Assessment of knowledge, attitude and practice among Adama high school girls towards menstrual hygiene and associated factors in Adama town, East Shoa zone, Ethiopia

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Abstract

Background: The issue of menstrual hygiene did not get proper attention. Utilization of sanitary napkins and washing genitalia are good practice of menstrual hygiene. Inappropriate management of menstrual hygiene can influence the health of the girls and expose for reproductive tract infection.

Objective: To assess the knowledge, attitude, practice of menstrual hygiene and associated factors among Adama high school girls in Adama town.

Method: A cross sectional study design was conducted by using multi stage random sampling technique for 604 females. Data was collected by trained data collectors from February 10 to 30, 2017 using pre-tested structured questionnaires and entered into Epi-info 7 and then exported to SPSS 21.0 for analysis. Bivariate and multivariate logistic regression analysis was done at p-value <0.05.

Results: Of total respondents, 59.8% had knowledge, 48.3% had good practice and 62.8% had favorable attitude for menstrual hygiene

management. Having information before menarche (AOR =3.04, 95%CI (1.66, 5.59)) and being housewives in occupation (AOR: 2.5, 95%CI (1.16, 5.42)) were factors associated with knowledge. Earning pocket money (AOR=2.6, 95%CI (1.67, 3.91)) was associated with menstrual hygiene management.

Conclusion: The study revealed low level of knowledge, poor practice and unfavorable attitude of girls towards menstrual hygiene management. Maternal occupation, not earning money and not having information before attaining menarche were variables related to poor menstrual hygiene management and thus providing information and helping financially for female girls for menstrual hygiene management was highly recommended.

Keywords: Knowledge, Attitude, Practice, Menstrual Hygiene Management, Adama Town.

Introduction

Over half of the population was estimated that females from all over the world, of which reproductive age group accounts approximately 26% of the total population (Sowmya H, 2012). From all reproductive age almost all females have normal menstrual cycle every month for the duration of from two to seven days. Woman will have approximately 500 periods in her lifetime. The estimated blood flow is between 50 and 200 ml (Dhingra R, 2009).

Even though it is natural and normal process usually it is considered as a taboo and people often shy to speak about menstruation (Dasgupta A, 2008) which becomes more and more difficult for the reproductive female to attend

the hygiene practices due to absence of open discussion on the issues among the society (Zegeye DT, 2009), seen as secret in many cultures and has a negative impact as their perception. A woman and girl on menstruation is decided as unclean that may lead to discrimination, decreased motion and edible limitation. Menstruating girl and woman may be neglected from participate in every community duty, absent from school (Dhingra R, 2009; UNICEF, 2013; Bharadwaj S, 2014; Akpenpuun J.R, 2014; WHO/UNICEF, 2015). Poor hygiene during menstruation has been associated with serious ill-health, including reproductive tract and urinary tract infections (WHO/UNICEF, 2015).

According to estimates of the United Nations Children's Fund (UNICEF), about one in ten school-age African girl didn't attend school during menstruation or dropped out at puberty due to lack of cleanliness and separate toilet facilities for female students at schools (United Nations Children's Fund, 2005) more than a third of student's class concentration reduced in Ethiopia due to this, and about 43% of informants were obliged to have missed school during their menstruation days (Fehr A, 2011). Lacks of separate facilities were also related with a high rate of female school dropouts in Oromia (65%) and Amhara (33%) regional states of Ethiopia (Nekatibeb T, 2002).

A finding of study done in India indicated that only 36.95 percent of adolescent female got awareness about menstruation before menarche and their main source of information were mother 71.33 % (Thakr D, 2011).

According to study done in Nekemte town 60.9 % girls had good knowledge about menstruation and its hygiene, 76.9 % menstruation was a normal

physiology, 9.7% respondents believed that it was a curse from God (Shivaleela P. U, 2015). Study done in Ethiopia Wogera district indicated that 29.8% of the respondents had good menstrual hygiene practice while the rest are poor menstrual hygiene (Shangia M, 2012). Factors that affects the person's hygiene such as socioeconomic status that influenced person's ability to regularly maintain hygiene, health, beliefs and motivation about importance of hygiene, and cultural behavior which depends on person's cultural belief and personal values of hygiene care (Maryam Balqis I.F.D.A, 2016; Gultie T, 2014; Kncoucouvinis J F J., 2016; Kameraan N, 2015; Ramathuba D.U., 2015; Vanijk AM, 2016; Naruemon A, 2013).

