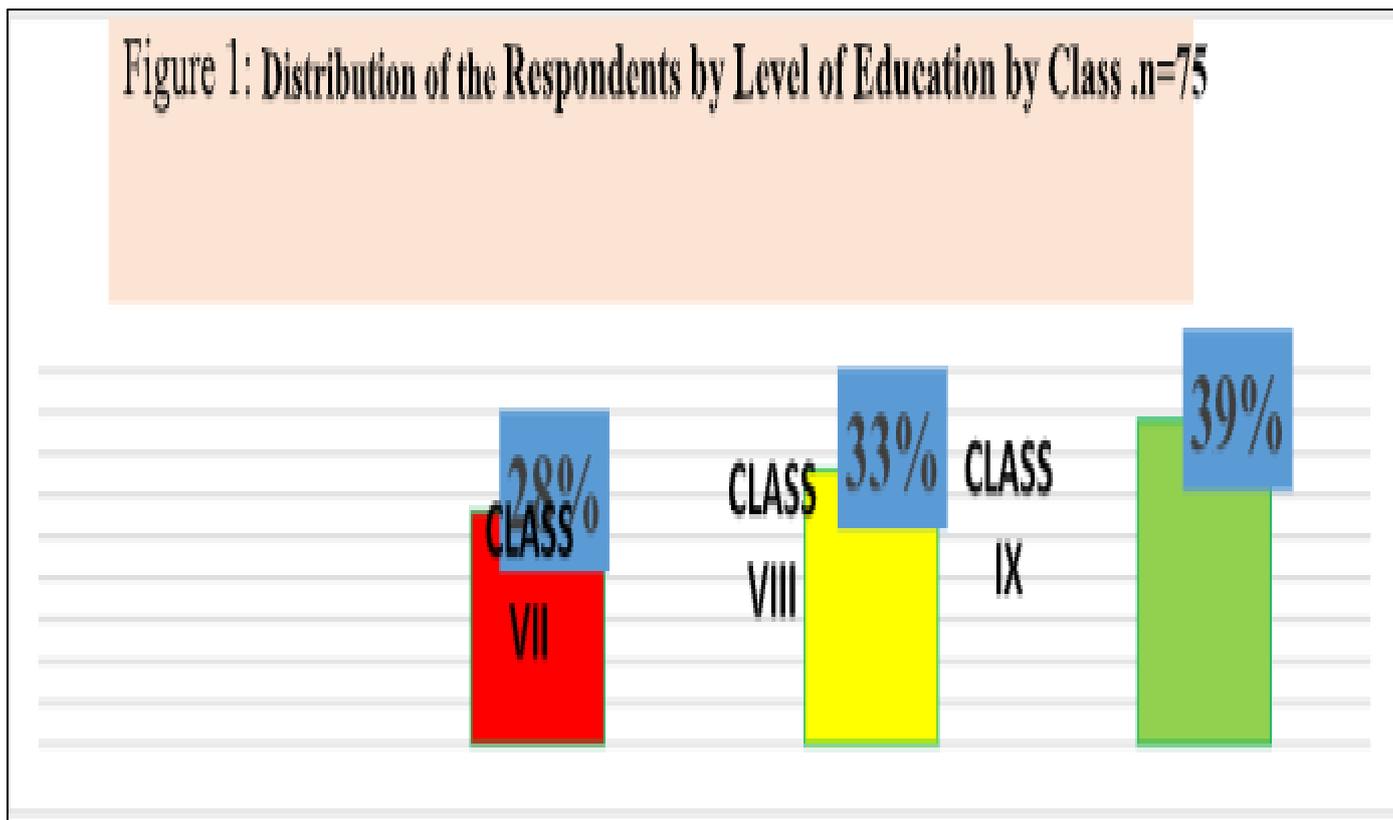


Fig 1 Socio-Demographic Information

Description: Figure-1. The above column shows level of class of the respondents. Among them 39% respondents

were class-IX, 33% of respondents were class-VIII and 28% of respondents were class-VII.

