

Original research article

**MENSTRUAL HYGIENE MANAGEMENT-KNOWLEDGE,
ATTITUDE, PRACTICES AMONG ADOLESCENT AND
YOUNG ADULT GIRLS IN AN URBAN-BASED DEGREE
COLLEGE**

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Abstract

Background: Menstruation marks the beginning of the reproductive life of a girl. A poor menstrual understanding and its unhealthy practices may increase the risk of reproductive infections, urinary tract infections and even cancer.

Objectives: To study the knowledge and attitude towards menstruation among adolescent girls so that it can be then taken as a background for designing necessary interventions in the community.

Methods: This was a college-based descriptive cross-sectional study carried out on Google forms with self-administered pre-tested questionnaire.

Statistical Analysis: IBM SPSS 26th version was used to do statistical analysis and a p-value of less than 0.05 was considered as statistically significant.

Results: Good number of students (80%) had adequate knowledge about menstruation and 82% of the students were practicing menstrual hygiene properly.

Conclusion: Overall understanding of menstruation was good, and the MHM practices of our participants scored highly.

Improved public health knowledge, Psycho-social/medical support, and WASH infrastructure with freely available menstrual products could lead to more effective MHM practices among female college students.

Keywords: Knowledge, attitudes, practice, menstruation

Introduction

Menstruation is a cyclical shedding of the endometrium under the hormonal influence controlled by the hypothalamic pituitary ovarian axis ^[1]. It marks the beginning of reproductive life of a girl. Menstrual hygiene management (MHM) refers to the specific

hygiene and health requirements of girls and women during menstruation, such as the knowledge, information, materials, and facilities needed to manage menstruation effectively and privately [2]. Menstruation has been surrounded by misperceptions and taboos in society causing reluctance to talk about it [3, 4, 5]. Studies conducted in low- and middle-income countries such as Bhutan, India, Saudi Arabia and Iran found that girls received information on menstruation mainly from their mothers [6, 7, 8, 9, 10] who tended to focus on activities to be avoided due to traditional taboos [11, 12]. Taboos lead to socially imposed restrictions, such as exclusion from daily prayers, avoiding certain foods, performing fasting ceremonies, avoiding touching holy books or flowers, and even preventing them from entering a kitchen or a temple [4, 12, 13, 14, 15] as the blood of menstruation is considered “dirty” [8]. The failure to fully acknowledge the physical reality of women has a range of serious impacts alongside with experiences of shame [16]. The view in which girls perceive towards menstruation also affects their hygienic practice during their menstrual bleeding [17]. Learning about menstrual hygiene is an important part of health education in order to prevent various ill effects of poor menstrual hygiene practices, which may lead to reproductive tract infections, infertility, miscarriages, toxic shock syndrome and cancer [18]. Moreover, the lack of knowledge further impairs a girl’s daily activities, affects her attendance in college and thus leads to poor academic performance. The reproductive health decisions which they will make today will affect the health of the upcoming generations [19]. Studies have found a lack of safe and clean hygiene facilities, which leads to unsatisfactory opportunities to clean external genitalia and to change stained absorbents [4, 20]. The existing evidence highlights either a lack of disposal facilities for absorbents or inadequate and poorly maintained means of disposal [21, 22].

Materials & Methods

Study Design

An observational cross sectional descriptive study was done to analyse the knowledge, attitude and practices about menstrual hygiene among adolescent and young adult girls.

Study Period

The study was carried out over a period of one week from 7th to 14th of December 2023.

Study Setting

The study was carried out among the students of an urban based degree college of Kurnool, Andhra Pradesh, India.

Inclusion Criteria

All students who were willing to participate in the study were included in the study.

Exclusion Criteria

All students who were not willing to participate in the study were excluded from the study.

Sample Size: Out of 400 students in the college, 339 students participated in our study.

Tools of Data Collection

Data were collected using a self-administered pretested closed ended questionnaire. It was circulated among them as a Google form. No name was attached to the questionnaire. Filling up of the questionnaire was taken as consent for participation in the study.

Statistical Analysis: The collected data were first checked for completeness and consistency. Descriptive statistics were computed to measure the level of knowledge and hygienic practice towards menstruation. We used bi-variable and multi-variable logistic analysis to identify factors associated with the poor menstrual hygiene practice of adolescent college girls. All variables with P-values less than 0.25 during bi-variable analysis were entered together into a multi-variable analysis to control possible confounders. The strength of the association was also measured by odds ratio with corresponding 95% confidence interval (CI). IBM SPSS 26th version was used to do statistical analysis and a p-value of less than 0.05 was considered as statistically significant.

