



NEED FOR IMPROVING THE KNOWLEDGE AND PRACTICES OF ADOLESCENT GIRLS REGARDING MENSTRUAL HYGIENE AND REPRODUCTIVE HEALTH: A STUDY FROM URBANIZED VILLAGES OF NORTH INDIA.

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ABSTRACT

Context: In India nearly 71% of adolescent girls have no knowledge about menstruation until menarche. Menstrual practices still face several social, cultural, and religious restrictions and discouragement of open discussion on the topic acts like a major deterrent in the path of menstrual hygiene management. Moreover, lack of knowledge and incorrect practices during menstruation can sometimes have serious health outcomes. Hence, it becomes imperative to ascertain the knowledge of adolescent girls about menstruation and reproductive health and the practices adopted by them during menstruation so that health education programs can be tailored to address the gaps. **Aims:** The study aims to assess the knowledge of adolescent girls and their current practices with regard to menstrual hygiene and reproductive health and study the association of these with socio-demographic variables. **Methods:** This cross-sectional community based descriptive study was conducted among 181 adolescent girls selected from two urbanized villages of Meerut district of India using a semi-structured questionnaire. For assessment of level of knowledge a scoring system was developed. Both descriptive and inferential statistics were used for analysis. **Results:** Based on the scoring, 77.3% of our study participants had overall poor knowledge about menstruation and reproductive health, nearly 20% had satisfactory knowledge and only 2.2% had good knowledge. Most participants reported using sanitary napkins during menses (80.7%) and the remaining were using clean cloth (19.3%). 100% of the participants whose mothers were illiterate had poor knowledge about menstrual hygiene and reproductive health. Participants whose mothers were engaged in semi-skilled or skilled work were more likely to have satisfactory (39.4%) or good (4.3%) knowledge scores. **Conclusion:** Overall knowledge of our study participants regarding menstrual hygiene and reproductive health was poor; however the practices adopted by them during menstruation were good. The two main impediments in the path of menstrual hygiene management were lack of knowledge and non availability of services at affordable cost.

KEYWORDS : Menstrual hygiene, Reproductive health, Adolescent girls

INTRODUCTION

Adolescence is the most turbulent phase of life in terms of both career and one's place in life and health. The concerns become more marked in girls, who in addition, have to cope up with menarche as well. Many of them are likely to harbour apprehensions about the physical and physiological changes concomitant with menarche. Although menstruation is a natural process, it is linked with several perceptions and incorrect practices within the community which may sometimes result in adverse health outcomes. In India menstrual practices still face several social, cultural, and religious restrictions and discouragement of open discussion on the topic acts like a major deterrent in the path of menstrual hygiene management. Nearly 71% of adolescent girls have no knowledge about menstruation until they get their first period.¹ Girls and women have little or no knowledge about reproductive tract infections caused due to ignorance of personal hygiene during menstruation.²

The Ministry of Health and Family Welfare in India has implemented few schemes as part of the Rashtriya Kishor Swasthya Karyakram with the aim to increase awareness on menstrual hygiene among adolescent girl, increase access to and use of good quality sanitary napkins and to ensure safe disposal of sanitary napkins in an environmentally friendly manner but the impact is yet to be seen.^{3,4} Reports from recent studies in India have shown that around 23 million adolescent girls drop out of school because they have no or little information about menses and services related to menstrual hygiene. Surveys by the Ministry of Health and Family Welfare

has consistently shown that most problems related to menstrual hygiene in India are preventable and are due to low awareness and poor menstrual hygiene management.^{3,4} Accessibility to sanitary napkins still remains a major concern in India.^{5,6} Roughly 120 million menstruating adolescents in India experience menstrual dysfunctions, affecting their reproductive health.^{3,4}

Poor menstrual hygiene can cause myriad of symptoms ranging from itching, rashes and bad odour in the perineal region to serious complications such as pelvic inflammatory disease and toxic shock syndrome. Of the 60,000 cases of cervical cancer deaths reported from India every year, two-thirds are attributed to poor menstrual hygiene.⁴

Despite increased attempts at awareness generation, there is still significant lack of information on proper hygiene and sanitation practices during menstruation. The taboos surrounding this issue prevent girls and women from articulating their needs and the reservations associated with discussion on the topic have hindered spread of appropriate knowledge to the adolescent girls.

