

Menstrual Hygiene Practice and Associated Factors among Secondary School Girls in Wegera District, Northwest Ethiopia; a Cross-Sectional Study

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Abstract: Menstrual hygiene is an issue that is insufficiently acknowledged and has not received adequate attention. There is a substantial knowledge gap on menstrual hygiene among adolescent girls. Lack of knowledge and poor personal hygienic practices during menstruation can lead to various gynecological problems. This study aimed to assess menstrual hygiene practice and factors associated with it among secondary school girls in Wegera District, Northwest Ethiopia. A school-based cross-sectional study was conducted among 423 randomly selected secondary school girls from March to April, 2014. The data were collected by using pre-tested self-administered questionnaire. Good menstrual hygiene practice was found to be 29.8%. Menstrual practice among girls who had exposure to advertisement on sanitary napkins (AOR 2.06(1.27, 3.34)) and good knowledge on menstrual hygiene (AOR 2.23(1.06, 4.71)) were the factors associated with good menstrual hygiene practice. This study revealed that the menstrual hygiene practice of secondary school girls was low. Exposure to advertisement regarding sanitary napkins and knowledge on menstrual hygiene were found to influence their practice towards menstrual hygiene. Menstrual hygiene is an issue needs to be addressed at all levels.

Keywords: Knowledge, Practice, Menstrual Hygiene, Ethiopia

1. Background

Globally, females of reproductive age account 26% of the total population. Most of these women and girls menstruate monthly in their reproductive life span [1]. Menstruation is part of the female reproductive cycle that starts at puberty and menstrual hygiene is fundamental to the dignity and wellbeing of women and girls and an important part of the basic hygiene, sanitation and reproductive health services to which every woman and girl has a right. Even though menstruation is a natural process, it is linked with several misconceptions and malpractices which may result in adverse health outcomes. And also, menstrual hygiene management has not received adequate attention by professionals in the

health and education sectors [2].

Menstrual hygiene refers to personal hygiene during menstruation. This includes bathing at least once a day, wearing clean and regularly changed undergarment and using proper absorbent materials like pads and tampons which are also changed regularly (every three to four hours) [3-6].

To women and girls in the developed world these requirements are taken for granted. But in developing societies difficult to fulfill the requirements [7-9]. In India, a cross-sectional study on school going adolescent girls in rural area, majority of the girls were using cloth (46.67%) and only 15.67% were using sanitary napkins [10]. Similarly a study of adolescent girls in Rajasthan 19.5% reported using readymade sanitary pads during menstruation [11].

Since menstruation is considered as a taboo to discuss with

others, young girls often grow up with limited knowledge about how to take a good care of personal hygiene. Adult women may themselves not be aware of the biological facts or good hygienic practices, instead passing on cultural taboos and restrictions to be observed [2, 3]. A study done on comparison of the menstruation and education experiences of girls in Africa reported 84% of girls in Afghanistan never wash their genital areas, whereas 80% of girls in Afghanistan use water but no soap for washing their menstrual protection and 30% of girls in Malawi do not use the latrine when menstruating. This was also noted by 20% of women in communities in India [12, 13]. A study in Nigeria on the practice of menstrual hygiene of girls 73 (60%) changed sanitary pads three times a day, whereas similar studies reported 11% of girls in Ethiopia and 60% of girls in India only change their menstrual cloths once a day [2, 14].

Different studies reported that there are different factors which affect menstrual hygiene practices. Good menstrual hygiene was practiced among girls whose parents were literate, older girls, having premenstrual preparation, girls' studying in secondary schools and above, exposure to advertisements regarding usage of sanitary pads in mass media and socioeconomic status of the family [11, 15-18]. Study reported in an urban slum of Mumbai, Significant association was observed between having good/fair knowledge and good practices. Among girls with having good/fair knowledge, 91% had good practice ($p < 0.01$). Similarly a study in Nigeria found the association between knowledge of menstruation and menstrual hygiene practice ($p < 0.05$) [14, 17].

In Ethiopia, like in many parts of developing world, the subject of menstruation and puberty hygiene is rarely discussed at home as well as at schools. This could be mainly due to some cultural restrictions preventing the flow of correct and sufficient information given to youngsters. Girls in rural Ethiopia also expressed a hesitancy to buy sanitary pads in public shops due to the cultural or social implications of becoming a woman in Ethiopian society (e.g. readiness to marry and have children) [12].

