

ORIGINAL RESEARCH ARTICLE

AWARENESS OF MENSTRUAL HYGIENE AMONG ADOLESCENT GIRLS AT A GOVERNMENT SCHOOL,  
CHITWAN, NEPAL

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**ABSTRACT**

**Background:** Adolescence is a transition period from childhood to adult life during which pubertal development and sexual maturation take place. Menstrual hygiene and management is an issue that is insufficiently acknowledged and has not received adequate attention. Good menstrual hygiene is crucial for health, education and dignity of adolescent girls. The objective of this study was to assess the awareness and practice regarding menstrual hygiene among adolescent girls.

**Methods:** A cross-sectional study was conducted to assess the awareness regarding menstrual hygiene among 150 adolescent girls aged 12-17 years studying in grades 9 and 10 of a government school, Chitwan. Purposive sampling technique was used to select the sample. Data were collected using structured self-administered questionnaires and analyzed by using descriptive and inferential statistics.

**Results:** Majority of the respondents were 12-14 years old with the mean age of menarche at 12.5± 1.14 years, 52% of respondents had adequate knowledge and 61.3% of them had good practice on menstrual hygiene. Statistically significant association was found between level of practice and mother's education status ( $p < 0.05$ ). Correlation between knowledge and practice score was poorly positive ( $r = 0.087$ ) but statistically insignificant ( $p > 0.05$ ).

**Conclusions:** Majority of respondents had adequate knowledge and adequate practice on menstrual hygiene. For the maintenance of good reproductive health girl child should be made more aware about menstrual health and hygiene through the campaign and education programs.



Peer Reviewed

**INTRODUCTION**

Adolescence is a transition period during which pubertal development and sexual maturation take place, menstruation being natural event during adolescence.<sup>1</sup> Every month, 1.8 billion women across the world menstruate. Lack of basic services leads to unmet menstrual health and hygiene needs. It affects attendance in school and participation in community life.<sup>2</sup>

Menstrual Hygiene Management (MHM) practice is defined as: Adolescent girls using a clean menstrual management material to absorb or collect blood that can be changed in privacy as often as necessary for the duration of the menstruation period, using soap and water for washing the body as required and having access to facilities to dispose of used menstrual management materials.<sup>2</sup> Despite menstruation being a natural process, it is still treated as taboo in countless culture and societies across the globe.<sup>3</sup>

Menstrual hygiene seems to be an insufficiently acknowledged problem so adolescent girls lack knowledge about menstruation

and related problems and hence are more vulnerable to developing reproductive tract infection.<sup>4</sup> Every year approximately 10% of women worldwide are exposed to genital infections and 75% of women have a history of a genital infection, one of the common risk factors being poor menstrual hygiene.<sup>5</sup>

Adolescent girls need attention, guidance, support, counseling and adolescent friendly health services to discuss and clarify their misconception.<sup>6</sup> Therefore, this study was designed to assess awareness on menstrual hygiene among adolescent girls studying at a government school of Chitwan. The result would be useful in helping stakeholders through determining MHM practice that is consistent with its definition and identifying factors that could affect their practice.

**METHODS**

A cross-sectional study was conducted to assess the awareness and practice of menstrual hygiene among adolescent girls studying in grades 9 and 10 at Narayani Public School, a government school of Chitwan. The population of the study was adolescent girls in the age group of 12-17 years, having

regular menstruation. Non-probability purposive sampling technique was used to select the sample. Sample size was 150. Data were collected from the girls who were having regular menstrual cycle, were available during data collection and agreed for the participation in study.

Data were collected from 03/01/2021 to 05/02/2021, using structured self-administered questionnaires developed by the researchers that consisted of four sections: socio-demographic information, knowledge and practice regarding menstrual hygiene and availabilities of menstrual hygiene management facilities. The tool consisted of 10 MCQs to assess the knowledge and 10 yes/no questions to assess the practice. The total score on awareness was 20 with score 10 on knowledge and 10 on practice.

Response of each item on awareness, which was divided into knowledge, and practice was scored as '1' for correct and '0' for incorrect response. Knowledge score was further classified into adequate ( $\geq$  mean) and inadequate ( $<$ mean) level of knowledge based on mean value of 8 and practice score was also further classified as good ( $\geq$  mean) and poor ( $<$ mean) level of practice based on mean value of 9.