Hence, it becomes imperative to ascertain the knowledge of adolescent girls about menstruation and reproductive health and practices adopted by them during menstruation so that the health education programs can be tailored to address the gaps.

OBJECTIVES

1. To assess the knowledge of adolescent girls about menstrual hygiene and reproductive health.
2. To ascertain their current practices regarding menstrual hygiene and reproductive health.
3. To study the association, if any, of socio-demographic variables with their knowledge about menstrual hygiene and reproductive health practices.

MATERIAL AND METHODS

This cross sectional community based descriptive study was conducted in the year 2019 at Siddharth Nagar and Kaliyagarhi, two randomly selected urbanized villages of Meerut district in India. Our study participants were 181 adolescent girls in age group of 10 to 19 years who had attained the menarche and consented to participate in our study. The participants were recruited by convenience sampling from the selected villages.

Self prepared semi-structured pretested questionnaire was developed to elicit the socio-demographic details, assess knowledge about menstrual hygiene and reproductive health and ascertain the current practices related to menstrual hygiene and reproductive health. Participants were interviewed personally by the investigators after obtaining their consent and assuring confidentiality of the information obtained. Approval from Institutional Ethics Committee was taken for conducting the study. For assessment of knowledge of the participants a scoring system was developed. Each correct response depicting the correct knowledge of the participant was given a score of 2, while, the incorrect response was scored as zero. Since the numbers of questions asked were 10, the total score ranged between 0-20.

Categorization of the scores was done to classify the level of knowledge of study participants as follows:

Score	Level of Knowledge
>12	Good
9-12	Satisfactory
<8	Poor

Data obtained from the study was analyzed using SPSS software version 20.0. Descriptive tabulations were done for socio-demographic variables and practices related to menstrual hygiene and reproductive health. Items pertaining to knowledge were scored and level of knowledge of study participants was assessed. To study the association of knowledge of the study participants with socio-demographic variables, Chi-square test / Fisher's exact test was used for categorical variables as applicable. P-value <0.05 was considered as statistically significant result.

Outcome measures of the study included:

1. Mean knowledge scores.
2. Proportion of subjects with good, satisfactory and poor scores for knowledge.
3. Frequency of various practices followed by the adolescent girls during menstruation.
4. Factors associated with level of knowledge about menstrual hygiene and reproductive health.

RESULTS

Socio-demographic Profile of Participants:

A total of 181 adolescent girls were included in the study, 90 from Siddharth Nagar and 91 from Kaliyagarhi village. The mean age of our study participants was 14.9 years with a standard deviation (SD) of 1.8. Nearly 60% of the participants belonged to nuclear families while 21.5% of them were from joint families. Mother's of 26.5% of participants were illiterate, however majority were educated up to middle school (56.4%). None of the mothers had any professional qualification. In contrast to the mothers' educational status of the participants, only around 4% of the fathers were illiterate and a much higher proportion of the fathers were educated up to high

school and above (56.4%). Mothers of nearly 52% of the participants were unemployed. In a notable contrast to the mothers, only 1.7% of the fathers of the study participants were unemployed and majority of them were either semi-skilled (38.1%) or skilled workers (28.7%). The total monthly family income of nearly half of the study participants (46.4%) ranged between Rs 5483 to Rs 9137, whereas it was between Rs 1845 to Rs 5482 for 28.7% of participants. Majority of the participants were single (97.2%) at the time of conduct of the study while only 2.8% were engaged. None of them however were married. All of our study participants reported as having a toilet facility at home.

More than three – fourths of our participants (80.1%) were currently studying in school, 12.2% had dropped out while 7.7% had passed out of school. Out of those who were currently studying, 61.4% were attending only girls' school whereas 38.6% were in co-ed schools. For majority of these participants (67.5%), the distance of the school from home was >2 km.