Thus, the need to conduct this study was to identify knowledge, attitude and practice gap contributing for low menstruation hygiene management, and associated factors and finally to recommend important stakeholders (mostly school and family) to improve menstruation hygiene management.

Objectives

General objective

To assess the knowledge, attitude, practice of menstrual hygiene and associated factors among Adama high school girls in Adama town, East shoa, Ethiopia, 2017.

Specific objectives;

1. To assess the knowledge towards menstrual hygiene management
2. To assess the practice of menstrual hygiene management
3. To assess the attitude towards menstrual hygiene management
4. To assess the associated factors of menstrual hygiene management

Methods and Materials

Study area

The study was conducted in East Shoa Zone Oromia Region, Adama town which is 99 km away from Addis Ababa to the East. The total populations were estimated to be over 324,000 on the area of the city 133,600 hectares which was owned by fourteen urban Kebeles (Ramathuba D.U, 2015). The town was located at east Africa rift valley with 1600 meters above sea level and has a climatic condition with annual average temperature $21^{O}C$ and 760 mm rain fall. Health facility of the town includes 1 governmental hospital, 3 private hospitals, and 18 governmental health centers and school facility 9 public secondary school and 16 private schools with total number of students 22,429, of which 10,536 are male while 11,893 females.

Study design and period

An institutional based cross sectional study design was implemented from February 10-30, 2017 G.C.

Source and Study population

Source population

All female students who enrolled in secondary schools from grade 9 to 12 in Adama town 2016/2017 academic year.

Study population

All female students grade 9 to 12 found in randomly selected schools during the 2016/2017 academic year.

Sample Size determination

The sample size was determined by using the formula of single population proportion based on the findings of previous study done in Nekemte town, which found that the knowledge of high school girls. Towards MHM which was 60.9 % and the practice of girls using sanitary napkins during menstruation was 66.2% (Shivaleela P U., 2015).

$((1.96)^2 (0.609) (1-0.609))/(0.05)^2$ = 366, adding 10% and multiplying by 1.5 design effect = **604**

Sampling procedure

Five high schools from twenty five high schools in Adama town were selected randomly by lottery method. Stratified sampling technique was used to select study participants in the respective grade from the selected schools. The participants selected through proportional allocation to sample size from each grade until required sample reached.

Variables of the study

Dependent variable: Knowledge, practice and attitude

Independent variables: place of residence, religion, educational status, educational level of parents, income of the family, age of respondent, ethnicity, presence of disposal facility in the school compounds, presence of source information on menstrual hygiene practice, presence of disposal/change facility in the house

Operational Definition

Knowledge of menstrual hygiene management: To measure the respondent's knowledge of menstrual hygiene, there were 8 specific

questions to assess knowledge parts with each correct answer assign 1 point and 0 for incorrect or don't know. Respondents that scored 0–2 points were adjudged as having poor knowledge; whereas those that scored 3–5 and 6–8 points were adjudged as having fair and good knowledge respectively (Gultie T.K, 2014).

Attitude towards menstrual hygiene: The measure of attitude towards menstrual hygiene focus on 9 questions. A 5-point Likert scale was employed to evaluate each item by providing 0 for "strongly disagree, disagree and neutral", and 1 for "agree and strongly agree". Individual scored on the range from 0 - 3 unfavorable attitudes, whereas those that scored 4-9 points were adjudged as having favorable attitude (Gultie T.K, 2014).

Menstrual Hygiene practice: The measure of menstrual hygiene practice focus on 10 questions to assess practice of menstrual hygiene during menstruation. Respondents who scored 5-10 points (≥50%) were considered as had good practice of menstrual hygiene and respondents answered 0-4 scores were considered as had poor practices of menstrual hygiene (Gultie T.K, 2014).

