

RESEARCH ARTICLE



Knowledge and practice of menstrual hygiene among adolescent girls in secondary schools of Herat, Afghanistan

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ABSTRACT

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Background: The experience of menarche is often confusing and causes ambivalence among adolescent girls due to their lack of information on the menstruation cycle and menstrual vaginal bleeding. This study aimed to assess the knowledge and practice of menstruation and menstruation hygiene in Afghanistan.

Methods: This is a cross-sectional study using a survey questionnaire administered from 10 March 2021 to 15 April 2021 among secondary school girls in Herat, Afghanistan. It evaluated their knowledge of menstruation and menstrual hygiene practices. 768 girls responded to the survey. Data was encoded and statistically analysed using SPSS.

Results: 53.3% of girls surveyed had a good knowledge of menstruation and menstrual hygiene. 15.9% of girls surveyed who did not experience menarche showed a good knowledge score. In terms of practice, 32.9% took a rest and missed school during menstrual bleeding. 2.1% of the participants mentioned that teachers were the first source of information on menstruation and menstrual hygiene. **Conclusion:** Knowledge of menstruation and menstrual hygiene among girls surveyed was lower than in other countries. Awareness campaigns regarding menstruation and menstrual hygiene are recommended. It is suggested to add a subject on these for secondary school girls to learn more and encourage them to openly discuss among themselves.



Introduction

With almost 1.2 billion people aged between 10 to 19 years old, adolescents form a large segment of the population across the world which is equivalent to 16% of the world's population (1). During adolescence,

hormonal activities initiated by the hypothalamus in the brain cause psychosocial changes and stimulate pubertal changes in girls and boys (2-3). This is why in females, adolescence marks the onset of the

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menstruation cycle, menarche (4). The menstruation cycle is considered unclean, dirty, shameful, and embarrassing in developing countries. This belief causes adolescent girls worldwide to become a vulnerable group, particularly in Afghanistan, where a female child is most times a neglected child (5-7). Most developing countries have a lackadaisical attitude to menstrual hygiene management, which has a significant impact on the girl child (8). The experience of menarche is often confusing and causes ambivalence for adolescent girls due to inadequate access to correct information on menstruation and menstruation hygiene management (9). A study in India reveals that less than half (45.7%) of the girls were aware of menstruation before menarche (10).

Menstrual Hygiene Management refers to the use of clean menstrual management materials by women and adolescent girls to absorb or collect menstrual blood, that which can be changed in privacy as frequently as necessary for the duration of a menstrual period, the availability and use of soap and water for washing the body, as well as the access to safe and convenient facilities to dispose of used menstrual materials (11). Inadequacy in any of these negatively impacts the health, education, and emotional well-being of girls and the nation's economy (11). Poverty and low education on reproductive health are two significant factors that affect the girls' knowledge and practice of menstruation and menstrual hygiene and their preparedness before experiencing menarche (12). This lack of knowledge on good menstrual hygiene practices further puts girls at risk of developing infections (13). Poor access to water, sanitation, and hygiene (WASH) facilities, in addition, leads to school absenteeism among school girls of menstruating age in low and middle-income countries such as Afghanistan (14). For example, a study conducted in Nigeria reported that 17.89% of girls missed school during menstruation (15), while in Indonesia, one in ten girls are likely to miss school during menstruation (14).

One of the ways Afghanistan can achieve the sustainable development goals (SDG) 3 – Good health and well-being, which aims to ensure healthy lives and well-being for all at all ages, SDG 4 – Quality education focused on ensuring inclusive and equitable quality education and promote lifelong learning opportunities

for all, SDG 5 – Gender equality geared towards promoting gender equality and to empower all women and girls, and SDG 6 – Clean water and sanitation with a vision of ensuring the availability and sustainable management of water and sanitation for all, is to improve the girls' awareness on menstruation, menstrual hygiene management and attainment of menstrual equity (11, 16).

This study aimed to assess the knowledge and practice about menstruation and menstruation hygiene among secondary school girls in Herat, Afghanistan.

