MENSTRUAL HYGIENE AMONG ADOLESCENT SCHOOL GIRLS OF BHAKTAPUR, NEPAL

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ABSTRACT

Adolescence is a transition phase from childhood to womanhood and is marked by onset of menstruation. But, it is still viewed as a religiously impure occurrence in Nepalese society due to social stigma and taboo attached to it. Menstruating females are susceptible to infections and thus, are required to maintain additional hygiene and sanitation. This study tried to explore the existing knowledge and practices on menstrual hygiene among adolescents in Bhaktapur, Nepal.The study included 168 adolescent girls studying in grade nine and ten from four different schools of Bhaktapur Municipality. A self-administered questionnaire developed in local language was used for data collection. These data were entered and analyzed using SPSS-17. Menstruation was considered as a natural physiological phenomenon by 94.6% of the adolescent school girls. Most (93.5%) of the girls used commercially available sanitary pads. The primary source of information on menstruation was their mother however, 35.1% of them reported that they had no prior knowledge on menarche. The major reasons for school absenteeism were discomfort, lack of continuous water supply and shame or fear of staining. Correct knowledge and practice score was not associated with paternal or maternal education while it was negatively correlated with age of adolescents. This study highlights the need to strengthen existing menstruation hygiene management programs in Bhaktapur, Nepal. Emphasis should be laid on providing information to girls who have not experienced menarche and also reinforce it among those who are becoming mature.

KEYWORDS

Adolescents, hygiene, menstruation, Nepal

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INTRODUCTION

Adolescence is a period when an individual is between 10-19 years of age group.[1] This is the age when menarche, the onset of menstruation, occurs. It is also considered as a transition period of any female from their childhood to womanhood.[2] Periodic menstruation is also one of the indicators of healthy reproductive health condition of a woman. It is a distinctive stage in a woman's life which requires additional self-care and attention on hygiene.[3] Inadequate / poor menstrual hygiene could jeopardize health and wellbeing of an individual. Failure to maintain appropriate hygiene may cause several reproductive tract infections.[4]

However, menstruation is viewed as a religiously impure and culturally shameful occurrence in Nepal.[5] Socio-cultural taboos and traditional beliefs consider it as an inappropriate topic of discussion, leading to lack of correct and recent information on menstrual hygiene.[6] As a consequence, women end-up harboring micro-organisms that increases susceptibility to urinary, perineal, vaginal and pelvic infections.[7] If these infections are left untreated, it may lead to several consequences including infertility, ectopic pregnancy, fetal wastage and prenatal infection, low birth weight babies and toxic shock syndrome.[8]

Adolescent menstrual hygiene management is a critical issue which affects health status of adolescents and also influences hygiene practices that are eventually inculcated into adult life.[9] This study, thus, aimed to explore the existing knowledge and practices related to menstrual hygiene among school attending adolescents in Nepal.

MATERIALS AND METHODS

It is a descriptive study which was carried out among adolescent girls from four secondary boarding schools of Bhaktapur metropolitan city. Simple random sampling was used to select these four schools and all the girls of grade 9 and 10 were invited to become a part of the study. This survey was carried out from March to May 2018 with the help of a self-administered questionnaire. The face and construct validity of the questionnaire was checked and translation into local language was done using standard translation guidelines. A knowledge and Practice Score (KPS) was calculated using the correct responses to 6 items of the questionnaire namely menstruation being a monthly phenomenon, a natural process, vagina as source of bleeding, taking bath daily, changing absorbent material more than two times daily and washing hands with soap after changing pads.

On the basis of the reference article by Parajuli *et al*[10], the prevalence of correct knowledge regarding menstruation in among adolescent girls in Nepal is 83.3%. Taking, relative precision at 10% and level of significance at 5%, the calculated sample size was 79. Using the design effect of 2, the sample size became 79X2= 158. Further amplification by 10% was done to accommodate for non-response errors. Thus, the final estimated sample size was 175.The data was entered, coded and analyzed using Statistical Package for Social Sciences (SPSS) version 17.0, SPSS Inc. Chicago, IL, USA. The data were converted into frequencies, proportions, mean, sd, etc and displayed with the help of frequency distribution table. The association between KPS and parental education was tested with the help of independent t test. The correlation between age and KPS was seen with the help of Pearson's correlation coefficient.