Results

A total of 339 students studying for graduation participated in this study. Among them majority were 18-19 years and 19-20 years (35.4% and 34.8% respectively) and belonging to Muslim religion (62.2%). More than one third of parents of students studied up to 7th class. About 78.8% of girls received information regarding menstruation from their mothers (78.8%). (Table 1)

Table 1: Socio-demographic factors of students

Socio-Demographic Factors		Frequency	Percentage
Age	18-19 years	120	35.4
	19-20 years	118	34.8
	20-21 years	77	22.7
	>21 years	24	7.1
Religion	Hindu	92	27.1
	Muslim	211	62.2
	Christian	25	7.4
	Others	11	3.3
Educational status of mother	Illiterate	78	23.0
	Up to 7 th class	139	41.0
	8 th -12 th class	78	23.0
	Degree and above	44	13
Educational status of father	Illiterate	55	16.2
	Up to 7 th class	119	35.1
	8 th -12 th class	82	24.2
	Degree and above	83	24.5
Source of information about menstruation	No knowledge	12	3.5
	Mother	267	78.8
	Friends	34	10
	Media	26	7.7

Table 2a: Knowledge regarding menstruation and menstrual hygiene practices

Knowledge	Strongly agree No. (%)	Agree No. (%)	Neutral No. (%)	Disagree No. (%)	Strongly disagree No. (%)
Knowledge about menstruation is a normal phenomenon	88 (26)	186 (54.9)	47 (13.9)	4 (1.2)	3 (0.9)
Menstruation is a lifelong process	13 (3.8)	108 (31.9)	64 (18.9)	82 (24.2)	64 (18.9)
The protective cloth or absorbent needs to be changed every 6 hourly	112 (33)	188 (55.5)	24 (7.1)	7 (2.1)	0 (0)
The absorbent is to be disposed wrapped in a paper before putting in to dustbin	83 (24.5)	178 (52.5)	27 (8)	11 (3.2)	31 (9.1)
Washing external genitalia while changing absorbent every 6th hourly is a good practice	110 (32.4)	193 (56.9)	25 (7.4)	2 (0.6)	0 (0)
The person in menses should not touch others, religious books, not to enter kitchen	9 (2.7)	122 (36)	47 (13.9)	73 (21.5)	80 (23.6)
It is bad to discuss about menstrual hygiene and menstrual complaints with others.	8 (2.4)	100 (29.5)	41 (12.1)	97 (28.6)	84 (24.8)

Table 2b: Knowledge regarding menstruation

Knowledge	Yes No. (%)	May be No. (%)	No No. (%)
Knowledge that source of menstrual blood is from uterus	230 (67.8)	81 (23.9)	19 (5.6)
Normal duration of menstrual flow is 3 to 7 days	285 (84.1)	30 (8.8)	17 (5)
Normal cycle length is 21-35 days	204 (60.2)	76 (22.4)	51 (15)
Hormonal changes is the reason behind menstruation	235 (69.3)	80 (23.6)	17 (5)

Table 2a and 2b showed knowledge regarding menstruation and menstrual hygiene practices. About 80% of students agreed that menstruation is a normal phenomenon and only know that menstruation is not a lifelong process. More than 90% of them agreed that they have to change protective cloth or absorbent every 6 hourly and believe that wash external genitalia while changing absorbent every 6th hour is a good practice 80% of them agreed that it should be disposed of hygienically. There are misconceptions in the families of students like during menstruation The person should not touch others, religious books, not to enter kitchen and It is bad to discuss about menstrual hygiene and menstrual complaints with others.

About 67% had knowledge that that source of menstrual blood is from uterus, 84% of them believe that Normal duration of menstrual flow is 3 to 7 days and 60% believe

that Normal cycle length is 21-35 days. 69.3% had aware that Hormonal changes is the reason behind menstruation. (Table 2a and 2b)

Table 3: Distribution according to menstrual hygiene practices

Practice		Frequency	Percentage
How frequently do you change absorbent	6th hourly	186	54.9
	Twice daily	133	39.2
	Once daily	20	56.1
Do you wash genitalia every time while changing absorbent	Always	222	65.5
	Often	22	6.5
	Sometimes	77	22.7
	Never	18	5.3
Do you wrap the absorbent in a paper before putting in to dustbin	Always	256	75.5
	Often	17	5
	Sometimes	51	15
	Never	15	4.5
Did you ever discuss about menstrual problems and hygiene with your mother/friend/doctor	Yes	276	81.4
	May be	39	11.5
	no	24	7.1
Are you allowed to enter kitchen/religious places when you are in menses	Yes	222	65.5
	no	117	35.5
Are you absent from college during menses	Always	16	4.7
	Often	21	6.2
	Sometimes	228	67.3
	Never	74	21.9
Reason for absent to school	Fear of staining of clothes/smell	16	6
	Pain/excess bleeding	230	86.8
	Improper sanitation at college	19	7.2
Overall menstrual hygiene practice	Good	281	82.9
	Poor	58	17.1