Ethical approval was obtained from Chitwan Medical College Institutional Review Committee (CMC-IRC). Permission for data collection was obtained from the school principal, verbal consent was obtained from the parents prior to data collection and all the participants were informed about the objectives of the study and verbal consent was obtained from them. Data were collected during school hours and each respondent was given 20-25 minutes to complete the questionnaire.

Obtained data were entered into SPSS version 21.0 for windows and analyzed using descriptive statistics (frequency, percentage, mean, median and standard deviation) for socio-demographic information, knowledge regarding menstrual hygiene, practice regarding menstrual hygiene and availabilities of menstrual hygiene management facilities. Inferential statistics (chi square and correlation) was used for measuring the association between level of knowledge and practice with selected variables and to determine the correlation between knowledge and practice.

## RESULTS

**Table 1: Respondents' socio-demographic characteristics n=150**

Variables	Frequency (%)
<b>Age (in completed years)*</b>	
12-14 years	110 (73.3)
15-17 years	40 (26.7)
<b>Ethnicity</b>	
Brahmin/Chhetri	107 (71.3)
Janajati	25 (16.7)
Others	18 (12)
<b>Religion</b>	
Hindu	135 (90)

Non-hindu	15 (10)
<b>Grade</b>	
9 <sup>th</sup>	25 (16.7)
10 <sup>th</sup>	125 (83.3)
<b>Family type</b>	
Nuclear	119 (79.3)
Joint	31 (20.7)
<b>Living area</b>	
Urban	147 (98)
Rural	3 (2)
<b>Elder sister</b>	
Present	47 (31.3)
Not present	103 (68.7)
<b>Mother's educational status</b>	
Literate	144 (96)
Illiterate	6 (4)
<b>Educational level of mother (n-144)</b>	
Basic	25 (17.4)
Secondary	84 (58.3)
Bachelor	30 (20.8)
Master	5 (3.5)
<b>Mother's occupation</b>	
House wife	93 (62)
Working women	57 (38)
<b>Monthly family income</b>	
Enough for a month	81 (54)
Extra savings	69 (46)

\*Mean 15 years

Table 1 shows 73.3% of respondents were in the age group 12-14years, 71.3% belonged to Brahmin/Chhetri, 90% followed Hindu religion, 83.3% were from grade 10, 79.3% belonged to a nuclear family, 98% were living in an urban area and 31.3% had an elder sister. Mothers of the 96% girls were literate and among them 58.3% had secondary level education, and 62% were housewives. The monthly family income was enough for a month in 54%.

**Table 2: Respondents' information regarding menstruation and menstrual hygiene n=150**

Variables	Frequency (%)
<b>Age of Menarche*</b>	
10-12 years	74 (49.3)
13-15 years	76 (50.7)
<b>Attend School during menstruation</b>	
Yes	144 (96)
No	6 (4)
<b>Cultural restriction during menstruation</b>	
Yes	83 (55.3)
No	67 (44.7)
<b>Health problem during menstruation</b>	
Yes	135 (90)

No	15 (10)
<b>Type of health problem** (n-135)</b>	
Backache	92 (68.1)
Lower abdominal pain	104 (77)
Leg cramps	22 (16.3)
Fainting attacks	4 (3)
Nausea	13 (9.6)
Vomiting	9 (6.7)
<b>Complications of poor menstrual hygiene **</b>	
Foul smelling discharge	80 (62)
Back pain	46 (35.7)
Burning micturition	15 (11.6)
Vulva itching	70 (54.3)
<b>Type of pad used</b>	
Sanitary pad	143 (95.3)
Sanitary pad and cloth pad	7 (4.7)

\*\* Multiple Responses \*Mean: 12.5years S.D. 1.14

Table 2 shows that 50.7% had menarche at the age of 13-15 years, 96% attend school during menstruation, 55.3% practiced cultural restriction during menstruation, 90% faced health problems during menstruation, and among them 77.0% had lower abdominal pain, 68.1% had backache.