Materials and methods

This cross-sectional study was conducted from 10th March, 2021 to 15th April, 2021 among secondary school girls in Herat, Afghanistan. Participants in this study were students of seventh to ninth classes. In total, 768 secondary school girls participated in this research. The questionnaire used for this study was developed based on a review of relevant literature in this research area. The questionnaire was designed and prepared in the Dari language. After conducting a pilot study among 30 school girls to check the reliability and validity, remove ambiguity, and improve the sequencing of questions, minor changes in the format and design of the choices for questions were applied.

The final questionnaire consisted of three parts: The socio-demographic part which was designed to collect the participants' age, class, mother's educational level, father's educational level, mother's occupation, father's occupation, age at the time of menarche, and the first source of information on menstruation and menstruation hygiene. The second part consisted of seven questions to evaluate the participants' knowledge of menstruation and menstrual hygiene. Each question was scored 1 for the correct answer (a total of 7 scores). Those with 4 scores or higher were considered to have a good knowledge level as it is the median score of the whole participants. The third section consisted of six questions to represent the participants' practice or attitude towards their menstruation and menstruation hygiene.

The recorded data was entered into the IBM SPSS version 24.0 and the statistical analysis was done

using this software. The simple random sampling method was used to determine the participants. A total of 768 participants studying in seventh to ninth class in different schools of Herat city participated in this study and filled the questionnaire. Variables of each part were presented in category form with their frequency in number and percentage.

Compute variable was used to calculate the total knowledge score of the participants. Cross tabulation was applied to evaluate the association between the participant's level of knowledge of menstruation and menstrual hygiene with their parents' educational level. A significant P-value was considered as less than or equal to 0.05.

Ethical approval was obtained from the AMSA Medical Research Center Ethical Committee on 7th, March 2021. Permission was secured from Herat Education Department or schools through a formal letter and orally. They were briefed on the relevance and objectives of the study. The purpose of the study was explained to each participant. Confidentiality of information was maintained by omitting any personal identifier from the questionnaire. Students were informed of their full right to continue or ignore any question or even withdraw from their participation at any stage.

Results

Socio-demographic characteristics of participants

The socio-demographic characteristics of the participants are presented in Table 1, where 769 participants were included in this research. The majority of the participants were in the eighth class (42.2%), followed by the ninth class (37.4%), the least represented class being the seventh class (22.4%).

More than half of the respondent's mothers were illiterate (52.2%), and only 11.2% of the participants' mothers graduated high school. There was a preponderance of the respondents' fathers (17.2%) who were high school graduates, and only 24.9% of their fathers had graduated from university. The majority of the participants' mothers (81.4%) were busy with house jobs while 16.1% of the participants' fathers were unoccupied. 22.9% of the participants

have not experienced menarche. Most of the participants experienced their menarche at age thirteen (29.7%), at age fourteen (8.1%), and at nine years old (0.3%). 22.9% of the participants had not experienced menarche.

Table 1: *Characteristics of participants*

Characteristic	Category	N (%)
Age group	11 – 14 years' old	466 (60.7)
	15 – 18 years' old	302 (39.3)
Class	Seven	172 (22.4)
	Eight	309 (40.2)
	Nine	287 (37.4)
Mother's educational level	Illiterate	401 (52.2)
	Primary school	84 (10.9)
	Secondary school	106 (13.8)
	High school	86 (11.2)
	University	91 (11.8)
Father's educational level	Illiterate	210 (27.3)
	Primary school	100 (13.0)
	Secondary school	135 (17.6)
	High school	132 (17.2)
Mother's occupation	University	191 (24.9)
	Permanent	103 (13.4)
	Contract	10 (1.3)
	House wife	27 (81.4)
	Retired	3 (.4)
Father's occupation	Other	23 (3.5)
	Permanent	213 (27.7)
	Owner	65 (8.5)
	Contract	209 (27.2)
	Unoccupied	124 (16.2)
	Retired	8 (1.0)
First mentor ahead of experiencing menarche	Other	149 (19.4)
	Did not have	144 (18.8)
	Mother	434 (56.5)
	Sister	154 (20.1)
	Friends	12 (1.6)
Age at the time of menarche	Relatives	8 (1.0)
	Teacher	16 (2.1)
	Did not experience	176 (22.9)
	Nine	2 (.3)
	Ten	24 (3.1)
	Eleven	61 (7.9)
	Twelve	215 (28.0)
	Thirteen	228 (29.7)
	Fourteen	62 (8.1)