Data collection procedures

A data collection was conducted by using structured self-administered questionnaires under facilitation of two trained data collectors and supervisors for briefing the questions for the respondents which was prepared on socio demographic characteristics, knowledge, attitude and practice of the female students towards menstrual hygiene.

Data quality assurance

Translated and retranslated questionnaire to Afan Oromo and Amharic, pretested on 5% of non-study area, half day training for data collectors, the principal investigator and the supervisor were closely monitor the data collection process and daily check for its completeness to maintain its consistency and validity.

Data processing and analysis

Data was cleaned, entered on Epi-info and exported to SPSS analyses. Descriptive analyses including proportion, percentage and frequency distribution were used.

Logistic regression both bivariate and multivariate was used to test the significant independent variables by using COR and AOR at 95% CI, p-value less than 0.05. All variables found to be significant at bivariate level (at P-value < 0.05) was entered in to multivariate analysis using a logistic regression model in order to control for confounding factors.

Ethical consideration

Ethical Clearance was obtained from Arsi University, College of health sciences and letter of support was written from Arsi University College of health sciences to Adama Educational office to get permission and cooperation letter was written to the respective schools for facilitation of the study. Verbal informed consent was obtained from the participants before distributing the questionnaire. After explaining the purposes of the study confidentiality of the information they provided was maintained by omitting any personnel identifier.

Result

Socio demographic characteristics of high school girls

All 604 were participated in the study and made the response rate 100%. The mean age of the study participant was 16.93±1.361 years. 308(51%) of the respondents were from Oromo ethnic group. Family monthly incomes of the respondents greater than 3000 ETB were 207 (37.5%). About 169(28%) of the respondents' mothers were completed diploma and above. 331 (51.5%) of the mother of the respondents were housewives and from all respondents 565(93.5%) of their family have radio/TV. Source of information for 297 (49.2%) of respondents were radio/TV (Table 1).

Table 2: Socio demographic characteristics of high school girls, Adama town, Oromia region, Eastern Ethiopia, 2017

Variable	Frequency	Percent
Age		
≤17	408	67.5
≥18	196	32.5
Ethnicity		
Oromo	308	51
Amhara	185	30.6
Gurage	57	9.4
Tigre	30	5
Other	24	4
Family income		
<1000	113	20.7
1001-2000	127	23.2
2001-3000	100	18.3
>3000	207	37.8
Have radio/TV		
	565	93.5

Yes	39	6.5
No		
Educational status of mother		
Uneducated	30	13.2
Can read and write	94	15.6
Grade 1-4	38	6.3
Grade 5-8	99	16.4
Secondary schools	124	20.5
Diploma and above	169	28
Occupation of mother		
Housewife	311	51.5
Government employee	123	20.4
Merchant	140	23.2
Other	30	5
Source of information		
TV/radio	297	49.2
Family members	219	36.3
Friend	88	14.6
Earn money from family		
Yes	482	79.9
No	121	20.1
Have information before menarche		
Yes	553	91.6
No	51	8.4

Knowledge about menstruation and hygiene

Data obtained from the respondents, 360 (59.5%) had good knowledge about menstruation and menstrual hygiene. From total 267 (44.5%) of girls knew that menstruation was a physiological process about menstruation, 38(6.3%) respondents knew that menstruation is pathological process. 405 (67.4%) of the respondents knew that source of menstruation is uterus. 466 (77.7%)

knew that menstruation has foul smelling. 517(86.2%) respondents got awareness before attaining menstruation. 420(70.5%) respondents knew that unhygienic menstrual management can cause infection. The result of study indicated that 451 (74.7)) got facility change /dispose used modes. Respondents aware from mother were 265 (43.9%) (Table 2).

