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Assessment of knowledge and practice of menstrual hygiene among high school

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Abstract

Introductions: The issue of menstrual cleanliness is deficiently recognized and has not gotten appropriate consideration. Utilization of clean cushions and washing the genital zone are fundamental practices to keep the menstrual cleanliness. Unhygienic menstrual practices can influence the wellbeing of the young ladies and there is an expanded weakness to regenerative tract contaminations and pelvic incendiary infections and different intricacies. Thusly, the goal of this investigation was to survey the learning and routine with regards to menstrual cleanliness among secondary school young ladies at Berhampur, Odisha.

Materials and methods: A school based cross-sectional investigation configuration was utilized in Berhampur, Ganjam. A multi arrange examining system was utilized to choose 828 female secondary school understudies. Information gathering was done from May 04 to May 30, 2014 utilizing a pre-tried organized survey. The information were gone into a PC utilizing Epi-data form 3.5.1 and after that traded to SPSS for Windows variant 20.0 for investigation. Bivariate and multivariate calculated relapse examination was done at 95% certainty interim.

Results: In this investigation, 504 (60.9%) and 330 (39.9%) respondents had great information and routine with regards to menstrual cleanliness separately. The discoveries of the investigation demonstrated a huge positive relationship between great learning of feminine cycle and instructive status of moms (AOR = 1.51, 95% CI = 1.02 – 2.22), having radio/TV (AOR = 2.42, 95% CI: 1.64 – 3.56). Instructive status of the mother (AOR = 2.03, 95% CI = 1.38 – 2.97) and gaining lasting pocket cash from guardians (AOR = 2.73, 95% CI = 1.76 – 4.26) uncovered noteworthy positive relationship with great routine with regards to menstrual cleanliness.

Conclusions: The discoveries demonstrated that the information and routine with regards to menstrual cleanliness is low. Mindfulness with respect to the requirement for data about great menstrual practices is imperative. In this way, wellbeing instruction program ought to be setup to make mindfulness and routine with regards to great menstrual cleanliness.

Keywords: Knowledge, menstruation, practice, sanitary pads, hygiene

Introduction

Immature young ladies establish a helpless gathering concerning their societal position as well as in connection to their wellbeing. In such manner, period is respected unclean or filthy in the public arena^[1]. The issue of menstrual cleanliness is insufficiently recognized and has not gotten appropriate consideration^[2]. Great sterile practices, for example, utilization of clean cushions and sufficient washing of the genital territories, are basic amid menstruation period. Ladies and young ladies of regenerative age need access to perfect and delicate retentive sterile items which over the long haul shield their wellbeing from different diseases^[3]. With this impact, the act of good men-strual cleanliness lessens the rate of regenerative tract contamination (RTI). In this manner, the outcomes of RTIs are serious and may result in huge negative effect to a lady's wellbeing including perpetual pelvic agony, dys-menorrhea (agonizing periods) and in extreme cases infertl-ity. Regenerative tract contaminations, which have turned into a quiet pandemic that decimates ladies' lives is firmly identified with poor menstrual cleanliness^[1, 4]. Every year roughly 10% of ladies worldwide are presented to genital diseases including urinary tract infec-tions and bacterial vaginosis, and 75% of ladies have a background marked by a genital contamination. In particular, the regular hazard factors for vaginal diseases incorporate pregnancy and poor cleanliness (both perineal and menstrual cleanliness)^[5].

Concentrates in Africa have discovered the utilization of sterile cushions as low as 18% among Tanzanian ladies with the rest of fabric or bathroom tissue^[6]. Investigations of Nigerian students have found somewhere in the range of 31 and 56% utilizing can tissue or material to retain their menstrual blood rather than menstrual cushions^[7, 8].

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An investigation led in Ethiopia demonstrated that, however, most (92%) understudies knew about monthly cycle before menarche, their usage of clean napkins was low at 37.6% and a huge extent, 62.4% were utilizing clothes and bits of fabric [9]. Eleven percent of young ladies in Ethiopia change their menstrual materials once every day [10].