The ethical approval for the study was obtained from research division of Asian College for Advance Studies. Approval from the respective school authorities was also taken in advance. Informed

Table 1: Personal details of the study respondents (n = 168)

Personal details	Categories	Count	Percent
Class	Class 9	70	41.7%
	Class 10	98	58.3%
Religion	Hindu	159	94.6%
	Buddhist	07	4.2%
	Christian	1	0.6%
	Kirat	1	0.6%
Father's education	Illiterate	05	03.0%
	Literate (n = 163)	163	97.0%
	Primary	05	3.06%
	Less than 10	22	13.5%
	Completed 10	38	23.3%
	+2	52	31.9%
	Bachelor	39	23.9%
	Master	07	4.3%
Mother's education	Illiterate	15	8.9%
	Literate (n = 153)	153	91.1%
	Primary	07	4.6%
	Less than 10	31	19.0%
	Completed 10	52	31.9%
	+2	41	25.1%
	Bachelor	18	11.0%
	Master	04	2.5%
Father's occupation	Daily wages	06	3.6%
	Teacher	07	4.2%
	Business	75	44.6%
	Farmer	10	6.0%
	Doctor	02	1.2%
	Other services	68	40.5%
Mother's occupation	Housewife	94	56.0%
	Daily wages	10	6.0%
	Teacher	05	3.0%
	Business	11	6.5%
	Farmer	08	4.8%
	Other services	40	23.8%
Age of the students	(mean ± sd) = 14.23 ± 0.87 years; Min - Max = 12 - 17 years		

consent was obtained from each study participant. To maintain confidentiality, names of the study participants were not obtained in the questionnaire.

RESULTS

Out of the 175 girls, 168 agreed to become a part of the study which led to a response rate of 96.0%. Majority of the adolescent girls were of Class 10 and their mean age was 14.23 years. Mothers (91.1%) and fathers (97.0%) of the adolescent were mostly literate. Business was the most common (44.6%) occupation for fathers while majority (56.0%) of the mothers were home makers (Table 1).

Most (97.6%) of the adolescent girls had heard about menstruation but more than one thirds (35.1%) did not have knowledge regarding it before menarche. Further, more than one fourth (26.2%) were not comfortable talking about menstruation (Table 2).

Table 2: Knowledge of adolescent girls regarding menstruation (n = 168)

S. No.	Statement	Yes (n, %)	No (n,%)
1.	Heard about menstruation	164 (97.6%)	04 (02.4%)
2.	Knowledge of menstruation before menarche	109 (64.9%)	59 (35.1%)
3.	Feel comfortable to talk about menstruation	124 (73.8%)	44 (26.2%)
4.	Knew normal menstrual bleeding duration	100 (59.5%)	68 (40.5%)
5.	Aware that a girl can go to school during menstruation	144 (85.7%)	24 (14.3%)

Table 3: Understanding of the term menstruation by the adolescent girls (n =168)

S. No.	Statement	Yes (n, %)	No (n,%)
1.	Menstruation is a monthly bleeding phenomenon	159 (94.6%)	09 (5.4%)
2.	Menstruation is dirty bleeding	151 (89.9%)	17 (10.1%)
3.	Is a natural process that happens with every female	162 (96.4%)	06 (3.6%)
4.	Menstruation is good for marriage	92 (54.8%)	76 (45.2%)
5.	Sign of adulthood	134 (79.8%)	34 (20.2%)
6.	Removal of dirt from stomach	111 (66.1%)	57 (33.9%)
7.	Menstruation is some form of disease	11 (6.5%)	157 (93.5%)

Most (96.4%) of the school girls agreed that menstruation is a natural process however, a large (89.9%) proportion also believed that it is dirty bleeding. More than two thirds (79.8%) agreed that menstruation is a sign of adulthood while, there was also a small percent (6.5%) which thought it is some form of disease (Table 3).