100 percent of the girls were aware about complications of poor menstrual hygiene among which 62% answered foul smelling discharge, 54.3% vulval itching, 35.7% back pain, and 11.6% burning micturition, 95.3% used sanitary pad.

**Table 3: Respondent's knowledge regarding menstruation and menstrual hygiene n=150**

Variables	Frequency (%)
Correct meaning of menstruation	122 (81.3)
Correct cause of menstruation	138 (92)
Normal age for menarche	135 (90)
Normal cycle of menstruation	129 (86)
Normal flow days in menstruation	124 (82.7)
Correct meaning of menstrual hygiene	25 (16.7)
Use of ideal absorbent	147 (98)
Proper cleaning of cloth pad	146 (97.3)
Drying cloth pad in direct sunlight	139 (92.7)
Discarding cloth pad every 3 months	13 (8.7)

Table 3 depicts knowledge regarding menstruation and menstrual hygiene, 81.3% knew correct meaning of menstruation, 92% knew correct cause of menstruation, 90% knew the normal age for menarche, 86% knew normal cycle of menstruation, 82.7% knew normal flow days in menstruation, 98% knew about the ideal absorbent, 97.3% knew the proper cleaning of cloth pad, 92.7% knew cloth pad should be dried in direct sunlight, only 16.7% knew correct meaning of menstrual hygiene and only 8.7% knew the proper time for discarding cloth pad.

**Table 4: Respondent's practice regarding menstruation and menstrual hygiene n=150**

Variables	Frequency (%)
Change pad every 3-4 hourly	99 (66)
Store pad separately	149 (99.3)
Wash genitalia in-between pad change	147 (98)
Clean genitalia more than 2 times/day	120 (80)
Clean genitalia from front to back technique	122 (81.3)
Wash hands before pad change	137 (91.3)
Wash hands after pad change	149 (99.3)
Use soap for hand washing	148 (98.7)
Dispose sanitary pads properly	150 (100)
Take bath daily during menstruation	74 (49.3)

Table 4 shows practice related to menstruation and menstrual hygiene, 66% changed pad every 3-4 hourly, 99.3% stored pad separately, 98% washed genital in between pad change, 80% cleaned genitalia more than 2 times/day, 81.3% cleaned genitalia from front to back technique, 91.3% washed hands before pad change, 99.3% washed hands after pad change, 98.7% used soap for hand washing, 100% disposed sanitary pads properly, and 49.3% took bath daily during menstruation.

**Table 5: Respondents level of knowledge and practice on menstrual hygiene n=150**

Variables	Frequency (%)
<b>Level of knowledge</b>	
Adequate knowledge ( $\geq$ mean)	78 (52.0)
Inadequate knowledge ( $<$ mean)	72 (48.0)
<b>Level of practice</b>	
Good practice ( $\geq$ mean)	92 (61.3)
Poor practice ( $<$ mean)	58 (38.7)

Knowledge mean, median- 8 Practice mean, median- 9

Table 5 depicts knowledge and practice regarding menstruation and menstrual hygiene. Level of knowledge was adequate in 52% of the respondents and good practice was found in 61.3% respondents.

**Table 6: Association between level of practice and selected variables n=150**

Mother's education status	Level of Practice		p-value
	Good n(%)	Poor n(%)	
Literate	91 (60.7)	53 (35.3)	0.032
Illiterate	1 (0.7)	5 (3.3)	

Level of significance at 0.05

Statistically significant association was found between level of practice and mother's education status ( $p < 0.05$ ), but associations between knowledge and practice with other variables were statistically insignificant ( $p > 0.05$ ).

**Table 7: Correlation between knowledge score and practice score**  
n=150

Variables	Correlation (r)	p-value
Knowledge score Practice Score	0.087	0.292

Level of significance at 0.05

Table 7 depicts the correlation between knowledge and practice score, which was found to be poorly positive (r=0.087) but statistically insignificant (p>0.05).