Table 2 Distribution of the Respondents’ Socio–Demographic Characteristics n=75

Variables	Categories	f	%
Age	mean = 14 years with the range of 12 to 17 years	75	100
Religion	Islam	68	91
	Hindu	4	5
	Christian	3	4
	Buddhist	0	0
Housing Condition	Kacha	1	1.3
	Semi paka	16	21.3
	Paka	51	68
	Others	7	9.3
Father’s educational qualification	Illiterate	7	9
	Primary School	29	39
	Secondary	31	41
	Graduate	8	11
Mother’s educational qualification	Illiterate	5	7
	Primary School	39	52
	Secondary	25	33
	Graduate	6	8
Father’s occupation	Daily labor	5	7
	Service	36	48
	Business	26	35
	Others	8	10
Mother’s occupation	Housewife	57	76
	Service	17	23
	Day labor	-	-
	Others	1	1
Average monthly family income	5000-10000	12	16

	11000-15000	18	24
	16000-20000	32	43
	More than 20000	13	17
Face the menarche	Yes	75	100
	No	00	0
Started Menstruation	9-12 years	42	56
	13-16 years	18	24
	Date is unknown	15	20
Information about menstruation	Mother/Father	47	63
	Sister/Brother	15	20
	Grandmother	3	4
	Others	10	13

• **Description:** Table 1. Presents the socio-demographic characteristics of the respondents. It shows that, the respondents mean age was 14 years with the range of 12-17 years. The total subjects were female. The most (91%) of the Respondents were Muslims. Among all of the respondents 68% respondents housing condition was paka, and only 1% respondents housing condition was kacha. Their 41% father’s educational level had secondary, 31% primary, 11% graduate and 9% had illiterate. On the other hand, 52% respondent’s mother’s educational level were primary, 33% secondary, 8% graduate and 7% illiterate. This table also shows that the 48% respondents father’s occupation were service, 35% business, 10% others and 7% daily labor. On the other hand, 76% mother’s occupation was housewife, 23% service, 1% others. Among all of the respondents 43%

family income was average monthly (16000-20000), 24% and 16% had 5000-10000. Majority of the respondents 96% were face of menarche. Among all of them 56%, respondents age of menarche was 9-12 years and 20% respondents were unknown about the date of menarche. Among all of the respondents 63% got information about menstruation from their mother and only 4% from their grandmother.

➤ *Part 2: Knowledge Based Findings*

- In this section results are presented according to objectives of this study.

Table 2 Distribution of the Adolescent Girls’ Knowledge Regarding Concept of Menstruation.n=75

Sl. No.	Items	Correct Answer		Incorrect Answer	
		(f)	(%)	(f)	(%)
1	Menstruation is a normal process	68	91	7	9
2	The normal age of puberty is between 8-13 age	34	45	41	55
3	Uterus is the source of menstrual bleeding	31	41	44	59
4	Hormonal secretion is the cause of menstruation	53	71	22	29
5	Normal menstrual bleeding is state from 3-7 days	59	79	16	21
6	Normal menstrual cycle is between 23-35 days	46	61	29	39

• **Description:** Table 2. shows that the most of the respondents (91%) provided correct answer about menstruation and less than half of the respondents (45%) of the respondents gave correct answer to the normal age of puberty, On the other hand, among all the respondents 59% answered incorrectly to the source of menstrual bleeding, 71% respondents provided correct answer to the hormonal secretion is the cause of menstruation, 79% respondents gave correct answer to the duration of normal menstrual bleeding and more than half (61%) of the respondents provided correct answer to the normal cycle of menstruation.

• **Description:** Table 3. shows that among all the respondents 31% had average and poor knowledge respectively, on the other hand 21% had very good knowledge and only 17% respondents had excellent level of knowledge on the concept of menstruation. Mean of total knowledge score was = 19.40 out of 30 marks (six items) which indicates the average level of knowledge in the area on concept of menstruation.