Table 3: Knowledge of high schoolgirls about menstrual hygiene, Adama town, Oromia region, East Ethiopia, 2017

Variables	Frequency	Percent (%)
Menstruation is Physiologic process		
Yes	267	44.5
No	106	17.7
Don't know	227	37.8
Menstruation is Curse of God		
Yes	427	70.9
No	108	17.9
Don't know	67	11.1
Menstruation is Pathologic process		
Yes	38	6.3
No	332	55.2
Don't know	262	43.5
Menstruation is bleeding from uterus		
Yes	405	67.4
No	93	15.5
Don't know	103	17.1
Menstruation is foul smell		
Yes	466	77.7
No	54	9
Don't know	103	17.1
Menstruation is unhygienic		
Yes	478	79.5
No	91	15.1
Don't know	32	5.3
Have awareness about menstruation before menarche	517	86.2
Yes	83	13.8

No		
Unhygienic menstrual management can cause infection	420	70.5
	47	7.9
Yes		
No		

Attitude towards menstrual hygiene

Respondents strongly agree feel comfortable to tell anyone as their period started were 62 (10.3%) whereas 94 (16.3%) strongly disagree. Respondents strongly agree talking about menstruation is taboo were 70 (7.6%) while 162(26.9%) strongly disagree out of total participants. Respondents who strongly agree on the question feel ugly and gross when on menstruation were 56 (9.3%) whereas 191 (31.6%) strongly disagree. Respondents who strongly agree not to put sanitary napkins in garbage were 129 (21.4) while 165 (27.4%) strongly disagree. Respondents strongly agree when on their menstruation comfortable to talk were 241 (39.9%) while 24 (3.9%) strongly disagree**,** respondents feel worry a lot about period starting unexpected strongly agree were 156 (25.8%) whereas (10%) strongly disagree (Table 3).

Table 4: Attitudes of high school girls towards menstrual hygiene in Adama town, East Ethiopia, 2017

Questionnaires	Strongly agree (%)	Agree (%)	Neutral (%)	Disagree (%)	Strongly agree Disagree (%)	Total
I feel comfortable to tell anyone as my period started	62(10.3)	67(11.1)	183(30.3)	198(32)	94(16.3)	604
I feel worry a lot about my period starting unexpected	156(25.8)	146(24.2)	156(25.8)	86(14.2)	60(10)	604
I don't like to put sanitary napkins in garbage	129(21.4)	88(14.6)	56(9.8)	163(27)	165(27.4)	604
I worry a lot that blood will leak through clothe	182(30.1)	111(18.4)	158(26.2)	80(13.2)	73(12.1)	604
I feel ugly and gross when I have period	56(9.3)	67(11.1)	64(10.6)	226(37.4)	191(31.6)	604
Talking about menstruation is a taboo`	70(7.6)	67(11.1)	112(18.5)	217(35.9)	162(26.9)	604
When I am on menstruation, I feel comfortable to talk/work with my friends and family	241(39.9)	151(25)	120(19.9)	68(11.3)	24(4)	604
During my period their limitation of food	65(10.8)	80(13.2)	69(11.4)	207(34.3)	183(30.3)	604
During my menstruation go to holy area is forbidden	135(22.4)	73(12.1)	57(9.4)	105(17.4)	135(22.4)	604

Hygienic practices during menstruation

The result of study revealed that, of 604 respondents, 294 (48.2%) of them had good practice on menstrual hygiene. The respondents used locally made absorbent materials and reuse modes during menstruation were 400 (66.2%). About 513 (85.4%) respondents used commercial absorbents during menstruation. 111 (18.5%) of respondents dried their clothes in the sunlight after used it as absorbents during menstruation. 229 (37.9%) of the participants changed their sanitary napkins three and above times a day. 28 (4.8%) of the girls were disposing the used sanitary napkins on open field. 204 (33.9%) of the respondents were disposing their used sanitary napkins in dustbin. 407 (67.7%) of the respondents were taking bath daily with soap during menstruation. 135 (22.5%) of the respondents were washed their external genitalia with soap and water. The study indicated that 245(40.9%) girls shaved their genitalia before menstrual bleeding begin (Table 4).