Although good menstrual hygiene practice is good to live healthy, productive and dignified life, little is known about menstrual hygiene and its associated factors among female students in Ethiopia. Therefore, it is important to identify the practice of menstrual hygiene and associated factors among school going students to intervene accordingly. So, this study was conducted to determine the level of menstrual hygiene practices and factors associated with good menstrual hygiene practice among secondary school girls in Wegera district, Northwest Ethiopia.

2. Methods

2.1. Study Design and Set Up

A school based cross sectional study was conducted in March 2014 among 423 secondary school girls at Wegera district. Wegera district is located 35 km away from Gondar

Town; the capital city of North Gondar Zone, Northwest Ethiopia. Under this district there are two secondary schools and during the 2013/14 academic year 2,202 female students enrolled in those secondary schools.

2.2. Sample Size Determination and Sampling Techniques

The sample size was determined by using single population proportion formula with the assumptions of 95% confidence interval, marginal error of ($d = 5\%$), and by considering the proportion of students who practiced good menstrual hygiene 50% since there were no other studies done in the country, and considering 10 % non response rate the final sample size becomes 423. A simple random sampling was done to select girls on both secondary schools who were menstruating at least one time before data collection.

2.3. Data Collection Tools and Procedures

The data were collected by self-administered technique, using a questionnaire adapted from relevant literatures of similar studies. It consists of basic socio demographic characteristics, source of information about menstrual hygiene and information concerning the knowledge and practice of menstrual hygiene. Respondents who scored 4-6 points were adjudged as having good practice and respondents who scored 0-3 points were adjudged as having poor practices.

2.4. Data Analysis Procedures

The collected data was entered into EPI Info version 3.5.1 software and exported into SPSS version 16 software for analysis. Missing values, outliers and normality of data were checked by data exploration. Proportion and bivariate analysis were carried out. Variables with p -value < 0.2 at bivariate level were further fitted to multivariate logistic regression to control the effect of confounding variable.

2.5. Operational Definitions

Knowledge of menstrual hygiene: To measure the respondent's knowledge of menstrual hygiene there are 10 questions with each correct answer attracting 1 point and 0 for incorrect or don't know. Respondents that scored 8 - 10 points were considered as having good knowledge, respondents that scored 4 - 7 points were considered as having fair knowledge while a score of less than 3 points as poor knowledge as similarly described by previous study [19].

Menstrual Hygiene practice: The measurement of practice of menstrual hygiene focus on use of material during menstruation (assign 1 point for use of sanitary pad, 0 for other sanitary materials), methods of disposal of materials (0 for open field, 1 for other proper disposal), cleaning of external genitalia (1 for cleaning 2 or more times/day, 0 for < 2 times/day), frequency of sanitary pad change (1 for changing pad 2 or more times/day, 0 for < 2 times/day) and materials used for cleaning purpose (1 for washing with soap and water or with plain water, and 0 for not washing).

Respondents who scored 4-6 points were adjudged as having good practice and respondents who scored 0-3 points were adjudged as having poor practices as similarly described in previous study [19].

2.6. Ethical Considerations

The proposal was reviewed and approved by the institutional review Board (IRB) of university of Gondar. Following the endorsement by the research review committee, the selected district was informed about the objective of the study through a support letter from institute of public health. Each study participant was adequately informed about the purpose, anticipated benefit and risk of the study and their right to discontinue or refuse to participate in the study. Informed written consent was obtained from each study participants and consent from parents/guardians was taken for those with age <18 years and their confidentiality, privacy and anonymity was maintained.

3. Result

3.1. Socio-Demographic Characteristics of the Study Participants

Of the 423 study samples, large proportions (56.7%) of the study population were in the age group of 16 - 17 years. The mean age of the students was 17 years (SD= 1.5). The mean age at menarche of the study participant's was 15 ± 1.08 years.

Among the participants 52% were currently studying in grade 9 and 97.2% were orthodox Christian. Among the respondents, 237(56%) got permanent pocket money from their family members where as 51(12%) of them earn the money by themselves. (Table 1)

Table 1. Socio-demographic characteristics of secondary school girl students, in Wegera District, 2014.

