

# Menstrual hygiene management: A study of adolescent schoolgirls in sebeta town, oromia region, Ethiopia

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## Abstract

While ensuring reproductive health of women is one of the most important agendas of Sustainable Development Goals (SDGs), menstrual hygiene practices are still clouded by social and cultural restrictions resulting in adolescent girl's reproductive health complications and economical drawbacks.

**Objective:** To assess menstrual hygiene management practice and its determinants among adolescent girls in second cycle schools of Sebeta Town, Oromia Regional State.

**Method:** This study uses a school based cross-sectional study design was conducted among 466 in-school adolescent girls of grade 7 and 8 in Sebeta Town in December 2016. A single-stage cluster sampling was used to select the students for the present study. The outcome variable for the present study was menstrual hygiene management practice among in-school adolescents. Data entered using EpiData 3.1 and analysis was done using SPSS for windows version 21. Bi-variate and multivariable logistic regressions analysis were conducted to examine the determinant factors of menstrual hygiene practice of adolescent female in-school students. A p-value of 0.05 was used as a cut off value to declare statistical significance.

**Results:** The proposed sample size for the present study was 485; however, a total of 466 adolescent female students participated in the study making the response rate 95.9%. The prevalence of proper practice of menstrual hygiene management among in-school adolescent girls was one in five (21%). Mothers were the major source of information about menstruation before menarche and menstrual hygiene management as well. Young adolescent girls who had a partial awareness about menstrual hygiene management practice [AOR=0.60 (0.36, 0.98)] and unfavorable attitude towards it [AOR=0.37, 95% CI: 0.22, 0.61] were less likely to practice menstrual hygiene management.

**Conclusions:** Many adolescent girls miss school because they lack appropriate facilities within school that allow for private management of their menstrual hygiene. Working on awareness creation on menstrual hygiene management and making school environment conducive to girls does greatly improve the menstrual hygiene management experience of young adolescent girls.

## Introduction

Menstrual hygiene is a vital event in the life course of women, and it is also more than a hygiene. Sever reproductive health complications and morbidities could happen as a result of the poor menstrual hygiene management. Women in the low resource setting countries suffer more from lack of access, knowledge and low practicing of menstrual management.

The study done in developing countries observed that lack of policy debate; action and investments regarding menstrual hygiene and management were widespread in developing countries. Adolescent girls often are reluctant to discuss this topic with their parents and often hesitate to seek help regarding their menstrual problems [1-4].

It is estimated that around 52% of the females from all over the world (which approximates to 26% of the global population) belong to the reproductive age [5]. Although menstruation is a natural process of the female reproduction, it is always considered as a taboo and people often feel shy to talk about it [6]. Due to that reason, it becomes more difficult for the girls to prepare for and follow the hygiene practices [7,8].

In adolescents who experience menstruation for the first time, menstrual hygiene management (MHM) is constrained by practical, social, economic and cultural factors such as the expense of commercial sanitary pads, lack of water and latrine facilities, lack of private rooms for changing sanitary pads, and low awareness about the facts of menstrual hygiene[4,9,10]. UNICEF estimates that 1 in 10 school age African girls do not attend school during menstruation. Similarly, the World Bank statistics indicate that students will be absent from school four days every month because of menstruation [11].

Despite such evidences of widespread concern, there is no cross-cultural study in Ethiopia in addition in sub urban setting where awareness about sex is relatively better, studies on menstrual hygiene

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are limited. Since there is inadequate information on menstrual hygiene among adolescent girls in Sebeta, this study will identify issues relevant to preparation, practices, social and challenges of menstrual hygiene management and its determinants among adolescent girls. The study also intends to identify necessary actions to be taken at local and regional levels through which the menstrual hygiene problems of adolescent girls can be addressed. It is also hoped that the findings from the study would generate further interest in the research field of reproductive health and menstrual hygiene in the context of Sebeta Town.

This study responds to a growing need for assessing the practice of menstrual hygiene management among adolescent girls as well it identifies socioeconomic and environmental determinants in second cycle of Sebeta Town, Oromia Ethiopia 2016.