Table 3 Level of the Adolescent Girls’ Knowledge Regarding Concept of Menstruation n=75

Variables	Level	Grading Criteria	f	%
Concept of menstruation	Excellent	90-100%	13	17
	Very Good	80-89%	16	21
	Good	70-79%	-	-
	Average	60-69%	23	31
	Poor	<60%	23	31
Mean of total score=19.40				

Table 4 Distribution of the Adolescent Girls’ Knowledge Regarding Menstrual Hygiene n=75

Sl. No.	Items	Correct Answer		Incorrect Answer	
		(f)	(%)	(f)	(%)
7.	Disposable sanitary pad /napkin is an ideal absorbent during menstruation	64	85	11	15
8.	The absorbent should be changed per day during at least 4 times in a day	26	35	49	65
9.	The place is suitable to disposed the used absorbent is dustbin with proper wrapping	71	95	4	5
10.	Soap and water Should be used to clean external genitalia during menstruation	52	69	23	31
11.	the undergarment should be changed daily during menstruation	17	23	58	77
12.	Warm water bath is comfortable during menstruation	39	52	36	48
13.	Heavy weight lifting is prohibited during menstruation	34	45	41	55
14.	Water rich fruits and vegetables are suitable during menstruation	71	95	4	5
15.	Tea and coffee should be avoided during menstruation	51	68	24	32

• Description: Table 4. shows that most of the (95%) respondents provided correct answer to the dustbin is suitable place to dispose used absorbent and water rich fruits and vegetables are suitable food during menstruation, 85% respondents provided correct answer to the use of disposable sanitary pad/napkin as ideal absorbent. 69% respondents provided correct answer to the use of soap and water to clean external genitalia, 68% respondents provided correct answer to avoid tea and coffee during menstruation, only 52% respondents

provided correct answer to the warm water bath is comfortable during menstruation , on the other hand more than half of the respondents 55% provided incorrect answer to prohibit the heavy weight lifting, 65% respondents provided incorrect answer about the absorbent should be changed at least 4 times in a day during menstruation and 77% respondents answered incorrectly to the undergarment should be changed daily during menstruation.

Table 5 Level of the Adolescent Girls’ Knowledge Regarding Management of Menstrual Hygiene n =75

Variables	Level	Grading Criteria	f	%
Management of menstrual hygiene	Excellent	90-100%	-	-
	Very Good	80-89%	09	12
	Good	70-79%	21	28
	Average	60-69%	12	16
	Poor	<60%	33	44
Mean of total score=28.33				

• Description: Table 5. Represents that among all the respondents near about half of the respondents’ (44%) had poor level of knowledge, 28% had good level of knowledge, 16% average level of knowledge and only 12% had very good level of knowledge regarding

management of menstrual hygiene. Mean of total knowledge score was =28.33 out of 45 (nine items) which indicates the average level of knowledge in the area of management of menstrual hygiene.

Table 6 Distribution of the Adolescent Girls’ Knowledge Regarding Complications of Poor Menstrual Hygiene n =75

Sl. No.	Items	Correct Answer		Incorrect Answer	
		(f)	(%)	(f)	(%)
16.	Greater risk of infection may arise when menstrual hygiene cannot be managed properly	39	52	36	48
17.	Bad odor and itching are the immediate complication may arise from poor menstrual hygiene	36	48	39	52
18.	Both RTI and UTI is the common complications of poor menstrual hygiene management	15	20	60	80

19.	Infection can spread due to improper hand washing after handling menstrual absorbent, such as vaginal thrush	52	69	23	31
20.	Cervical cancer is the complication for ignoring menstrual hygiene management	29	39	46	61

• Description: Table 6. presents that among all of the respondents' 69% provided correct answer to infection can spread due to improper hand washing after handling menstrual absorbent, such as vaginal thrush and 52% respondents provided correct answer to greater risk of infection that may arise due to improper menstrual hygiene. On the other hand, more than half of the

respondents (52%) provided incorrect answer to bad odor and itching are the immediate complication, 61% respondents provided incorrect answer to the cervical cancer is late complication and most of the respondents (80%) provided incorrect answer to both RTI and UTI is the common complication of poor menstrual hygiene management.

Table 7 Level of the Adolescent Girls' Knowledge Regarding Complications of Poor Menstrual Hygiene n = 75

Variables	Level	Grading Criteria	f	%
Complications of poor menstrual hygiene	Excellent	90-100%	1	1
	Very Good	80-89%	18	24
	Good	70-79%	-	-
	Average	60-69%	14	19
	Poor	<60%	42	56
Mean of total score=11.40				

• Description: Table 7. Shows that among all the respondents more than half (56%) had poor level of knowledge, 24% had very good level of knowledge, 19% had average level of knowledge and only 1% respondents

had excellent level of knowledge regarding complications of poor menstrual hygiene. Mean of total knowledge score was = 11.40 out of 25 (five items) which indicates the poor level of knowledge in the area of complication of poor menstrual hygiene.