Socio-demographic characteristics	Number (n= 423)	Percent (%)
Age		
14-15	63	14.9
16-17	240	56.7
>=18	120	28.4
Grade level		
9	220	52.0
10	203	48.0
Marital status		
Single	392	92.7
Married	24	5.7
Separated	6	1.4
Widowed	1	.2
Religion		
Orthodox	411	97.2
Muslim	8	1.9
Protestant	2	.5
Other	2	.5
Education of the father		
Illiterate	168	39.7
Literate	255	60.3
Education of the mother		
Illiterate	282	66.7
Literate	141	33.3

3.2. Knowledge on Menstruation and Menstrual Hygiene

Majority of the girls (81.6%) knew about menstruation before they had menarche. The dominant source of information and advice for the girls were mothers (46.3%).

The main material known by 232(54.8%) respondents were commercially made sanitary pad. Three hundred thirty two (78.5%) respond that menstrual blood is unhygienic. Two hundred ninety two (69.3%) participants aware that poor menstrual hygiene predisposes for infection. Two hundred nine (49.4%) participants respond that personal hygiene has a role in prevention of menstrual pain. In summary one hundred forty five (34.3%) study participant had good knowledge about menstrual hygiene, 131(31%) and 147(34.8%) respondents had fair and poor menstrual hygiene knowledge respectively. The girls expressed their preferred source of information on menstrual matter. Thus, most of them preferred to get from their mother's 248(58.6%), friends 233(55.1%), teachers 216(51.1%), and health professionals 179 (42.3%). (Table 2)

Table 2. Knowledge on menstruation and menstrual hygiene of secondary school girl students, Wegera District, 2014.

Variables	Number (n= 423)	Percent (%)
At what age, do you think healthy girl usually get her first period?		
11 - 16 years	373	88.2
Other (<11 or >16)years	50	11.8
How long does the bleeding usually take place during menstruation, in a healthy girl?		
2 - 7 days	419	99.1
Other (>7)days	4	0.9
What do you think is the menstrual cycle interval in a healthy girl?		
21 - 35 days	381	90.1
Other (<21 or >35)days	42	9.9
Cause of menstruation		
Aging	212	50.1
Hormones	81	19.1
Curse	79	18.7
Release of bad blood	51	12.1
Can poor hygiene predispose to infection		
Yes	293	69.3
No	130	30.7
Could personal hygiene has a place in prevention of menstrual pain		
Yes	209	49.4
No	214	50.6
Menstrual absorbent ideally used		
Sanitary pad	232	54.8
Home made	191	45.2
Menstrual blood is unhygienic		
Yes	332	78.5
No	91	21.5
Menstrual Knowledge based on the score		
Poor knowledge	147	34.8
Fair knowledge	131	31.0
Good knowledge	145	34.3

3.3. Practice on Menstrual Hygiene of Secondary School Girl Students

Majority of adolescent girls (77.5%) were using homemade cloth and 22.5% were using sanitary pad during menstruation. Cleaning of external genitalia was reported by (86.1%) of girls. However, for cleaning purpose, only 91(21.5%) girls used both soap and water. About 207(48.9%) of the girls reported that they changed their menstrual hygiene materials twice a day, 112(26.5%) of them did change once a day and 104(24.6%) of girls change three times and more. Three hundred twenty six (77.1%) throw used menstrual soaking materials in the latrine and 38(9%) throw used pad in the open field. Only 191(45.2%) respondents take rest during menstruation. In general one hundred twenty six (29.8%) of the respondents practiced good menstrual hygiene whereas 297(70.2%) practiced poor menstrual hygiene.

3.4. Factors Associated with Practice on Menstrual Hygiene

Bivariate analysis showed that there was statistically significant association between menstrual practice and age of the respondents, grade level, prior information about menstruation before menarche, exposure to advertisement of sanitary products and knowledge on menstrual hygiene. After bivariate analysis, the factors of Good menstrual hygiene with p-value <0.2 were entered into the multivariate model. In multivariate analysis, there was statistically significant association between menstrual hygiene practice and exposure to advertisement regarding usage of sanitary napkins in mass media (radio/T.V) and knowledge on menstrual hygiene. The likelihood of good menstrual practice among girls who had exposure to advertisement is two times higher compared to girls who had no exposure to advertisement (AOR 2.06(1.27, 3.34). Girls with good knowledge on menstrual hygiene were two times more likely to have good practice when compared to girls with poor knowledge (AOR 2.23(1.06, 4.71). (Table 3)

Table 3. Factors independently associated with practice on menstrual hygiene of secondary school girl students, Wegere District, 2014.