Table 5: Practice of high school girls on menstrual hygiene in Adama town, Oromia region, east Ethiopia, 2017

Variables	Frequency	Percent (%)
Use locally made and reuse absorbent material during menstruation	400	66.2
Use Commercial absorbents during menstruation	513	85.4
Changing modes or other absorbents three times and above	229	37.9
Take bathe with soap and water during menstruation	407	67.7
Wash external genitalia with water and soap	135	22.5
Disposing used sanitary pad in dustbin	204	33.9
Disposing used sanitary pad in toilet	366	60.9
Disposing used sanitary pad on open field	28	4.7

Drying clothes/pads in sun light	111	18.5
Shaving genitalia before menstrual bleeding starts	245	40.9
Had good practice of menstrual hygiene	294	48.2
Had poor practice of menstrual hygiene	310	51.8

Factors associated with knowledge about menstruation and menstrual hygiene

Multiple logistic regressions

Independent factors which were significantly associated in bivariate analysis were re-entered for analysis of cofounders. According to the result of this analysis those girls who had no information on menstruation were 3 times more likely poor knowledge of menstrual hygiene than those who have information on menstruation before attaining menarche (AOR:3.04, 95% CI (1.66, 5.59). Respondents whose mothers occupation housewives were 2.51 more likely good knowledgeable of menstrual hygiene than mothers with other occupation (AOR: 2.51, 95% CI (1.16, 5.42) (Table 5).

Table 6: Factors associated with knowledge about menstrual hygiene among high school girls Adama town, Oromia region, East Ethiopia, 2017

Variables		Knowledge		COR	AOR
		Poor knowledge (%)	Good knowledge (%)		
Place of residence	Rural	13(61.9)	8 (38.1)	1	1
	Urban	230(94.7)	353(97.8)	2.5(1.02,6.11)	2.29(0.91,5.37)
Have TV/radio	No	22(56.4)	17(43.6)	1	1
	Yes	221(39.1)	353(60.9)	2.2(1.72,6.11)	1.48(0.72,3.01)
Have information about menstruation	No	33(64.5)	18(35.3)	1	1
	Yes	210(38)	343(62)	**2.99(1,64-5. 45)**	**3.04(1.66,5.59)****
	Housewife	124(39.9)	187(60.1)	**2.26(1.05,4.86)**	**2.51(1.16,5.42)****
Mother occupation	G/ employee	55(44.7)	68(55.3)	1.22(0.80,1.86)	1.2(.22,1.11)
	Merchant	46(32.9)	94(67.1	0.74(0.49, 1.12)	0.75(.49,1.15)
	Other*	18(60)	12(40)	**1**	**1**

Others* Private Jobs, Private employee, laborers and ** P <0.05

Factors associated with menstrual hygiene practice among Adama high school girls

Multivariate analysis

Girls who did not get money for purchase sanitary napkin were 2.3 times likely poor practice when compared with those respondents earning pocket money for purchase sanitary napkins (COR:2.3, 95%, CI (1.45,3.61).

Table 7: Factors associated with practice of menstrual hygiene among high school girls in Adama town, Oromia region East Ethiopia in 2017

Variables		Poor practice %	Good practice %	COR	AOR
Occupation of mother	Housewife	158 (50.8)	153 (49.2)	1	1
	Gov't employee	73 (59.3)	50 (40.7)	0.71(0.46,1.08)	1.51(0.98,2.33)
	Merchant	71 (50.7)	69 (49.3)	1 (0.67,1.50)	1.11(0.73,1.67)
	Other	10 (33.3)	20 (66.7)	2.07(1.94,4.56)	0.49(.22,1.11)
Have radio /TV	No	27 (69.2)	12 (30.8)	2.2 (1.1,4.45)	
	Yes	285 (50.4)	280 (49.6)	1	1
Private room to change sanitary napkin/dispose	No	94 (61.4)	59 (38.6)	1.70(1.17,2.48)	1.41(0.95,2.11)
	Yes	218 (48.3)	233 (51.7)	1	1
Earn pocket money	No	84 (69.4)	37 (30.6)	1	1
	Yes	227 (47.1)	255 (52.9)	**2.6(1.67,3.91)**	**2.3(1.45,3.61)****

Other* Private Jobs, Private employee, Laborers and ** P <0.05

Discussion

Finding of this study showed that 59.8% of respondents had good knowledge of menstrual hygiene and menstruation. This study finding was in line with study done in Nekemte town was 60.9% had good knowledge. This study finding is lower than study done in Amhara region north Ethiopia which was 90.7% (Ketema T, 2014; Shivaleela P U, 2015). This difference study result from Amhara region might be cultural differences, source of information and residency of the study population, sample size and study period.