Table 8 Distribution of the Adolescent Girls' Overall Level of Knowledge Regarding Menstrual Hygiene n=75

Variables	Level	Grading Criteria	f	%	Mean
Knowledge of menstrual hygiene	Excellent	90-100%	1	1	90
	Very Good	80-89%	14	19	82.50
	Good	70-79%	13	17	72.30
	Average	60-69%	17	23	62.00
	Poor	<60%	30	40	43
Mean of total score= 59.13					

• Description: Table 8. reveals the respondents' overall level of knowledge regarding menstrual hygiene. Among all the respondents' 40% had poor level of knowledge, 23% had average level of knowledge, 19% had very good knowledge, 17% had good level of knowledge and only

1% had excellent level of knowledge regarding menstrual hygiene. Mean of total knowledge score of menstrual hygiene was = 59.13 out of 100 which indicate that respondents had poor level of knowledge in current study.

Table 9 Distribution the Adolescent Girls' Overall Menstrual Hygiene Knowledge by Education n=75

Variable	Categories	f	%	Mean
Level of education	Class-VII	21	28	50.20
	Class-VIII	25	33	57.00
	Class-IX	29	39	70.50

• Description: Table 9. shows the respondents' overall Menstrual Hygiene knowledge by education. Those respondents had class-IX level of education; they had more knowledge than class-VII and VIII. The mean of total knowledge score of class-IX was =70.50 whereas class-VIII was =57 and class-VII was =50.20. So, this table indicates that class-IX adolescents are more knowledgeable regarding menstrual hygiene than class-VIII and VII.

V. DISCUSSION

➤ Socio-Demographics Characteristics

The present study involved 75 adolescents' girls with the mean age of 14 years range of 12 to 17 years and maximum age group was 14-15 years. Among all of them 39% respondents were in class nine, 33% class eight, and 28% respondents were in class seven. In current study, the most of the respondents were Muslim (91%) and more than half of the respondents' (53%) face menarche at the age of 9-15 years. Similarly, previous several studies found that

respondents were adolescent group with the same age groups along with secondary school girls in different countries like India, Nepal, Saudi Arabia, Indonesia including Bangladesh [2;4;7;8;9;].

In the current study, about 63% respondents got information about menstruation from their mother. Near to similar a study conducted in Kathmandu by Karki *et al.*, (2018) reported that 64.8% respondents heard about menstruation and menstrual hygiene from their mother [6]. In contrast a study reported that 56% respondents got information from their teacher due to their education system [8]. In present study, no one participants get any information from their teachers, researchers assume that it is a problem of education system and also cultural barrier of our country.

➤ Knowledge Related to Concept of Menstruation

This study showed that the most of the respondents 90% was known that the menstruation is a normal process, age of puberty 45%, source of menstrual bleeding 41%, causes of menstrual 71%, duration of normal menstrual bleeding (3-7 days) 79%, the interval of normal menstrual cycle (23-35 years) 61%, which is relatively similar to a study from Buraidah city in Saudi Arabia reported that the 65.9% respondents were know the starting time of menarche (11-14 years), 70.5% known that normal menstruation lasts for 3-7 days. 51.9% were know the normal cycle of menstruation and the causes of menstruation is physiological process, 60.9% knew the source of menstrual bleeding is uterus [2].

➤ Knowledge Related to Menstrual Hygiene

In present study, most of the (85%) respondents knew disposable sanitary pad/napkin as an ideal absorbent, (95%) respondents respond to the dustbin is suitable place to dispose used absorbent, 35% respondents provided correct answer about the absorbent should be changed at least 4 times in a day. Near to similar studies reported that 82.6% and 82.2% respondents knew that the sanitary pads are ideal absorbent and dustbin is the suitable place to dispose used absorbent during menstruation respectively, about 50% respondents knew about the absorbent should be changed 1-2 times in a day in Saudi Arabia and Nepal [2;7].