Mean age at menarche of our study participants were 12.5 years with a SD of 0.8. When enquired about the reaction to advertisements related to sanitary napkins, majority of our participants reported that they felt shy in front of the male members (97.2%) or embarrassed (81.2%). Very small proportion of the participants (1.7%) felt that the advertisements should be banned. However, 12.7% felt that the advertisements are informative

Knowledge and Perception of the Participants Regarding Menstrual Hygiene and Reproductive Health:

Nearly three – fourths of our study participants reported as not being aware about menarche until it happened. For most of the participants (71.3%), mother was the source of information about menstruation, menstrual hygiene and reproductive health followed by siblings (21.5%). Only three of the participants (1.7%) mentioned school teacher as the source of this information. More than half of the participants (54.7%) reported as being shocked in reaction to first menstrual bleed, 34.3% of them were scared and nearly 8% of them thought it was a wound. Around 83% of the participants perceived menstruation as being dirty or impure. The first person with whom majority of the participants confided after menarche was their mother (79%) followed by siblings (20.4%).

When the knowledge of study participants about the problems associated with menstruation was assessed, majority of them were aware of pain in abdomen (96.7%) and pain in lower back and legs (58.6%). 27.1% also reported tiredness as an associated problem of menstruation. Very small proportion reported constipation (3.9%) and swelling in face and body (0.6%) as problems. Other problems associated with menstruation were reported as breast tenderness (8.8%) and depression and irritation (9.4%). 81.1% of the participants had knowledge about sanitary napkins as sanitary material for use during menstruation. However, a good proportion (18.3%) knew of clean cloth as a sanitary material. Majority of the participants acquired knowledge about availability of material for use during menstruation from mother (66.9%), however, a substantial proportion had acquired this knowledge either from school (17.7%) or local chemist (8.3%).

All of our study participants knew that reuse of napkin / cloth used during menstruation should not be done and that the used material should be thrown in dustbin.

When enquired about the knowledge regarding pubertal changes during adolescence, nearly 83% were completely unaware of any of the changes. Most of the participants who had some knowledge reported gain in height (9.9%), acne (9.4%), gain in weight (7.2%), onset of menstruation (7.2%) as the changes which occurs during puberty.

Similarly, 84% of the participants had no knowledge about symptoms of reproductive tract infections (RTI) or sexually transmitted infections (STI). Out of those who had knowledge about symptoms of RTI / STI, most of them knew about itching in vulva (12.7%) and burning during urination (11%) as the symptoms. Only around 4% of them knew about vaginal discharge as the symptom and 2.8% knew about repeated abortions being caused due to RTI / STI. Majority of the participants (97.2%) had no knowledge about management of RTI /STI. Only 3 participants (1.7%) knew that RTI / STI are curable and that treatment of the partner is also required.

Based on correct responses to the knowledge questions, scoring of the level of knowledge of the participants was done as shown in Table 1. More than three – fourths of our study participants (77.3%) had overall poor knowledge about menstruation and reproductive health and only 2.2% had good knowledge.

Table: 1 Knowledge scores of the study participants (n= 181)

Level of Knowledge	N(%)
Poor	140 (77.3)
Satisfactory	37 (20.4)
Good	4 (2.2)

Current Practices of the Study Participants Regarding Menstrual Hygiene and Reproductive Health:

When enquired about the current practices, 100% of the participants reported of some restrictions being imposed during menstruation. The most prevalent practice reported by the participants was not being allowed to visit places of worship (97.8%) followed by restriction of movement in kitchen (38.1%). Other practices reported were initiation of talks about their marriage (6.6%), not allowed to wear a dress of their choice (5%) and not allowed to go out and play or fetch water (3.9%).

Most participants reported as using sanitary napkins during menses (80.7%) and the remaining were using clean cloth (19.3%). None of the participants reported using indigenous pad made from cotton and gauze or any other material. Local chemist was the most common place reported by the participants from where material to be used during menses was obtained. None of them reported as having obtained the material from school and only one participant reported having obtained it from Anganwadi centre. None of the participants mentioned about reuse of the material used during menses and the practice adopted for disposal of used material by all of them was throwing it in dustbin.

When health seeking behaviour for reproductive morbidities was enquired upon from the participants, 67.4% of participants said that they would first discuss with family members and friends (76.8%) regarding seeking help. Majority of them (88.4%) said that they would not indulge in any self-medication. Only very small proportion said that they would visit a pharmacy for advice (2.8%) or nearby health facility (8.9%).