In this study 67% of the respondents knew that source of menstruation is uterus. According to the study done Nekemte 62% of the respondents knew as source of menstruation is uterus (Shivaleela P U, 2015). This difference could be due to cultural acceptance difference of discussing about menstruation and menstrual hygiene, level of education of the family, sample size difference and other socio-demographic differences like religion.

In this study 39.4% of respondents disagreed go to holy area is forbidden whereas 34.5% agreed on go to holy area is forbidden. The finding of study is lower than study conducted in Uttarak hand indicated 100% respondents did not go to holy area during their menstrual period, and study also conducted in west Bengal indicated that 70% respondents did not go to holy area (Vanijk AM, 2016; Naruemon A, 2013). The difference may be due to open discussion of the girls and religion leaders, families. The other possible explanation could be time of study period and sample size that has different power to bring the effect on the result.

This study revealed that 48.3% of respondents out of all respondents had good practice of menstrual hygiene. This finding was in line with study done in Nepal rural district 47% of the students had good menstrual hygiene practices. Study finding done in Ethiopia Wogera district good menstrual hygiene practice was found to be lower than this study, 29.8%. On the other

hand this study finding is lower than study done in Amhara region north Ethiopia, 90.9% had good practice of menstrual hygiene (Naruemon A, 2013; Ketema T, 2014; Meseret A.F, 2017). The possible explanation for the differences could be due to level of knowledge of menstrual hygiene, open discussion of daughters with their family, lack facilities like water for menstrual hygiene, private room, and pocket money to purchase the sanitary materials.

The result of this study showed that respondents who got information on menstruation before menstrual attains were 91.6%. Whereas study done in Africa revealed that an average of 66% of the girls had not known about menstruation before it began and Study finding done in India was 36% (Tamiru S, 2015; Nadu D, 2014). The possible reason of this difference could be residency of the respondents that can be rural and urban, sample size, study setting, study period, availability of mass-media for information and economical level of the families.

The finding of this study showed that School absenteeism related menstrual hygiene problem were 19.2% of the respondents from total participants. 32.5% were reported that missed classes attendance due to menstrual problem and 46.3% respondents reported it interfere their education concentration. The study finding conducted in Bangladesh indicated that 39% were absent during menstruation (Muhit S, 2013). The difference study finding might be due to study period differences, absent of private place for cleaning and disposing sanitary napkins, water supply, and embarrassment.

According to the result of this study those girls who had no information on menstruation were 3 times more likely had poor knowledge of menstrual hygiene than those who have information on menstruation before attaining menarche. This shows information is very important for the knowledge of

menstrual hygiene and mass media is providing information especially during advertising the sanitary pads.

According to this study finding there is statistical significant association between not earning pocket money and poor menstrual hygiene practice. Girls who did not get money for purchase sanitary napkins were 2.3 more likely had poor practice of menstrual hygiene when compared with those respondents got money for purchase sanitary napkins. This is similar with study finding in west Ethiopia Earning pocket money from family (Shivaleela P U, 2015). This might be due to girls who get money from their family can easily purchase sanitary napkins for their menstrual hygiene.

Conclusion and recommendation

Conclusion

In general, even though it is relatively better than study done in different countries of the world, the study revealed low level of knowledge, poor practice and unfavorable attitude of girls towards menstrual hygiene management. Maternal occupation, not to get money for purchasing sanitary napkins and girls having information before attaining menarche are factors related to knowledge and practice of menstrual hygiene management.

Recommendation

1. We would like to recommend the families, school leaders and teachers to openly discuss about menstruation and menstrual hygiene management.
2. We would like to suggest teachers can play a role on menstruation and menstrual hygiene management by strengthening female school clubs, use drama, advertising by mini-media to increase females' awareness and avoid taboos related to menstruation.

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