Most young ladies in Ethiopia are in danger of getting genitourinary tract contaminations because of their unhygienic works on amid their monthly cycle period which may prompt further complication whenever left untreated [11].

Along these lines, this examination was planned to survey the information and routine with regards to menstrual cleanliness among secondary school young ladies in Western Ethiopia. The data acquired from this examination will be utilized by strategy producers and partners to recognize the mindfulness and routine with regards to menstrual cleanliness in order to give data about monthly cycle and menstrual cleanliness for secondary school young ladies in the investigation zone.

Methods

Study design, setting and participants School based cross-sectional study was employed from May 04 to May 30, 2014 among high school girl students in Berhampur, Ganjam, Odisha, India. The total population of the town is estimated to be 75,219 of which 38,385 (51%) was females. There are ten high schools (4 governmental and 6 non-governmental) in Nekemte town. In this town the total number of students enrolled for 9th and 10th grade levels were 5548 for the academic year 2013–2014 out which 2762 were male and 2756 were female [12, 13]. Girls studying in 9th and 10th grade were 1400 and 1392 respectively. The girls who attained menarche were included for the study. Girls with visual impairment, evening class students and those who were critically ill and incapable to provide informed consent were excluded from the study.

Sample size and sampling procedures

The sample size was determined using a formula for estimation of single population proportion with the assumption of 95% confidence interval, 5% margin of error, and prevalence of knowledge about menstruation at 51.36% [14], and design effect of 2. To compensate for the non-response rate, 10% of the determined sample was added up on the calculated sample size and the final sample size was found to be 845.

The sampling procedure started by stratifying the schools into two categories, governmental and non-governmental. The selection of the schools was done randomly. Each school was further stratified by their sections. For selection of representative numbers of students, the ratio of students in the respective types was considered. The sample size was allocated for the schools using population proportion to the sample for each selected school, size being the number of students in each high school (9th and 10th grade). Finally, proportional number of participants (students) was selected by simple random sampling technique. The sampling frame was obtained from the student registration books of the respective schools.

Data collection procedures

To collect data self-administered questionnaires were employed. After reviewing relevant literature questionnaires were adapted and modified [14–19]. The question-naire was prepared in English language and translated into Afan Oromo, the regional language and then translated back to English by other people who are proficient in both languages to maintain the consistency and content of the questionnaire. Six girls with high- school education were recruited as data collectors. They were given a day training to familiarize them with the objective and relevance of the study, confidentiality of information, participants’ rights and informed consent. Three graduate colleagues from health supervised the data collection procedures. Their supervision, involved reviewing all questionnaires at the end of every day, and morning meetings with the data collectors to discuss any problems they encountered during data collection and provide timely remedy.

Students’ menstrual knowledge score was calculated out of the 7 knowledge specific questions (Table 2). Each correct response earned one point, whereas any wrong or don’t know response attracted no mark and thus the sum score of knowledge was calculated (7 points). Accordingly, the mean score of menstrual knowledge (4.8 ± 1.67) was used to decide the cutoffs of the rank. Good knowledge of menstruation and menstrual hygiene was given to those respondents who scored 5–7 points and Poor Knowledge of menstruation and menstrual hygiene was given to those respondents who scored 0–4 points.

Students’ practice of menstrual hygiene score was calculated out of the practice specific questions (Table 2). Each correct response earned one point, whereas any wrong or don’t know response attracted no mark. In here, the sum score of practice was calculated (10 points). Where, the mean score of practice of menstrual hygiene (5.1 ± 1.57) was used to decide the cutoffs of the rank. Good practice of menstrual hygiene was given to those respondents who scored 6–10 points and Poor practice of menstrual hygiene was given to those respondents who scored 0–5 points.