## Patients and methods

**Study Design:** A school based cross-sectional study.

**Study Setting:** The present study was undertaken among adolescent girls of grade 7 and 8 in selected schools of Sebeta Town, Oromia region Ethiopia from December 7-17, 2016.

**Sample size determination:** Single population proportion formula was used to determine the sample size. That is, proportion of students with an appropriate menstrual hygiene management practice (35.4%) (29), 5% margin of error (d), a 95% confidence interval ( $Z=1.96$ ), a 10% non-response rate and a design effect of 1.5 was assumed. Furthermore, since the population size is less than 10,000 a finite population correction (The total number of students in all the 8 schools are  $N=1628$ ) was made on the sample size. Considering the above assumptions, the initial sample size,  $n_p$ , was calculated as 352. After finite proportion correction,  $n_p$  becomes 290. By adjusting for non-response and design effect, the final sample size is 485.

**Sampling technique:** A rapid assessment survey was conducted before data collection to get the exact number of adolescent girl students from each selected school. This rapid assessment was made to identify total number of sections and second cycle adolescent girl students by school, grade and section. The students were selected by using a single stage cluster sampling technique. There are 1628 girl students in these 8 schools. In the first stage of sampling, five schools were selected using probability proportion to size sampling technique. The schools were 'Mulugeta Gedle', 'Alemgena', 'Rogee', 'Karabu', and 'Dima Guranda'. Secondly, proportional allocation was used to distribute the sample over the five schools. Further, the sample allocated for each school was distributed proportionally first to grades 7 & 8 and then to sections under each of the grades. Finally, simple random sampling was employed to select students from each section using classroom attendance in collaboration with home room teachers of respective classes.

**Study Population:** Four hundred sixty-six in-school girls from the above-mentioned schools, of the 7<sup>th</sup> and 8<sup>th</sup> standards, were selected for the study.

**Study Tools and Technique:** A pretested and structured questionnaire was used in the study. The data collection technique was a personal interview of the study subjects. Data collected were reviewed for completeness and consistency by the supervisors and the principal investigator on daily basis.

**Methodology:** After taking permission from the school authorities, the class teachers of 7<sup>th</sup> and 8<sup>th</sup> grade were explained the purpose of

the study. The semi-structured questionnaire included topics which were related to menstrual hygiene practice: knowledge about menstrual hygiene management, attitude of adolescent girls towards menstrual hygiene management, availability of and access to water and availability of and access to separate latrines for female. The demographic information includes student's detail, family details, parent's education and then documented. The information about personal hygiene included washing and bathing during menses.

To maintain the quality of the data, the data collection tools were partially adopted from standard questionnaires and carefully designed based on the objectives of the research [12]. The principal investigator has submitted the draft of the questionnaire to the advisor and colleagues for comment and the comments given were incorporated into the final questionnaire. The questionnaires were translated to the local languages (Afaan Oromo and Amharic) and back translated to English to ensure consistency with different translators.

Data was entered, cleaned and prepared for analysis using EpiData 3.1 and exported to SPSS for windows version 21 for analysis. Percentages, frequencies, chart, and cross tabulations were used to describe the major characteristics of respondents. Further, bi-variate and multivariable logistic regressions analysis was conducted to identify the determinant factors of menstrual hygiene practice of adolescent female in-school students. A bi-variate analysis was used to identify candidate variables for the multivariable analysis. A 20% p-value was used in the bi-variate analysis in order not to miss potential variables early from the multivariate analysis. Crude Odds Ratio (COR) and Adjusted Odds Ratio (AOR) were the effect measures of association used in the analysis to identify the predictors of menstrual hygiene management practice. A p-value of 5% was used as a cut off to declare statistical significance in multivariable analysis for this study.

**Ethical clearance:** The research protocol was approved by Addis Ababa University School of Public Health Ethical Review Committee. An official letter of approval was written to Oromia Regional Health Bureau (ORHB) from School of Public Health. Moreover, a letter of approval and cooperation was secured from ORHB and submitted to Sebeta Town Education Office. The letter was then referred to the selected schools for notification and cooperation. Verbal consent was obtained from parents of the students through the supervisors of the present study.