Only 54.9% change pad or absorbent every 6th hourly and 65% of them wash genitalia every time while changing absorbent. 75.5% of them were always wrap the absorbent in a paper before putting in to dustbin. 81.4% discussed about menstrual problems and hygiene with your mother/friend/doctor. 65.5% were allowed to enter kitchen/religious places when you are in menses. 78% were absent to college during menstruation and most common reason was Pain/excess bleeding. From these practices, 82.9% had good menstrual hygiene practices.

Table 4: Bivariable and multivariable analysis of factors associated with poor menstrual hygiene practice among students

Variable	Categories	C OR 95%	A OR 95% CI
Age	18-20 years	1	1
	19-20 years	2.422 (1.054-5.567)	2.053 (0.850-4.957)
	20-21 years	0.570 (0.283-1.148)	0.452 (0.205-0.993)*
	>21 years	1.300 (0.272-6.212)	0.540 (0.097-3.015)
Religion	Hindu	1	1
	Muslim	0.618 (0.301-1.272)	0.936 (0.412-2.130)
	Christian	0.996 (0.255-3.833)	0.997 (0.221-4.059)
Education of mother	Illiterate	1	1
	Upto 7 th class	0.690 (0.329-1.444)	0.914 (0.392-2.132)
	8 th to 12 th class	1.394 (0.551-3.525)	1.261 (0.446-3.565)
	Degree and above	3.273 (0.694-15.436)	2.525 (0.441-14.444)
Education of father	Illiterate	1	1
	Upto 7 th class	0.181 (0.061-0.538)	0.249 (0.075-0.823)*
	8 th to 12 th class	0.840 (0.234-3.019)	0.934 (0.243-3.596)
	Degree and above	1.129 (0.289-4.413)	1.091 (0.239-4.989)
Knowledge score	Poor	1	1
	Good	12.719 (3.769-42.925)	3.851 (0.687-21.599)

C OR: Crude Odds ratio, A OR: Adjusted Odds ratio, *significant

Bivariable and multivariable logistic analyses were done to identify factors associated with menstrual hygiene. Accordingly low the age, low educational status of parents and poor knowledge towards menstruation had statistically significant association with the poor menstrual hygiene practiced. (Table 4)

Discussion

A total of 339 students studying for graduation participated in this study. Among them majority were in the age group of 18-19 years (35.4%) and belonged to Muslim religion (62.2%). About 80% of students agreed that menstruation is a normal phenomenon and only know that menstruation is not a lifelong process. About 78.8% of girls received information regarding menstruation from their mothers. More than 90% of our participants agreed that they have to change protective cloth or absorbent every 6 hourly and believe that wash external genitalia while changing absorbent every 6th hour is a good practice 80% of them agreed that it should be disposed of hygienically. Our results are similar to a study involving medical and nursing students in Gujarat which reported that a majority of the adolescent girls (79%) had proper knowledge about menstruation [23]. In contrast to our results, 31.3% of the subjects had received information from the school, 39.8% from their mother, 3.9% from their friends, and the rest (around 3.1%) from unknown sources such as sisters, internet, and so forth. A cross-sectional study found inadequate comprehensive knowledge of MHM among female college students in Bhutan. A majority of women (>50%) appeared to be quite knowledgeable although a few students did not know the answer to any of the “knowledge” questions about menstruation [24]. They found that the main source of

information on menstruation was mothers for half (50.3%) of the students, with the rest reporting teachers (19.5%), friends (14.4%), sisters (14.3%), and others (1.9%) [24]. However, an institutional study conducted in Ethiopia showed a better knowledge towards menstruation among adolescent school girls as compared to a similar study done in India, which revealed that 71.3% of female students had poor knowledge regarding their menstruation [25]. The possible explanation for this discrepancy might be the measurement techniques studies used to assess level of knowledge and the socio-cultural differences of study participants. Belayneh observed that 38.3% mentioned their mother as the main source of information and 16.3% got such information from their peers. Relatives, teachers, media and others were also mentioned as sources of information related to menstrual bleeding and its safe management by 6.4, 2.4, 7.6 and 1.3% of girls having information, respectively [26].