➤ Knowledge Related to Complications of Poor Menstrual Hygiene

The present study shows that among all of the respondents' 56% had poor level of knowledge and 44% had average level of knowledge regarding complication of poor menstrual hygiene. A study conducted on adolescent girls in rural area of Bangladesh by Akther *et al.*, (2020) reported that majority (72%) of respondent had no knowledge and only 28% respondents knew infection is one of the complications of poor menstrual hygiene. The both studies showed only 16% knowledge gap due to level of area and duration of conducted studies [1]. In this area researchers assume that source of information about complication of poor menstrual hygiene do not give from home, school, society as well as mass media.

➤ Overall Knowledge Related to Menstrual Hygiene

The present study showed that 40% respondents had poor level of knowledge, 23% respondents had average knowledge, 19% had very good, 17% had poor and only 1% respondents had excellent level of knowledge. The mean score of knowledge was 59.13% which indicates average level of knowledge of the respondents. A study conducted among adolescent students in Saudi Arabia in 2021 reported that 61.7% respondents had average level of knowledge 36.3% respondents had poor knowledge which is near similar to current study. In Nepal, 2017 A descriptive cross-sectional study design was conducted among 100 adolescent girls on knowledge about menstrual hygiene by used structural questionnaire, the study showed that 70% had average knowledge, 25% of them poor knowledge and only 5% had good knowledge regarding menstrual hygiene [5].

➤ Overall Menstrual Hygiene Knowledge by Level of Education

This current study showed that those respondents had class ix level of education; they had more knowledge (mean score was= 70.5) than class vii and viii on the overall knowledge of menstrual hygiene. This finding is consistent with the results from a study was conducted among adolescent school girls to determinants of menstrual hygiene in Indonesia revealed that grade ix students had more knowledge (mean was =61.2) of menstrual hygiene than grade vii and grade vii school girls [15].

VI. LIMITATIONS OF THE STUDY

➤ During conduct the research project the researchers faced some limitations that are listed follows.

- The study focused only on the assessment of knowledge but not the practice of adolescent girls regarding menstrual hygiene. So, this study did not explore the management of all services on menstrual hygiene.
- The period of the study was too limited with small sample size which cannot represent broadly.
- Researchers used developed questionnaire without measuring internal consistency to maintain reliability of the instrument due to limitation of advanced statistical analysis (SPSS).
- The study was conducted only at IPH school and college, Mohakhali that's why this result may not be generalized to the all setting in Bangladesh.
- There are inadequate computing, printing, and internet facilities.

VII. CONCLUSION AND RECOMMENDATION

➤ Conclusion:

This study finding showed that near about half of the respondents had poor level of knowledge on the menstrual hygiene which was not satisfactory. The majority of the adolescent girls had heard about menstrual hygiene before they had menarche from their mother. Though the majority of respondents had average level of knowledge regarding concept of menstruation and menstrual hygiene but there was a knowledge gap in area of complication due to poor

management of menstrual hygiene. Menstrual hygiene knowledge influenced by the respondents' level of education. Those respondents had class nine level of education, they had more knowledge than class eight and seven. The level of knowledge towards menstrual hygiene requires improvements. This improvement of knowledge could reduce the risk of future reproductive disorders including infertility and cervical cancer. In this context, this study concerns the need of education regarding menstrual hygiene should be given to adolescent girls including parents.

➤ *Recommendation:*

- The findings of the current study revealed that adolescent girls' education influenced the knowledge of menstrual hygiene. Those respondents had class nine level of education, they had more knowledge than class eight and seven.
- To increase menstrual hygiene knowledge awareness program should be developed.
- Nurses can arrange education and awareness campaigns or use mass media to disseminate menstrual hygiene knowledge and its importance which will impact to maintain proper menstrual hygiene management.
- Health professionals must consider these findings in developing strategy to improve knowledge of menstrual hygiene. Strategy should be taken to increase social awareness.
- Further correlational and interventional study is recommended with involving both rural and urban adolescent girls in various setting to find out the real situation and also for generalization of the study.

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➤ *Conflict of Interest:*

The study has no any conflict of interest.

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