## Results

A total of 466 adolescent female students of Sebeta Junior School participated in the study with response rate of 95.9%. The non-response was due to the fact that 14 of the questionnaires were incomplete and 5 of the selected students reported of not having started menstruating. The respondents constitute in the ratio of 49 to 51 for grade 7 and 8. About 7 in 10 of the students live in urban. Two third of the participants were followers of Orthodox Christianity and the remaining were Protestant (16.3%) and Muslim (16.3%) an insignificant number of the students were observers of other religions including 'Waqefata' (1.9%). Nearly three quarter of the respondents were Oromo (73.0%) followed by Gurage (12.9%) and Amhara (10.5%) ethnicity. The living arrangement of the participants was gathered and 2 in 5 of them live with both parents while 41.6% of them live with relatives. The remaining 16.1% were living with single parent during the time of the survey. The mean age of the students was 15.5 with a standard deviation of 1.1 whereas the average age of menarche was 13.3 ( $SD=\pm 1.0$ ).

Pertaining to educational status of mothers' half of them (50.5%) were illiterate, one in five of the mothers were able to read and write

and those who had attended primary schooling were 18.9%. Students whose mothers had attended above secondary level of education were only 8.6%. Regarding paternal educational status, 28.9% of them were illiterate and 1 in 3 of them were able to read and write. The remaining 38.2% attended at least primary level of education. Regarding the occupation of parents, three in five of the fathers were farmers while a little more than half (53.8%) of the mothers were housewives (Table 1).

Four in five of the students had information about menstruation before the onset of their menarche. The prominent sources of information about menstruation were adolescents' mothers (44.4%), teachers (30.6%), elder sisters (26.1%) and girls club (25.8%). Friends (15.4%), mass media (5.6%) and other sources (1.1%) of information were also mentioned as a source of information. Awareness about menstrual hygiene management was highly prevalent (79.2%) among in-school adolescents in Sebeta Town. Similar to source of information about menstruation, the sources of menstrual hygiene management were mothers (39.5%), elder sisters (27.3%), girls club (23.8%) and teachers (23.0) held the leading places. Friends (14.3%), mass media (4.6%) and other sources (1.1%) were mentioned by fewer numbers of female students as sources of menstrual hygiene management.

Two in five (39.4%) of the respondents told their mother about their first experience of menstruation whereas one in four (25.8%) of them told it to their elder sister. Some of the respondents shared information about their first experience to their friends (11.2%) and teachers (2.2%). About a quarter (24.1%) of them kept it secret and did not tell their experience to anyone. While a third of the respondents (34.3%) openly communicate with family about menstruation, the reasons mentioned by the respondents for non-existence of open communication about menstruation in the family were shame (30.1%), taboo (14.7%) and both (54.9%). Further, one in five (19.7%) had a misconception about the cause of menstruation while the rest of the respondents mentioned biological growth as a cause for menstruation (Table 2).

The practice of menstrual hygiene practice among in-school adolescent girls was ideal for one in five (21.0%), one half (49.1%) of the girls had a good and 1 in 10 had a fair practice. The remaining one in five (19.7%) do not practice menstrual hygiene management. The prevalence of menstrual hygiene practice among in-school female adolescents was, therefore, 80.3%. The prevalence of menstrual hygiene management practice was also analyzed over different social and economic and demographic characteristics of adolescent girls. Prevalence of practice of menstrual hygiene of adolescent in-school girls by paternal education with primary level was 90.1% and secondary education was 84.9%. However, in-school girls whose mothers were illiterate were disadvantaged of menstrual hygiene practice with a 72.4% prevalence of practice. On the other hand, the prevalence of practice ranges from 84.9% to 92.5% for adolescent in-school girls of whose mothers can read and write to those who attended at least secondary and above level of education. The prevalence of practice for adolescent in-school girls whose mothers' occupation is farming is the least (76.0%) and private employees (76.6%) as compared to other occupation categories (Table 3).