Table 1: Socio-demographic characteristics of high school girls

Variables (828)	Number (%)	
Age category in years		
<= 16	539	(65.1)
>16	289	(34.9)
Grade		
Ninth	537	(64.9)
Tenth	291	(35.1)
Ethnicity		
Can’t read and write	98	(12)
Can read and write	200	(24.4)
Housewife	269	(32.7)
Student	139	(16.9)
Merchant	187	(22.7)
Employed in private organization	28	(3.4)
Governmental employee	102	(12.4)
Daily laborer	82	(10)
Others	16	(1.9)
Occupational status of the father’s (n = 820)		
Farmer	313	(37.8)
Government employed	278	(33.6)
Merchant	96	(11.6)

Table 2: Socio-demographic characteristics of high school girls, Nekemte Town, Oromia region, Western Ethiopia, 2014 (Continued)

Private organization	48 (5.8)
Daily Laborer	77 (9.3)
Others****	8 (1%)
Income (ETB) (n = 808)	
<800	215 (26.6)
800–1000	306 (37.9)
1001–2000	118 (14.6)
>2000	169 (20.9)
Mean	1801 ETB
Have radio/TV (n = 828)	
Yes	691 (83.5)
No	137 (16.5)
Earn money from the family (n = 828)	
Yes	109 (13.2)
No	719 (86.8)

Data processing and statistical analysis

Each completed questionnaires was coded on pre-arranged coding sheet by the principal investigator to minimize errors. Data were cleaned and entered into a computer using Epi-info Window version 3.5.1 statistical program. Then the data were exported to SPSS Windows version 20.0 for analysis. The de-scriptive analysis including proportions, percentages, frequency distribution and measures of central tendency was done.

Initially, bivariate analysis was performed between dependent variable (Knowledge and practice of menstrual hygiene) and each of the independent variables (Socio-demographic variables), one at a time. Their odds ratios (OR) at 95% confidence intervals (CI) and P-values were obtained, to identify important candidate variables for multivariate analysis. All variables found to be significant at bivariate level (at P-value < 0.05) were entered in to multivariate analysis using a logistic regression model in order to control for confounding factors.

Results

Socio-demographic characteristics of the respondents A total of 828 high school girls were participated making a response rate of 98%. Almost two third of (65.1%) were in the age group less than or equal to 16 years with median age of 16 years. The majority (92.9%) of the re-spondents were from the Oromo ethnic group. Half of the respondents (50.7%) were Ethiopian Protestants. Two hundred thirty eight (29%) of the respondents’ father completed college and above. One hundred seventy eight (21.6%) of the respondents’ mother can read and write. Nearly one third (32.7%) of the mothers of the respon-dents were housewives and three hundred thirteen (37.8%) of their fathers were farmers. Their family mean monthly income was Ethiopian birr (ETB) 1801. The ma-jority (86.8%) of the respondents didn’t get permanent pocket money form their families. Out of the total respon-dents six hundred ninety one (83.5%) of their family owned radio/TV (Table 1).

Knowledge about menstruation and its hygiene

According to the data obtained from the participants, five hundred four (60.9%) of the respondents had good knowledge about menstruation and its hygiene. Out of total six hundred thirty seven (76.9%) of girls knew that menstruation was a physiological process, eighty (9.7%) of the girls believed that it was a curse from God. Five hundred

nineteen (62.9%) knew that the cause of men-struation was hormone. More than half, five hundred four (60.9%) of the respondents knew the origin of the menstrual blood was from the uterus. Majority six hundred fifty seven (79.3%) knew about menstruation before attaining menstruation. Three fourth six hundred twenty two (75.1%) of girls knew about menstrual hygiene. Five hundred twenty seven (63.6%) knew that there was a foul smell during menstruation (Table 2).

The results of the study revealed that, 67.8% of the respondents got information about menstruation from their friends, followed by mass media, teachers, from their mothers and books (Fig. 1).