Independent factors	Menstrual practice		COR(95% CI)	AOR (95% CI)	P-value
	Good	Poor			
Age					0.117
14-15	10	53	1.00	1.00	
16-17	68	172	2.09(1.008,4.35)	(0.764,3.656)	
>=18	48	72	3.53(1.63,7.6)	(1.012,5.686)*	
Grade level					0.578
9	53	167	1.00	1.00	
10	73	130	1.76(1.16,2.69)	(0.702,1.883)	
Permanent pocket money					0.571
No	47	139	1.00	1.00	
Yes	79	158	1.47(0.96,2.26)	(0.720,1.815)	
Drinking water source					0.306
Private	27	45	1.00	1.00	
Public	99	252	0.65(0.38,1.11)	(0.761,2.382)	
Prior information about Menstruation					0.117
No	14	64	1.00	1.00	
Yes	112	233	2.19(1.18,4.08)	(0.302,1.143)	
Exposure to advertisement					0.005*
No	80	239	1.00	1.00	
Yes	46	58	2.36(1.49,3.76)	0.493(0.302,0.806)*	
Knowledge on Menstrual hygiene					0.015*
Poor knowledge	25	122	1.00	1.00	
Fair knowledge	43	88	1.81(0.92,3.53)	1.893(1.04,3.44)*	
Good knowledge	58	87	3.53(1.77,7.03)	2.37(1.31,4.288)*	

Note: 1.00=Reference * =p<0.05

4. Discussion

In this study, 145(34.3%) had good knowledge and 131(31%) had fair knowledge about menstrual hygiene. This finding is almost similar with the result of the study done in Nepal which showed that only 40.6% had good knowledge about menstrual hygiene (5). The finding is also lower than a study done in northwest Nigeria which indicated that 91.5% of the participants had high level of knowledge about

menstrual hygiene (19). This difference might be due to the reason that mothers in the study area were illiterate and not interested to express their views and to educate their daughters about menstrual hygiene because of the taboo of discussing about menstruation.

The study shows that awareness of girls about menstruation before menarche was 81.6% which is almost the same as research done in Malawi 82% and 77% in Teheran (2, 19). In the present study 46.3% of girls reported mother as the first informant about menstruation and 44.4%

reported friends as source of information, similar studies done in Malaysia in 2006 reported as 80% and 39.7% respectively (20). The difference noted may be due to poor literacy and cultural restrictions of mothers have fuelled the inhibitions a mother has to talk to her daughter regarding menarche and the significance of menstrual hygiene. In this study 54.8% of girls knew that sanitary products are available for menstrual protection which is lower compared to study conducted in Kano, Northwestern Nigeria most of the respondents (94.0%) knew about it (19). This may be due to poor counseling of teachers, poor literacy level of mothers and availability of sanitary pads.

In the present study, 29.8% had good practice of menstrual hygiene. This is lower as compared with the study done in north western Nigeria which showed that 88.7% had good practice of menstrual hygiene (19). The gap observed may be due to difference in socio-economic status and availability and accessibility of sanitary products. About 207(48.9%) of the girls reported that they changed their menstrual hygiene materials twice a day, 112(26.5%) of them did change once a day and 104(24.6%) of girls change three times and more. Whereas similar study in Nigeria reported the majority (60%) changed sanitary pads three times a day (14). The difference may be due to low socio-economic status to buy sanitary pad and soap, shortage of water and poor knowledge on menstrual hygiene.

The result of the present study revealed that exposure to advertisement of sanitary napkins was positively associated with menstrual hygiene practice. This finding was found consistent with the study on Paltagarh High School in Singur Block of Hoogly district, West Bengal [AOR 2.52(1.1-2.57)] (21).

Knowledge on menstrual hygiene was positively associated with practice on menstrual hygiene. This finding was consistent with other studies. A Cross Sectional Study among Female Adolescents in An Urban Slum of Mumbai, Significant association was observed between having good/fair knowledge and good practices ($p < 0.01$). Similarly a study in Nigeria found the association between knowledge of menstruation and menstrual hygiene practice ($p < 0.05$) (12, 16).

5. Conclusions

The knowledge of secondary school girls on menstrual hygiene was not adequate and the practices are often not optimal for proper hygiene. Exposure to advertisement regarding sanitary napkins and knowledge on menstrual hygiene were found to influence practice on menstrual hygiene of secondary school girls.

Development of a comprehensive school health education program and mass media should have an active role in raising the awareness of adolescent's flames about the physiological, psychological aspects of menstruation and the proper hygiene as well and creating an environment where girls could get menstrual hygiene materials with subsidized price within school premises.

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