Out of 466 respondents, 4 in 5 of them use sanitary pad and 40.8% of them use water and soap for washing while 26.2% of them change menstrual pad three times daily during menstrual period. Moreover, it was observed that more than 1 in 10 of them re-use sanitary pad.

Regarding school absenteeism, 48.9% of them had an experience of school absenteeism during menstruation. Only 6.0% of them default from school for longer than 4 days during their menstruation.

**Table 1.** Background characteristics of in-school adolescent girls, Sebeta, 2016

Characteristics	Categories	Freq.	%
<b>Grade (n=466)</b>	Grade 7	229	49.1
	Grade 8	237	50.9
<b>Residence (n=466)</b>	Urban	317	68.0
	Rural	149	32.0
<b>Religion (n=466)</b>	Orthodox	305	65.4
	Protestant	76	16.3
	Muslim	76	16.3
	Other	9	1.9
<b>Ethnicity (n=466)</b>	Oromo	341	73.2
	Gurage	60	12.9
	Amara	49	10.5
<b>Living arrangement (n=466)</b>	Other	16	3.4
	Mother and Father	197	42.3
	Only mother	66	14.2
	Only father	9	1.9
<b>Father's education (n=456)</b>	Relative	194	41.6
	Illiterate	132	28.9
	Read and Write	150	32.9
	Grade 1-8	101	22.2
<b>Mother's education (n=465)</b>	Secondary and above	73	16.0
	Illiterate	235	50.5
	Read and Write	102	21.9
	Grade 1-8	88	18.9
<b>Father's occupation (n=448)</b>	Secondary and above	40	8.6
	Farmer	258	57.6
	Government Employee	62	13.8
	Private	54	12.0
	Merchant	50	11.2
	NGO Employee	19	4.2
<b>Mother's occupation (n=459)</b>	Other	5	1.1
	Housewife	247	53.8
	Farmer	75	16.3
	Private	55	12.0
	Merchant	46	10.0
	Government employee	20	4.4
	NGO Employee	14	3.0
<b>Age (n=466)</b>		15.5 ± [1.1] SD*	
<b>Age menarche (n=466)</b>		13.3 ± [1.0] SD*	

Note: \*SD=Standard Deviation

The reasons for absence from school mentioned by the students were abdominal pain (58.3%), fear of others (47.8%) and lack of toilet (4.8%) and water (37.7%) in the school environment (Table 4).

The prevalence of menstrual hygiene management practice varied greatly by level of awareness and attitude of in-school adolescent girls. The prevalence progressively decreases with a decrease in the level of awareness about menstrual hygiene management. The prevalence for in-school adolescent girls with general and partial awareness was 83.9% and 75.5%, respectively. It further decreases to 66.7% for those with no awareness about menstrual hygiene management. The prevalence of practice was greatly affected by attitude towards menstrual hygiene practice of in-school adolescent girls. The prevalence of practice for those having a favorable attitude was 88.6% while the figure for those with unfavorable attitude was 68.7%. The prevalence was also compared

**Table 2.** Awareness and communication about menstruation among in-school adolescent girls, Sebeta 2016

Characteristics	Categories	Freq.	%
<b>Who did you tell your first experience?</b>	Mother	183	39.4
	Elder sister	120	25.8
	Friends	52	11.2
	Teacher	10	2.2
	No one	112	24.1
<b>Open communication about Menstruation</b>	No	306	65.7
	Yes	160	34.3
<b>Reason for non-communication about menstruation</b>	Shame	92	30.1
	Taboo	45	14.7
	Both	168	54.9
<b>Awareness about cause of menstruation</b>	Growth	374	80.3
	Do not know	68	14.6
	Health Problem	24	5.2

**Table 3.** Percent distribution of menstrual hygiene practice by socio-economic and demographic characteristics of in-school adolescent girls, Sebeta 2016