Table 2: Respondents knowledge about menstrual hygiene, Nekemte Town, Oromia region, Western Ethiopia, 2014

Variables (828)	Number (%)
Menstruation	
Physiological process	637 (76.9)
Pathological process	52 (6.3)
Curse from god	80 (9.7)
Don’t know	59 (7.1)
Cause of menstruation	
Hormones	519 (62.7)
Curse of god	228 (27.5)
Caused by disease	22 (2.7)
Don’t know	59 (7.1)
Source of menstrual blood	
Uterus	504 (60.9)
Vagina	226 (27.3)
Bladder	17 (2.1)
Abdomen	33 (4.0)
Don’t know	43 (5.2)
Heard about menstruation before attaining menarche	
Yes	657 (79.3)
No	171 (20.7)
Knew about menstrual hygiene	
Yes	622 (75.1)
No	206 (24.9)
Knew that there is foul smelling during menstruation	
Yes	527 (63.6)
No	301 (36.4)
Knew that menstrual blood is unhygienic	
Yes	473 (57.1)
No	355 (42.9)
Knowledge (summary index)	
Good knowledge	504 (60.9)
Poor knowledge	324 (39.1)

Girls whose mother’s education status secondary school and above were 1.51 times more likely had good knowledge about menstruation and menstrual hygiene than their counterparts [AOR = 1.51, 95% CI: 1.03–2.22]. Girls from families with radio and/or TV were more likely to have good knowledge about menstruation and men-strual hygiene when compared to those who had no radio/ TV [AOR = 2.42, 95% CI: 1.64 – 3.56] (Table 3).

Hygienic practices during menstruation

As to the data obtained, out of the total respondents, 330 (39.9%) of the respondents had good practice on menstrual hygiene. Majority 678 (82.2%) of girls were using absorbent material during menstruation and two third 548 (66.2%) of girls were using commercial made sanitary pads as absorbent material during menstruation. Out of one hundred

fifty seven girls who were using clothes eighty three (52.9%) of the respondents were washing clothes with soap and water. Seventy one (45.2%) of the respondents dried their washed clothes in sunlight. Half 430 (51.9%) of girls change their pads or clothes three and above times per day. One hundred sixty seven (20.2%) of the respondents were disposing their used sanitary pads in dustbin.

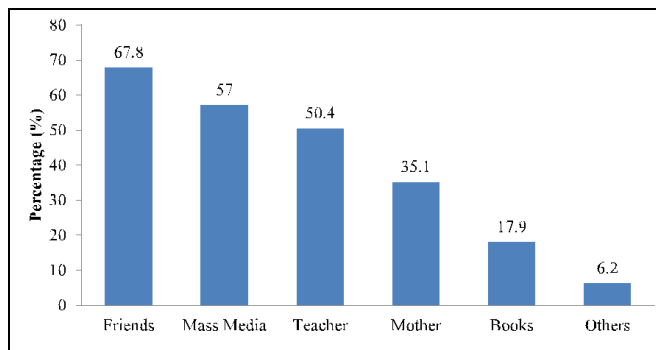


Fig 1: Respondents' sources of information about menstruation in Nekemte Town, Oromia region, Western Ethiopia, 2014

One third 274 (33.3%) of girls use paper to dispose the pads by wrap-ping. Two third 557 (67.3%) of respondents were taking bath daily with soap during menstruation. Six hundred fifty seven (83.5%) of the girls clean their external

geni-talia during menstruation with soap and water (Table 4).

Girls whose mother's educational status was secondary school and above were 2 times more likely to have goodpractice of menstrual hygiene than their counterparts [AOR = 2.03, 95% CI: 1.38–2.97]. Respondents whose mother's occupations come under category of others were less likely to have good practice of menstrual hy-giene than housewives [AOR = 0.66, 95% CI: 0.47–0.91]. Girls who earn permanent pocket money from their families were nearly three times more likely to have good practice about menstrual hygiene compared to those who don't earn permanent pocket money from their families [AOR = 2.73, 95% CI: 1.76 – 4.26] (Table 5).

Discussion

In this investigation, the greater part (60.9%) of the understudies had great learning about monthly cycle and menstrual cleanliness. The dominant part (76.9%) young lady realized that menstruation was a physiological procedure, though 9.7% them trusted that it was a revile from God. The discoveries were higher than those in past examinations done in Ethiopia, gotten in an investigation done in Amhara, northern Ethiopia, which was 90.7% [17], conceivably because of data gave about monthly cycle and menstrual cleanliness by schools and families.