Knowledge of participants on menstruation

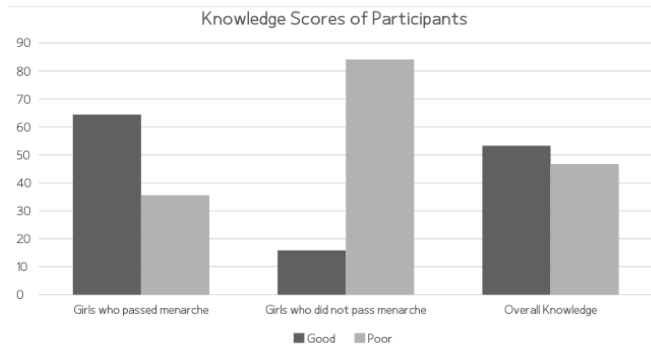
The participant's knowledge of the menstrual cycle and menstrual hygiene is in Table 2. Of all the participants in this study, the majority (61.2%) answered that menstruation is a physiological process, 5.9% answered that menstruation is a pathological process, while 32.9% did not know. More than half of the respondents (64.8%) responded that the uterus is the source of menstrual blood, while 8.1% of the participants answered that the menstrual blood source is the stomach. Although 30.7% of the respondents do not know the conventional cycle length, 64.1%

responded 21-35 days. 22.9% do not know the normal cycle bleeding length, and 19.4% of the respondents answered that the menstruation cycle would continue forever. 39.2% of the respondents have never heard about menstruation before menarche. The first source of information about menarche for the majority of the respondents (56.5%) was their mother and sister (20.1%).

Table 2: Participants Knowledge on menstrual cycle

Variables	Category	N	(%)
What is menstruation	Physiological process	470	61.2
	Pathological process	45	5.9
	Don't know	253	32.9
Source of menstrual blood	Uterus	498	64.8
	Stomach	62	8.1
	Don't know	208	27.1
Normal cycle length	21-35 days	492	64.1
	More than 35 days	40	5.2
	Don't know	236	30.7
Normal cycle bleeding length	Less than 2 days	53	6.9
	2 – 7 days	421	54.8
	More than 7 days	118	15.4
	Don't know	176	22.9
Will the period continue forever	Yes	149	19.4
	No	462	60.2
	Don't know	157	20.4
Healthy diet during menstrual cycle exits	Yes	495	64.5
	No	141	18.4
	Don't know	132	17.2
Ever hear about menstruation before menarche	Yes	301	39.2
	No	467	60.8
Source of information	Mother	434	56.5
	Sister	154	20.1
	Friends	12	1.6
	Ancestors	8	1.0
	Teacher	16	2.1
	No one	144	18.8
Knowledge score (Girls who passed menarche)	Good	381	64.4
	Poor	211	35.6
Knowledge score (girls who did not pass menarche)	Good	28	15.9
	Poor	148	84.1
Overall Knowledge score	Good	409	53.3
	Poor	359	46.7

Figure 1: Knowledge scores of participants



Attitude and practice during menstruation

Participants' attitudes and practices during menstruation are in Table 3. The majority (36.7%) of the participants felt pain during their period. To relieve pain during their menstruation, about 9% and 12% used an OTC pain reliever and a heating pad, respectively. 10.4% exercise to alleviate the menstruation bleeding pain. Pad was the most preferred material to manage and absorb the menstrual discharge of the majority of the respondents (61.1%). Most of the participants (60%) preferred using the absorption materials of menstrual discharge for less than 4 hours. About two-fifth of the participants (39.5%) do not wash themselves during menstruation.

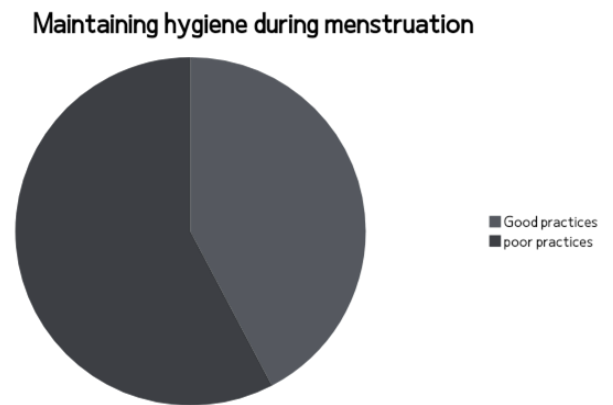
Table 3: Participants attitude and practice during menstruation