Characteristics	Categories	Freq.	Menstrual Hygiene Management			
			Ideal (%)	Good (%)	Fair (%)	Not practicing (%)
<b>Grade</b>	Grade 7	229	28.4	41.0	11.8	18.8
	Grade 8	237	13.9	57.0	8.4	20.7
<b>Residence</b>	Urban	317	20.5	51.4	9.2	18.9
	Rural	149	22.2	44.3	12.1	21.5
<b>Religion</b>	Orthodox	305	21.6	45.6	10.5	22.3
	Protestant	76	27.6	54.0	2.6	15.8
	Muslim	76	9.2	60.5	15.8	14.5
	Other	9	44.4	33.3	11.1	11.1
<b>Ethnicity</b>	Oromo	341	25.5	46.0	9.1	19.4
	Amara	60	8.2	61.2	6.1	24.5
	Gurage	49	6.7	58.3	18.3	16.7
	Other	16	18.8	43.8	12.5	25.0
<b>Living arrangement</b>	Mother and Father	197	11.9	56.4	11.2	20.8
	Only mother	66	24.2	48.5	6.1	21.2
	Only father	9	22.2	44.4	22.2	11.1
	Relative	194	29.4	42.3	9.8	18.6
<b>Father's education</b>	No education	132	22.7	43.9	9.8	23.5
	Read and Write	150	17.3	46.8	11.3	24.7
	Grade 1-8	101	19.8	59.4	10.9	9.9
	Secondary and above	73	28.8	50.7	5.5	15.1
<b>Mother's education</b>	Illiterate	235	20.8	38.3	13.2	27.7
	Read and Write	102	21.6	61.8	7.8	8.8
	Grade 1-8	88	21.6	59.1	3.4	15.9
	Secondary and above	40	20.0	60.0	12.5	7.5
<b>Father's occupation</b>	Farmer	258	26.0	43.0	9.7	21.3
	Merchant	62	14.0	50.0	12.0	24.0
	Government Employee	54	14.5	66.1	8.1	11.3
	NGO Employee	50	15.8	52.6	15.8	15.8
	Private	19	14.8	57.4	11.1	16.7
	Other	5	40.0	60.0		
<b>Mother's occupation</b>	Housewife	247	15.8	52.2	13.0	19.0
	Farmer	75	37.3	32.0	6.7	24.0
	Merchant	55	17.4	56.5	6.5	19.6
	Government employee	46	30.0	50.0	5.0	15.0
	NGO Employee	20	7.1	78.6	14.3	
	Private	14	25.4	45.4	5.4	23.6
<b>Total</b>	Other	2	50.0	50.0		
		466	21.0	49.1	10.1	19.7

across open communication about menstrual hygiene management practice categories. The prevalence among those who openly communicate with families, teachers and/or peers was higher (82.0%) as compared to those who do not openly communicate about menstrual hygiene management (73.0%). While many of the respondents agree on the presence of separate latrine in school environment, there is lack of enough and suitable water in school. The prevalence of hygiene management is affected by availability of enough and suitable water in school (Table 5).

Social, economic, demographic and school environment variables along with awareness and attitude of adolescent girls about menstrual hygiene management were considered in exploring and identifying the determinants of menstrual hygiene management practice of in-school adolescent girls. Both bi-variate and multivariate binary logistic regression models were fit for this purpose and the result of the analysis is displayed in the following table. The following narration is based on the result displayed in Table 6 below.

**Table 4.** School absenteeism and reasons for absence during menstruation of in-school girls, Sebeta 2016

Characteristics	Categories	Freq.	Menstrual Hygiene Management			
			Ideal (%)	Good (%)	Fair (%)	Not practicing (%)
Level of awareness about MHM	General awareness	285	20.7	54.0	9.1	16.1
	Partial awareness	163	22.7	41.7	11.0	24.5
Attitude to MHM	Not at all	18	11.1	38.9	16.7	33.3
	Favorable	271	23.6	59.4	5.5	11.4
	Unfavorable	195	17.4	34.9	16.4	31.3
Open communication	Yes	377	21.5	51.7	8.8	18.0
	No	89	19.1	38.2	15.7	27.0
Availability of separate latrine in school environment	Yes	343	17.8	51.6	10.5	20.1
	No	123	30.1	42.3	8.9	18.7
Availability of enough and suitable water in school	Yes	36	36.1	44.4	8.3	11.1
	No	430	19.8	49.5	10.2	20.5