Table 3: Predictors of knowledge about menstruation and menstrual hygiene among high school girls' of Nekemte town, Oromia region, Western Ethiopia, 2014

Characteristics	Knowledge		Crude OR OR (CI)	Adjusted OR OR (CI)	
	Good (%)	Poor (%)			
Educational status of the mothers					
Below and Primary	361 (57.5%)	267 (42.5%)	1	1	
Secondary and above	138 (70.8%)	57 (29.2%)	1.79 (1.27–2.53)	1.51	(1.02–2.22)*
Educational status of the father					
Below and Primary	271 (57.8%)	198 (42.2%)	1	1	
Secondary and above	233 (66.4%)	118 (33.6%)	1.44 (1.08–1.92)	1.07	(0.76–1.50)
Occupation status of father's					
Government Employed	189 (68.0%)	89 (32.0%)	1.55 (1.14–2.10)	1.19	(0.84–1.68)
Others	315 (57.8%)	230 (42.2%)	1	1	
Have Radio/TV					
Yes	449 (65.0%)	242 (35.0%)	2.77 (1.90–4.03)	2.42	(1.64–3.56)*
No	55 (40.1%)	82 (59.9%)	1	1	

Key = *statistically significant (P-value <0.05); 1 = Reference category

Table 4: Respondents menstrual hygienic practices during menstruation in Nekemte Town, Oromia Region, Western Ethiopia, 2014

Parameters of practice	Number (%)	
Uses absorbent materials during menstruation	678	(82.2)
Uses commercially made sanitary pad as absorbent material during menstruation	548	(66.2)
Clean clothes with soap and water	83	(52.9)
Dry cloths in sunlight	71	(45.2)
Changing pads or cloths more than three times and above during menstruation	430	(51.9)
Disposes used sanitary pads in dustbin	167	(20.2)
Uses paper to dispose the pads by wrapping	274	(33.3)
Takes bath daily with soap during menstruation	557	(67.3)
Clean external genitalia during menstruation	787	(95)
Cleans external genitalia with water and soap during menstruation	657	(83.5)
Practice (summary index)		
Good practice	330	(39.9)
Poor practice	498	(60.1)

Just about 68% of the respondents got data about period from their companions (67.8%), trailed by broad communications (57%); educators, moms, and books were the principle wellsprings of menstrual data in this investigation. These discoveries are steady with the outcomes from concentrates done in Egypt and India [18, 19]. A conceivable clarification for this closeness might be that young ladies examine feminine cycle and its cleanliness with their companions and friends straightforwardly. In this examination, multivariable investigation demonstrated that young ladies whose moms' instructive status was auxiliary school or more were 1.51 occasions bound to had great information about monthly cycle and menstrual cleanliness than their partners. A comparative report done in western Nigeria demonstrated that parental instruction was emphatically connected with young ladies' menstrual learning [20]. This investigation can't help contradicting results acquired from an examination in Sokot,

Nigeria [21]. The reason could be that informed moms may give data about period and menstrual cleanliness to their little girls. Young ladies from taught families may talk about transparently about sexual and conceptive medical problems including period. The broad communications assume a noticeable job in the dissemination of conceptive wellbeing data including monthly cycle and menstrual cleanliness [7, 18, 22]. The learning dimension of menstrual cleanliness has all the earmarks of being in-wrinkling with an expansion in time spent on sitting in front of the TV/tuning in to radio [23]. In this way the finding of this examination demonstrated that the accessibility of broad communications (Radio/TV) at home as the most astounding indicator of good learning of menstrual cleanliness. Actually, the reason may be broad communications might be supported with the impact of innovation on expanding learning and increasing required data about menstrual cleanliness.