Variables	Category	N (%)
Feeling pain during period	Mostly	282 (36.7)
	Rarely	215 (27.0)
	Never	123 (16.0)
	No response	148 (19.3)
Things you do during menstrual bleeding to relief period pain and its effects	Exercise	80 (10.4)
	Use heating pad	94 (12.2)
	OTC pain reliever	69 (9.0)
	Rest	253 (32.9)
	Other	108 (14.1)
	No response	164 (21.4)
Materials use for absorption of menstrual discharge	Pads	469 (61.1)
	Cloths	66 (8.6)
	Both	82 (10.7)
	Other	7 (0.9)
	No response	144 (18.8)
Length of usage of absorption materials of menstrual discharge	< 4 hours	466 (60.7)
	4-6 hours	97 (12.6)
	> 12 hours	41 (5.3)
	No response	164 (21.4)

Table 3 (Continued)

Variables	Category	N (%)
Sanitize menstruation discharge absorption materials	Mostly	412 (53.6)
	Rarely	124 (16.1)
	Never	92 (12.0)
	No response	140 (18.2)
Do you wash yourself during menstrual bleeding	Yes	325 (42.3)
	No	303 (39.5)
	No response	140 (18.2)

Figure 2: Maintaining hygiene during menstruation



Association between participants' knowledge and selected socio-demographic variable

As shown in Table 4, there is no association between the mother's level of education and the participant's knowledge of menstruation (a p-value of 0.352). The majority of the participants whose mothers had college (58.2%) and secondary school (54.7%) education had good knowledge of menstruation. While for primary schooled mothers, the respondent's knowledge was poor (56%). The association between the father's level of education and the participant's knowledge of menstruation, as in Table 4 shows a high association with a P-value of 0.001. The majority of the participants (53.3%) with illiterate fathers had poor knowledge of menstruation and menstruation hygiene, while 63.4% of the respondents with a father who has a college level of education or higher had cognizance of menstruation and menstruation hygiene.

Table 4: Association of participants' knowledge of menstruation and their selected socio-demographic variables

Variable	Category	Knowledge		p-value
		Poor (%)	Good (%)	
Age group	11 – 14 years' old	252 (54.1)	214 (45.9)	.000*
	15 – 18 years' old	107 (35.4)	195 (64.6)	
Mother's educational level	Illiterate	183 (45.6)	218 (54.4)	.352
	Primary school	47 (56.0)	37 (44.0)	
	Secondary school	48 (45.3)	58 (54.7)	
	High school	43 (50.0)	43 (50.0)	
	University	38 (41.8)	53 (58.2)	
Father's educational level	Illiterate	112 (53.3)	98 (46.7)	.001*
	Primary school	49 (49.0)	51 (51.0)	
	Secondary school	75 (55.6)	60 (44.4)	
	High school	53 (40.2)	79 (59.8)	
Age at the time of menarche	Did not experience	148 (84.1)	28 (15.9)	.000*
	Nine	0 (.0)	2 (100.0)	
	Ten	4 (16.7)	20 (83.3)	
	Eleven	24 (39.3)	37 (60.7)	
	Twelve	80 (37.2)	135 (62.8)	
	Thirteen	75 (32.9)	153 (67.1)	
	Fourteen	28 (45.2)	34 (54.8)	

*Statistically significant

Discussion

Menstruation is a normal physiological process in females that is part of pubertal development. Adequate knowledge and good menstrual practice are required to prevent adverse reproductive health outcomes and poor academic performance in adolescent school girls (15, 17). In this cross-sectional study among secondary school girls in Herat city, only 39.2% of the participants heard about menstruation before menarche. In the general population, no one mentions the name of genital parts, although a part of the human body, it would be considered impoliteness. This practice reflects the socio-cultural beliefs and norms attributed to menstruation and the female reproductive organs. Dissimilarly, a study of secondary school girls in Nigeria showed that 96.4% of girls heard about menstruation before experiencing menarche (15). This difference might be due to the high educational level of the mothers and a close relationship between mother and children attributed to culture. In another related study in Western Ethiopia and Northeast Ethiopia, 79.3% and 86.7% of girls heard about menstruation before menarche, respectively (18-19). In comparison, most of the girls in this study have poor knowledge on menstruation when they experience menarche, thus making menarche a bad and fearful experience for them.