**Table 5.** Percent distribution of menstrual hygiene practice by awareness and attitude of in-school adolescent girls, Sebeta 2016

Characteristics	Categories	Menstrual Hygiene Management Practice		COR [95% CI]	AOR [95% CI]
		No	Yes		
Grade	Grade 7	43	186	1.13[0.71,1.78]	
	Grade 8Ref	49	188	1.00	
Age	Young	13	58	0.90[0.44,1.842]	
	Adolescent Ref	30	149	1.00	
Residence	Urban	60	257	1.17[0.72,1.90]	
	Rural Ref	32	117	1.00	
Living arrangement	Both Parent Ref	41	156	1.00	
	Single parent	15	60	1.05[0.54,2.04]	
	Relative	36	158	1.15[0.70,1.90]	
Father's education	Illiterate Ref	31	101	1.00	1.00
	Read and Write	37	113	0.94[0.54,1.62]	0.59[0.32,1.08]
	Grade 1-8	10	91	2.79[1.30,6.01]	1.59[0.70,3.69]
Mother's education	Secondary and above	11	62	1.73[0.81,3.69]	0.90[0.37,2.22]
	Illiterate Ref	65	170	1.00	1.00
	Read and Write	9	93	3.95[1.88,8.29]	4.34[1.91,9.86]
	Grade 1-8	14	74	2.02[1.06,3.83]	1.65[0.78,3.52]
Father's occupation	Secondary and above	3	37	4.72[1.40,15.83]	2.98[0.80,11.12]
	Farmer Ref	55	203	1.00	
	Private	21	83	1.07[0.61,1.88]	
Mother's occupation	Employed	10	76	2.06[1.00,4.24]	
	Housewife Ref	47	200	1.00	
	Private	40	136	0.80[0.50,1.28]	
	Employed	3	33	2.58[0.76,8.79]	
Level of Awareness	General Ref	46	239	1.00	1.00
	Partial or less	46	135	0.56[0.36,0.90]	0.60[0.36,0.98]
Attitude	Favorable Ref	31	240	1.00	1.00
	Unfavorable	61	134	0.28[0.18,0.46]	0.37[0.22,0.61]
Open communication about menstruation	No	24	65	0.60[0.35,1.02]	
	Yes Ref	68	309	1.00	
Availability of separate latrine in school environment	Yes Ref	69	274	1.00	
	No	23	100	1.10[0.65,1.85]	
Availability of enough and suitable water in school	Yes Ref	4	32	1.00	
	No	88	342	0.49[0.17,1.41]	

**Table 6.** Result from Logistic Regression Analysis for Menstrual Hygiene Management Practice among in-school adolescent girls, Sebeta 2016