Table 5: Predictors of practice about menstruation and menstrual hygiene among high school girls' of Nekemte town, Oromia region, Western Ethiopia, 2014

Characteristics	Practice		Crude OR		Adjusted OR	
	Good (%)	Poor (%)	OR (CI)		OR (CI)	
Educational status of the mothers						
Below and Primary	224 (35.7%)	404 (64.3%)	1		1	
Secondary and above	102 (52.3%)	93 (47.7%)	1.98	(1.43–2.74)	2.03	(1.38–2.97)*
Educational status of the father						
Below and Primary	166 (35.4%)	303 (64.6%)	1		1	
Secondary and above	164 (46.7%)	187 (53.3%)	1.60	(1.21– 2.12)	1.26	(0.90–1.78)
Occupational status of the mother						
House wife	127 (47.2%)	142 (52.8%)	1			
Others	201 (36.7%)	347 (63.3%)	0.65	(0.48–0.87)	0.66	(0.47– 0.91)*
Monthly income						
<800	67 (31.2%)	148 (68.8%)	1		1	
800–1000	129 (42.2%)	177 (57.8%)	1.61	(1.12–2.32)	1.46	(0.99 – 2.15)
1001–2000	52 (44.1%)	66 (55.9%)	1.74	(1.09–2.77)	1.20	(0.73 – 1.99)
>2000	68 (40.2%)	101(59.8%)	0.65	(1.49–2.27)	1.24	(0.80 – 1.93)
Earn permanent pocket money from parents or relatives						
Yes	66 (60.6%)	43 (39.4%)	2.65	(1.76–4.00)	2.73	(1.76–4.26)*
No	264 (36.7%)	455 (63.3%)	1		1	

Key = *statistically significant (p-value <0.05), 1 = Reference category

In this examination, three hundred thirty (39.9%) of the respondents had great routine with regards to menstrual cleanliness. The finding of this examination was lower than studies led in Ethiopia and North western Nigeria which were 90.9% and 88.7%, separately [15, 17]. Relatively, lower dimension of routine with regards to menstrual cleanliness was recorded from comparable examination led on Gujjar young ladies it was shown that just 3.1% of the investigation members practice great menstrual cleanliness [24]. Thus, the purpose behind the watched distinction could be because of low mindfulness and correspondence of menstrual cleanliness by Gujjar young ladies which influences their menstrual sterile practice. Instructive status of the guardians was imperative indicators of menstrual clean practice [20]. In the present examination young ladies whose moms' instructive statuses was optional or more were multiple times bound to have great routine with regards to menstrual hygiene than their partners. This lines up with the examinations done in Ethiopia, Lebanon, India and Nigeria [14, 21, 25, 26]. The conceivable clarification may be that informed moms may have mindfulness on practice of menstrual cleanliness and they may have given materials to their little girls to clean their genitalia amid

feminine cycle. This investigation showed that respondents whose moms' occupation others were more averse to have great routine with regards to menstrual cleanliness contrasted with those of housewives. Conversely, an investigation done in Nigeria demonstrated that work of moms indicated noteworthy factual relationship concerning the act of good menstrual cleanliness [21]. The contrastence may be because of that greater part of control of the respondent moms in Nigeria were specialists and government workers. Those moms who have work outside home may have introduction and access to data that can expand learning and mindfulness of conceptive issues including period and menstrual sterile practice. In this investigation young ladies who gain perpetual pocket cash from their families were almost multiple times bound to have great practice about menstrual cleanliness compared to the individuals who don't win lasting pocket cash from their families. Concentrates done in Ethiopia and South India were predictable with our investigation [14, 27]. This could be because of young ladies who get cash from their folks can without much of a stretch purchase clean napkins

for their menstrual cleanliness.

The restriction of this examination was the cross-sectional nature of the information that could the causal impact connections of various elements and it needs subjective information. Essentially, the investigation tended to the delicate issue about menstrual cleanliness and the likelihood of social attractive quality predisposition is unavoidable regardless of whether we have attempted our best to limit it.

Conclusions and recommendations

Half of the participants had good knowledge of menstruation and menstrual hygiene. The practice of menstrual hygiene was low (39.9%). Indeed, the findings showed a significant positive association between good knowledge of menstruation and educational status of the mother, having radio/TV. The educational status of the mother and the earning of permanent pocket money from families or relatives revealed significant positive association with good practice of menstrual hygiene. Awareness regarding the need for information about good menstrual practices is very important. Mass media should also emphasize on health information about menstrual hygiene. Therefore, policy makers and stakeholders should setup health education program to create awareness and practice of good menstrual hygiene (Additional file 1).

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