In general, 53.3% of the participants of this study had a good knowledge level of menstruation and menstruation hygiene, while 81.4% of the participants who did not experience menarche had poor knowledge of menstruation and menstruation hygiene. This study also shows that 35.6% of the girls who experienced menarche had poor knowledge of menstruation and menstruation hygiene, 38.8% of the participants did not know that menstruation is a physiological process of the female body, and 35.2% of them were unaware that the source of blood during the menstrual cycle is the uterus. The schoolgirls' knowledge of menstruation directly influences their attitude and practice during menstruation. In contrast, a study revealed that 51.4% of schoolgirls in Northeast Ethiopia had good knowledge scores on menstruation hygiene. Another study in Eastern Ethiopia shows that 58.3% of schoolgirls had good practice scores on menstruation and menstrual hygiene (19-20). Low level of knowledge from parents, regarding menstruation as shameful, and lack of enlightenment from teachers are the main reasons for the lower level of knowledge among girls. However, considering other countries' girls' knowledge scores on menstruation and menstruation hygiene, the knowledge score of the girls in this study who have not experienced menstruation is poor and highlights the gaps in menstrual health education in the region.

Almost one-third (32.9%) of the participants replayed that they take rest and may be absent from school during their menses. Compared to a study that reveals 20% of schoolgirls miss at least one day of their school during menstrual bleeding, our finding was similar to a study in India. The reason for this match could be sharing the same beliefs and myths about menstruation among the general population of Afghanistan and India (21-22). According to studies, school absenteeism during monthly periods is due to inadequate menstrual hygiene management facilities, including toilets, and misconceptions about menstruation leading to social restriction (11, 23-29).

Mothers' educational level association with girls' menstruation knowledge score was insignificant in this study. However, in families in which the father had a higher education level, the girls' knowledge score on menstruation was significant. Considering only 2.1% of the participants of this study's primary source of information was teachers, it can be one of the reasons why the association between mothers' educational level and girls' knowledge score on menstruation is not significant. This finding shows the inadequacy of awareness campaigns and the need for health education on menstruation in schools.

Also, 61.1% of girls use disposable pads during menstruation. This finding is significantly lower than 98.3% of use reported in Indonesia and 92.2% reported in Nigeria (14, 30). The difference could be because of lower socioeconomic status, poor parental knowledge of menstruation, and difficulty accessing disposable sanitary pads.

The finding of this study also shows that only 42.3% of girls wash themselves during menstruation while 60.7% of girls preferred to use absorption materials for less than four hours compared to a study in Indonesia in which 75.6% of girls changed their pads every 4-6 hours (31). Infrequent changing of sanitary pads and bathing are unhygienic practices that can negatively impact on girl's reproductive health and result in the development of reproductive tract infections such as bacterial vaginosis and vulvovaginal candidiasis (32).

Conclusion

Only half of the participants had good knowledge on menstruation and menstruation hygiene which reflects a huge gap in the global actions geared towards achieving menstrual equity. Our research findings show the association between good knowledge of menstruation and menstruation hygiene with their parent's educational level. Awareness campaigns/counseling sessions regarding menstruation and menstrual hygiene are recommended for schools and to be conducted with their parents. However, early inclusion of a subject on menstrual hygiene in the curriculum for secondary school girls would further strengthen their knowledge on menstruation, debunk popular stigma and encourage proper menstrual hygiene practices. It is also imperative for schools to provide efficient WASH facilities that ensures adequate level of privacy. In addition, the government should put in place enabling policies and implement frameworks for achieving menstrual equity, particularly subsidizing the cost of disposable sanitary pads to school girls who cannot afford the cost, and where possible, to make them free and easy to access.

Author contributions

All authors made substantial contribution to conception and design, data analysis and their interpretation, drafting the article and giving the finale approval of the version to be published, and agreed to be accountable for all aspects of work. Data collection and data entry was done by the HA and MA in Herat province of Afghanistan.

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Competing interests

None declared.

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