Characteristics	Categories	Menstrual Hygiene Management Practice		COR [95% CI]	AOR [95% CI]
		No	Yes		
Grade	Grade 7	43	186	1.13[0.71,1.78]	
	Grade 8Ref	49	188	1.00	
Age	Young	13	58	0.90[0.44,1.842]	
	Adolescent Ref	30	149	1.00	
Residence	Urban	60	257	1.17[0.72,1.90]	
	Rural Ref	32	117	1.00	
Living arrangement	Both Parent Ref	41	156	1.00	
	Single parent	15	60	1.05[0.54,2.04]	
	Relative	36	158	1.15[0.70,1.90]	
Father's education	Illiterate Ref	31	101	1.00	1.00
	Read and Write	37	113	0.94[0.54,1.62]	0.59[0.32,1.08]
	Grade 1-8	10	91	2.79[1.30,6.01]	1.59[0.70,3.69]
	Secondary and above	11	62	1.73[0.81,3.69]	0.90[0.37,2.22]
Mother's education	Illiterate Ref	65	170	1.00	1.00
	Read and Write	9	93	3.95[1.88,8.29]	4.34[1.91,9.86]
	Grade 1-8	14	74	2.02[1.06,3.83]	1.65[0.78,3.52]
	Secondary and above	3	37	4.72[1.40,15.83]	2.98[0.80,11.12]
Father's occupation	Farmer Ref	55	203	1.00	
	Private	21	83	1.07[0.61,1.88]	
	Employed	10	76	2.06[1.00,4.24]	
Mother's occupation	Housewife Ref	47	200	1.00	
	Private	40	136	0.80[0.50,1.28]	
	Employed	3	33	2.58[0.76,8.79]	
Level of Awareness	General Ref	46	239	1.00	1.00
	Partial or less	46	135	0.56[0.36,0.90]	0.60[0.36,0.98]
Attitude	Favorable Ref	31	240	1.00	1.00
	Unfavorable	61	134	0.28[0.18,0.46]	0.37[0.22,0.61]
Open communication about menstruation	No	24	65	0.60[0.35,1.02]	
	Yes Ref	68	309	1.00	
Availability of separate latrine in school environment	Yes Ref	69	274	1.00	
	No	23	100	1.10[0.65,1.85]	
Availability of enough and suitable water in school	Yes Ref	4	32	1.00	
	No	88	342	0.49[0.17,1.41]	

Age, residence, living arrangement, grade, occupation of parents and open communication about menstruation did not show a sizeable influence on menstrual hygiene management practice of adolescent in-school girls. The evidence from the analysis further corroborates that school environment characteristics such as presence of separate latrine for girls and availability of enough and suitable water did not have a statistically significant association with menstrual hygiene management practice. Educational status of the parents, level of awareness and attitude towards menstrual hygiene management practice of in-school adolescent girls had a substantial influence over the outcome.

Educational status of father of the students had a statistically significant impact on menstrual hygiene management of in-school girls in the bi-variate analysis; however, this influence vanishes when other factors such as maternal education, awareness and attitude of girls towards menstrual hygiene management practice is controlled. Maternal education, on the other hand, had a strong influence on the menstrual hygiene management practice of in-school girls. Students whose mother is able to read write were more than 4-fold likely to practice menstrual hygiene (COR=3.95 with a 95% CI [1.88, 8.29] and AOR=4.34 with a 95% CI [1.91, 9.86]) as compared to girls whose mothers are illiterate. Adolescent girls whose mothers had a primary and secondary and above level of education were also highly likely, COR=2.02 with a 95% CI [1.06, 3.83] and COR=4.72 with a 95% CI

[1.40, 15.83], respectively, to practice menstrual hygiene management than in-school girls whose mother is illiterate. However, educational status of the mother loses its significance when other factors are considered in the analysis.

Awareness and attitude towards menstruation and menstrual hygiene management practice of adolescent in-school girls had a consistent influence both in the bi-variate and multivariate analysis. Adolescent girls with unfavorable attitude towards menstrual hygiene management were 63% less likely to practice menstrual hygiene management (AOR=0.37 with a 95% CI [0.22, 0.61]) as opposed to adolescent girls with a favorable attitude towards same. Adolescent in-school girls with partial awareness about menstruation and its management were 40% less likely to practice the hygiene practice (AOR=0.60 with a 95% CI [0.36, 0.98]) when compared to those with a good level of awareness about menstruation and its management [Table 6].

### Discussion

The present study attempted to assess menstrual hygiene management practice and its determinants among in-school adolescent girls in Sebeta Town. The findings indicate that only 21.0% of in-school adolescents change menstrual pad three times a day. This indicates that a large number of adolescents in-school girls do not properly wash

perineal area and change menstrual pad properly. Studies conducted in Mekelle and Nekemte Town among high school students showed that the prevalence of changing menstrual protective materials properly was 40.8% and 39.9%, respectively. The probable reason for the disparity in the prevalence of practice could be that while my study is based on in-school young adolescent girls, the aforementioned studies focused on high school students who are probably more mature, experienced their menarche a long while ago and had a good level of awareness about menstruation and its management [13,14].