## DISCUSSION

The finding of this study showed that mean age of menarche of respondents was 12.5± 1.14 years. Similar findings were reported by other studies<sup>7, 8</sup> which showed the mean age as 12.9 ± 0.8 years and 12.51±1.101years. The main source of knowledge regarding menstruation and menstrual hygiene among respondents in this study was mother in 96%, followed by friends in 46.0% and teachers in 42%, which is similar to the other study<sup>9</sup> that revealed in 93.28% of respondent's mothers were source of information, followed by friends 39.92%. The most common menstrual problem was backache in 68.1%, followed by lower abdominal pain in 77%, which is similar to other studies<sup>10, 11</sup> that reported 78.7% and 62% had dysmenorrhea, followed by backache 26%. These similarities can be attributed to the fact that all of these studies were conducted in the developing nations mostly south east Asian countries.

In the present study, 52% of the respondents had good knowledge about menstruation and menstrual hygiene, which is similar to other studies<sup>4, 5</sup> that showed 53% and 60.9% of the respondents had good knowledge about menstruation and menstrual hygiene respectively. The similarity could be because all of the studies were conducted in the developing nations. In the present study, 81.3% answered correctly that menstruation is a periodic discharge of blood and mucus from uterus, which is similar to another study<sup>7</sup> that revealed 97% of respondents were aware that menstruation is cyclic discharge of blood from uterus. In the present study, 92% respondents knew that cause of menstruation is hormonal which is different from the findings from other studies<sup>9, 12</sup> that showed 60% respondents answered hormone as the cause of menstruation. The difference in findings may be because of increased emphasis on menstrual hygiene in school curriculum these days.

In the present study, only 16.7% of the respondents knew that menstrual hygiene is maintaining proper perineal hygiene during menstruation, which is in contrast to another study<sup>5</sup>, which showed 63.6% of respondents, knew the meaning of menstrual hygiene. Most of the respondents, 98% had knowledge about ideal absorbent pads during menstruation. Similar findings were seen in another study<sup>9</sup> that revealed 92.4% responded saying a sanitary pad can be ideally used during menstruation. The finding of this study revealed that

92.7% of the respondents had knowledge that a cloth pad should be dried in direct sunlight which is similar to another study<sup>12</sup> that revealed 76.5% of respondents dry their cloth pads in direct sunlight.

In the present study, 61.3% of the respondents had good menstrual hygiene practice, which was different from other studies<sup>13, 1, 14</sup> that revealed 39.7%, 34.7%, 12.9% had good menstrual hygiene practices. Better hygiene facilities at the study area might be the reason for good menstrual hygiene practice seen in this study. The present study showed, 66% changed their pad at the interval of 3-4 hours. This finding is similar to another study<sup>15</sup> that revealed 71.4% change their pad at the interval of 3-4 hours. The present study found that 81.3% of respondent cleaned genitalia with the correct technique, which was similar to the study<sup>16</sup> that showed 78.6% of respondents, cleaned genitalia in correct technique. This study revealed that 98% of respondents wash genitalia in-between pad change, which is similar to the finding in the study<sup>9</sup> that showed 98.7% clean their genitalia before pad change.

In the present study, regarding frequency of cleaning genitalia, 80% of respondents had satisfactorily cleaned the genitalia, which is contrary to the finding in another study<sup>16</sup> that showed only 33.8% of respondents had satisfactorily cleaned the genitalia. In the present study, 49.3% of respondents took a bath daily during menstruation whereas another study<sup>14</sup> showed that only 4 % of respondents took a daily bath during menstruation. Availability of water and girl friendly environment at study area might have contributed to this result.

This study showed a significant association between level of practice and mother's education status (p<0.05). The correlation between knowledge and practice was also positive, the more knowledge the respondent has; better the practice is.

## CONCLUSION

This study reveals that almost half of the adolescent girls possessed adequate knowledge and three fifths had good practice regarding menstruation and menstrual hygiene. Mothers are the major source of knowledge passed to the daughter. Educational programs should be conducted for mothers in order to improve menstrual hygiene practice among adolescents. Introducing education regarding menstrual hygiene in lower secondary school curriculum can automate awareness among girls. All stakeholders should emphatically work on enhancing the awareness of adolescent girls on menstruation and MHM practice through teachers at schools, and encouraging parent-adolescent girls' discussion about menstruation.

**CONFLICT OF INTEREST:** None

**FINANCIAL DISCLOSURE:** None

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