Table 4: Source of bleeding and source of knowledge regarding menstruation (n = 168)

Questions		Count, Percent(n, %)
Source of bleeding uterus	Any part of the abdomen	07 (4.2%)
	Stomach	05 (3.0%)
	Vagina	83 (49.4%)
	Urinary tract	66 (39.3%)
	Somewhere from the body	07 (4.2%)
Source of knowledge of menstruation before menarche	Mother	140 (83.3%)
	Elder sister	07 (4.2%)
	Course book	17 (10.1%)
	Friend	01 (0.6%)
	Teacher	03 (1.8%)

Less than fifty percent of adolescent school girls knew that source of bleeding during menses is vagina. More than one thirds (39.3%) believed it is from urinary tract while some (4.2%) believed it was somewhere from the body. Majority (83.3%) of the study respondents were provided knowledge regarding menstruation from their mother and some (10.1%) also got information from their course book (Table 4).

More than ninety percent (93.5%) of the study participants used commercially available sanitary pads during menstruation and discarded (95.2%) used materials after every use. However, around 5 percent of the girls who used homemade cloth, washed and dried it. Out of them, 50 % of girls dried the clothes in hiding. More than one thirds (48.8%) of the adolescent school girls did not take bath daily and more than a quarter (26.8%), actually took bath after the menses were over. About one fifth (16.7%) of them missed at least one day of school during menstruation (Table 5).

The major reason for school absenteeism was pain/discomfort. Along with it, the girls also missed school due to fear of leakage or staining (37.5%), lack of continuous water supply (18.5%), lack of private space in the school (8.9%), lack of separate bathroom for girls (7.1%) and non-availability of pads at school (4.8%) (Table 6).

Table 5: Practice during menstruation among adolescent school girls (n = 168)

Practice variables		Count, Percent (n , %)
Material used as a pad	Sanitary pads (commercial)	157 (93.5%)
	Homemade cloth	11 (6.5%)
Handling of used materials	Do not discard	08 (4.8%)
	Discard after every use	160 (95.2%)
If do not discard, what is done (n=8)	Wash and discard	01 (12.5%)
	Wash and dry	07 (87.5%)
Location for drying clothes used for pads (n =8)	In sunlight	04 (50.0%)
	In hiding	04 (50.0%)
Storage of washed clothes (n=8)	Clean and covered place	05 (62.5%)
	Unclean and covered place	0 (0.0%)
	Clean and open space	03 (37.5%)
Use of genital cleaning material	Soap and water	87 (51.8%)
	Water only	81 (48.2%)
Frequency of bath during period	Daily	86 (51.2%)
	First day	12 (7.1%)
	Second day	07 (4.2%)
	Third day	18 (10.7%)
	When period is over	45 (26.8%)
Frequency of change of absorbent material	Once everyday	18 (10.7%)
	Twice everyday	90 (53.6%)
	More than twice everyday	60 (35.7%)
Washing hands with soap after changing pads	Yes	166 (98.8%)
	No	02 (1.2%)
Days of school missed during menstruation	Less than a day	140 (83.3%)
	One day	23 (13.7%)
	Two days	03 (1.8%)
	More than two days	02 (1.2%)

The knowledge and Attitude Score (KAS) was calculated from 6 items in the questionnaire. The minimum score was 2 while the highest was 5 with mean score of 3.81 (Table 7).

Table 6: Reasons of school absenteeism during menstruation (Multiple responses) (n = 168)

S. No.	Reasons	(Count, Percent)
1	Non availability of pads at school	08 (4.8%)
2	No private place to manage period at school	15 (8.9%)
3	Lack of continuous water supply	31 (18.5%)
4	Pain/discomfort	140 (83.3%)
5	Lack of separate bathroom for girls	12 (7.1%)
6	Shame/fear of leakage/ staining	63 (37.5%)

Table 7: Knowledge and practice score of school girls about menstruation (n =168)

Knowledge Score	Frequency	Percent
Score 2	08	4. 7%
Score 3	50	29. 6%
Score 4	76	45. 6%
Score 5	35	20.1%
Mean ± sd = 3.81 ± 0.811;	Min. - Max. = 2 - 5	

Table 9: Correlation of age of students and KPS regarding menstruation

Correlation between age and score	Correlation coefficient (r)	Coefficient of determination (R2)	P value
	- 0.167	0.027	0.030*

* statistically significant

The mean KAS was higher among school girls whose fathers had received education more than high school. Contrastingly, the opposite was seen in case of maternal education. However, the results failed to reach statistical significance implying that correct knowledge and attitude regarding menstruation was not associated with paternal or maternal education (Table 8).