It is investigated that knowledge towards menstruation has significant association with menstrual hygienic practices of girls [27-29]. This is possibly due to the effects of cultural beliefs and social taboo regarding menstruation and its hygienic practices attributed by the community they live [30, 31, 32]. Confirming this observation, 82.9% of our subjects have good menstrual hygiene practices. Among the college students of Bhutan, the scores for “practices” were found to be better than for “knowledge”, almost all students reported that they bathed during menstruation and disposed products properly. Majority of participants (81.4%) discussed about menstruation and hygiene with mother or friends. This is similar to study in Bhutan among college girls, where majority (94.0%) of the participants strongly agreed on the importance of talking about menstruation. Only 7.1% of our participants never participated to address MHM in a conversation. About 34.5% participants were not allowed to enter holy places during menses. This is similar to another study where one-third (35.1%) of the participants agreed that women should not enter a shrine when menstruating. Only one-quarter still agreed with beliefs such as not entering shrines or not touching holy books during menstruation and menstruation being dirty [24]. The proportion of the female college students agreeing with socio-cultural beliefs, such as not entering a shrine or menstruation being dirty, is small but similar to a study among school girls in Bhutan (6). This may indicate that beliefs do not change with an increase in educational level. A similar study in Nepal found that cultural beliefs lead girls to practice self-imposed restrictions like not entering temples or joining prayer ceremonies [12]. These beliefs and taboos remained as menstruation was not discussed and these perceptions are passed through generations [14, 21]. Ethiopian study also found that 44% of the study subjects avoided attending marriage/other rituals during menstruation, 20.47% were not allowed to cook/serve food, 17.32% stayed indoors, 7.87% were isolated, and 21.26% avoided physical exercise during the said period [23]. A study by Sadiq *et al.* [33] found that 84.2% of the girls restrict their physical activity while menstruating. The commonest restriction found in this study by the majority (74.80%) was not visiting the places of worship.

One of the other practices of menstrual hygiene among the girls studied was the frequency of cleaning. Only 54.9% change pad or absorbent every 6th hourly and 65% of them wash genitalia every time while changing absorbent. 75.5% of them were always wrap the absorbent in a paper before putting in to dustbin. In the study done among nursing and medical students, it was found that 11.7% of the subjects changed the absorbent material more than thrice in a day, whereas 10.2% changed once during a

day and the majority (72.7%) changed more than thrice in a day. A higher frequency of change in the usage of the absorbent material is considered a good menstrual hygiene practice ^[23].

Approximately half of college students claimed that menstruation affected their usual activities ^[24]. The majority rated pain as the main reason for absenteeism from college. Majority of subjects in our study (78%) were absent to college during menstruation and most common reason was Pain/excess bleeding. Few students (7.2%) mentioned improper WASH infrastructure in the college as the reason for absenteeism.

This is comparable to the assessment conducted among school-going girls in Bhutan ^[6]. A similar study in Mumbai found that the most common problems faced during menstruation were menstrual cramps. Another key finding of this study was inadequate MHM facilities like water, soap and bins for disposal of absorbents in both hostels and college toilets, compromising the ability of the students to practice proper hygiene. These findings have been corroborated by a systematic review carried out in low and middle-income countries where women and girls were unable to undertake their preferred menstrual practices due to inadequate MHM infrastructure ^[34, 35, 36]. Lack of safe spaces for MHM may affect the health and dignity of women and girls ^[35].

Conclusion

Overall understanding of menstruation was good, and the MHM practices of our participants scored highly.

Improved public health knowledge, Psycho-social/medical support, and WASH infrastructure with freely available menstrual products could lead to more effective MHM practices among female college students.

Strengths and Limitations

The study has the following implications: First, increased educational sessions in schools and colleges could improve MHM practices. The focus should be on evidence-based hygiene practices and demystifying false beliefs that limit the participation of women and girls in education and other sociocultural activities. Second, adequate physical facilities to practice MHM are crucial in improving hygiene practices. This should be followed by timely monitoring of these facilities. Also, colleges could ensure that a healthcare provider is available who can help women when they feel unwell, treat the side effects of menstruation, and assess their urogenital health in case of infections. The college and management should take immediate action to ensure the availability of clean running water and soaps, bins with lids for disposal of sanitary bins, and secure, lockable doors in the toilet facilities.

The limitation of our study is that majority of our subjects belong to low socioeconomic status and the results may not reflect the similar findings in general population.

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Ethical Approval: The study was approved by the Institutional Ethics Committee.

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