Menstruation is a natural phenomenon, always occurring, but unspoken. It is associated with psychological, physical, social and educational problems, but not well addressed or given due attention. Young adolescents are often ill prepared for menstrual experience before menarche [15]. In the present work, it is observed that mothers were the main source of information about menstrual experience before menarche for many in-schools' adolescent girls and also mothers were often told about the first experience of menstruation of their daughter. This shows that the strength of mother and daughter connection is very high even in families and communities where open communication about menstruation and its management is regarded as taboo.

During menstruation, various forms of problems threaten adolescent girls among which school absenteeism is one and commonest. The current study showed that nearly half (48.9%) of in-school adolescent girls were absent from school during menstruation for 1-4 days. The reasons mentioned by students for their absence from school were lack of water, lack of separate latrine for adolescent girls, fear of others and abdominal pain. In the present study, during data collection, all school toilets were observed. Even if the adolescent girl's toilet was separated from male students, practically male students also use girl's toilet. A similar finding was reported by studies conducted in Amhara and Tigray Regional States of Ethiopia [16]. These studies reported that the main reasons for school absenteeism during menstruation were lack of privacy for washing or cleaning, pain or discomfort and fear of accidental leakage of menstrual blood [14,17]. Many adolescent girls are missing school for the reason that they lack appropriate products and/or because facilities within school do not provide for their needs [16]. It is understandable how much this phenomenon affected the lives of adolescent girls by competing with their learning activities at school. Consequently, the results suggest that working on awareness creation on menstrual hygiene management and making school environment conducive to girls does not only address the single issue, but it also addresses the future social and economic status of girls in the society.

Regarding the determinants of menstrual hygiene management, it is maternal education rather than paternal education that influenced the menstrual hygiene management practice of in-school young adolescents in Sebeta Town. Maternal education was positively correlated with menstrual hygiene management practice, but the strength of association was higher for mothers who were able to read and write and the relationship loses its importance for maternal education of primary and above level of education. This may be due to the fact that educated mothers may lack time to provide their young daughters information regarding menstrual hygiene management and a good model of practice which affects their practice. Contrary to this finding, studies done on high school girls in western Ethiopia and rural areas of Bengal reported that maternal education and menstrual hygiene management practice were positively associated [8]. Further, a study done in northern Ethiopia reported a progressive positive influence of maternal

education on sanitary pad use of high school adolescent girls [2,16]. This is an indication of the fact that maternal education is relatively important in affecting the menstrual hygiene management practice of girls a long while after the onset of menstruation; however, for young daughters who recently started menstruating, maternal education did not play a role in influencing menstrual hygiene management practice of girls.

Awareness and attitude towards menstruation and menstrual hygiene management practice are the prominent characteristics of in-school adolescent girls that had a consistent and sizeable influence on the actual menstrual hygiene management practice in Sebeta Town. Adolescent in-school girls with partial awareness about menstruation and its management were 40% less likely to practice menstrual hygiene management. In-school adolescent girls with unfavorable attitude towards menstrual hygiene management were unlikely to properly practice menstrual hygiene management. Opposite to this, a cross-sectional survey of 1,295 rural adolescent girls aged 13 to 19 years was conducted and the finding indicated that a more positive attitude toward menstruation, the mean attitude score was 3.84 (SD ± 1.62) out of a maximum of six [3].

## Conclusion

The level of proper menstrual hygiene management practice among young adolescent in-school girls is very low and large proportions do not properly wash and change menstrual pad. Many adolescent girls miss school for the reason that they lack appropriate products and facilities within school that do not allow for their needs to be met. Besides, making school environment conducive to girls does greatly improve the menstrual hygiene management practice of young adolescent girls and their school experience. So, that, improve access to water in the physically accessible toilet facilities found in the school environment whereby girls can wash and change menstrual pad without fear or feeling ashamed and with dignity. Moreover, strengthen the schoolgirl club by providing basic information about menstruation and menstrual hygiene management for young adolescent girls. Above all, make menstrual hygiene management a priority agenda in the quarterly meeting of the parent-teacher association to minimize school absenteeism and enhance their performance.

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