We also found significant negative correlation between age and KPS with p value of 0.030 (Table 9).

DISCUSSION

Menstruation is a hallmark of pubertal development.[3] However, in this study only two-third (64.9%) of the respondents were found having knowledge on menstruation before menarche which is similar to study findings from India and Western Ethiopia.[3] In the present study, 79.8% of the adolescent schoolgirls considered menstruation as a sign of adulthood. Furthermore, 94.6% of them believed menstruation as a periodic physiological process. This finding was

Table 8: Association of parental education with KPS regarding menstruation

Parental	Education Level	Knowledge score (mean ± sd)	Mean diff.	95% confidence interval		P value
				Lower	Upper	
Paternal Education	Illiterate and high school	3.76 ± 0.82	- 0.09	- 0.341	0 .161	0.481
	More than high school	3.85 ± 0.80				
Maternal Education	Illiterate and high school	3.84 ± 0.76	0.076	- 0.191	0 .343	0.573
	More than high school	3.76 ± 0.89				

relatively higher compared to findings from India[3] (86.2%) and remote region of Nepal[11] (83.0%). The main source of information on menstruation in our study was their mother (83%) which is similar to study done in Kano,[12] but contrary to findings from Egypt[13] that revealed mass media as the main source of information. Open discussion on menstruation and menstrual practices in Nepalese society are clouded by religious beliefs, social stigma and cultural restrictions.[5] It was even reflected in our study findings as around one-fourth (26.2%) of the schoolgirls were found not comfortable discussing on menstruation issues. In this study, majority (93.5%) of the adolescent school girls were found using commercially available sanitary pad during their menstruation. This finding is in contrast to studies conducted in Doti, a rural district of Nepal (30%),[11] India (11.25%)[14] and Nigeria[15] where the majority was found to be using cloths and toilet rolls to manage menstrual blood. Wide use of ready-made sanitary pad by our study participants may be because of it being relatively more comfortable, affordable and readily available in the local market. Menstruating women are susceptible to infections and thus, need to maintain additional hygiene and sanitation.[3,4] However, in the current study, about half of the girls were found not taking bath every day while only one-fourth (26.8%) of them bath only after the period is over. It was found that more than fifty percent of the schoolgirls used soap and water to clean their genital which is similar to the finding from study done among adolescent girls in rural Puducherry (54.4%).[16] The study revealed that less than a day is missed by majority (83.3%) of the school girls mostly due to associated pain and discomfort followed by fear of leakage and staining (37.5%). These findings are consistent with the results from a study carried out in rural Malawi.[17]In this study, correct knowledge and practice among adolescents regarding menstruation was not associated with paternal or maternal education which is in contrast with finding of study conducted in Western Ethiopia[18] where girls whose mothers' educational status was secondary school and above were 1.51 times more likely to had good knowledge about menstruation and menstrual hygiene than their counterparts. Interestingly, in our study, knowledge on menstruation among adolescents was found decreasing with increasing age ($p<0.05$). A possible explanation for this finding could be that as the adolescent girls grow older, their curiosity diminishes and they might perceive menstruation as a regular phenomenon. Also, awareness through social media is on rise in recent years. There are certain limitations in the study. We could include only private school students for the study due to limitation of time and resources. Thus, the information is limited. Hence, further studies including adolescents in both private and public schools and also who are not in school are required to make the study findings complete.

Menstruation is considered as a natural physiological phenomenon by most of the adolescent school girls in Bhaktapur, Nepal. Most of them preferred commercially available sanitary pads. Parental education was not associated with menstrual hygiene knowledge and practice. Age was negatively correlated with menstrual hygiene knowledge and practice. Thus, there is a need to strengthen our existing menstruation hygiene management programs. Emphasis should be laid on providing information to girls who have not experienced menarche and also reinforce it among those who are becoming mature.

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