Factors Associated with Knowledge about Menstrual Hygiene and Reproductive Health:

As depicted in Table 2, higher proportion of participants whose mothers were educated up to middle school had satisfactory (29.4%) or good knowledge (3.9%) about menstrual hygiene and reproductive health as compared to those whose mothers were illiterate and this difference was found to be statistically significant.

Participants whose mothers were engaged in semi-skilled or skilled work were more likely to have satisfactory (39.4%) or good (4.3%) knowledge scores as compared to those who were unemployed or engaged in unskilled work. The association between the knowledge scores of the participants

and their mother's occupation was found to statistically significant.

Participants with higher family income (Rs 9138 – Rs 36552) were more likely to have satisfactory (23.1%) and good (5.8%) knowledge scores as compared to those whose family income was in the other two groups; however, the difference was not found to be statistically significant.

Higher proportion of participants who were currently in school had satisfactory (20.7%) or good (2.8%) knowledge scores as compared to those who had dropped out from school. Those who had passed out from school were more likely to have satisfactory knowledge scores as compared to other two groups, however, very high proportion of participants dropped out from school had poor knowledge scores. The association between school going status and knowledge level of participants was not statistically significant.

Table: 2 Factors associated with knowledge about menstrual hygiene and reproductive health (n= 181)

		Poor N (%)	Satisfactory N (%)	Good N (%)	p-value
Mother education status	Illiterate	31(100)	0(0)	0(0)	<0.001
	Up to Middle School	68(66.7)	30(29.4)	4(3.9)	
	High School and Above	41(85.4)	7(14.6)	0(0)	
Mother occupation	Un employed	53(100)	0(0)	0(0)	<0.001
	Unskilled	34(100)	0(0)	0(0)	
	Semi-skilled and Above	53(56.4)	37(39.4)	4(4.3)	
Total monthly income	Rs 1,845-5,482	40(88.9)	5(11.1)	0(0)	0.101
	Rs 5,483-9,137	63(75)	20(23.8)	1(1.2)	
	Rs 9,138-36,552	37(71.2)	12(23.1)	3(5.8)	
School going status	School Going	111(76.6)	30(20.7)	4(2.8)	0.772
	Out of School	10(71.4)	4(28.6)	0(0)	
	School Drop Out	19(86.4)	3(13.6)	0(0)	

DISCUSSION

This research was a cross sectional community-based study carried out amongst 181 adolescent girls in two randomly selected villages of Meerut district. The mean age of our participants was 14.9 years and majority of them (59.7%) belonged to nuclear families. Mothers of 56.4% of the participants were educated up to middle school and nearly 52% were unemployed. In contrast, fathers of around 56% of the participants were educated up to high school and above and only 1.7% were unemployed. This typically reflects the rural India where men are assigned the social role of a bread – winner for the family and women serve as the homemakers. Very similar findings were reported by Bhore et al in their study done in Sangli district of Maharashtra in 2014 amongst school going adolescent girls of 13 to 15 years. They reported that most of participants (44.4%) were aged 13 years, 68.3% belonged to nuclear family, the age at menarche was 14 years for the majority (70.55%) and mother's of 52.2% of participants were educated up to secondary level.⁷ The mean age at menarche in our study was 12.5 years, the difference as compared to the study by Bhore et al could be because their

study included adolescent in the age group of 13 to 15 years only whereas our study included a much wider age group. A descriptive, cross-sectional study conducted by Dasgupta et al among 160 adolescent girls of a secondary school situated in the field practice area of Rural Health Unit and Training Centre, Singur, West Bengal, showed that the mean age at menarche of their participants was 12.8 years, a finding very similar to our study.⁸

The study by Dasgupta et al showed that out of 160 respondents, 108 (67.5%) girls were aware about menstruation prior to attainment of menarche and mother was the first informant regarding menstruation in case of 60 (37.5%) girls. In a study done by Juyal et al to find out the practices of menstrual hygiene among adolescent girls in Dehradun district of Uttarakhand, similar findings were reported, 64.5% of the girls were aware of menarche.⁹ However, in our study nearly three-fourths of the participants were not aware of menarche until it happened, although even our study showed that mother was the main informant (71.3%). The study by Dasgupta et al mentioned that 86.2% girls believed menstruation to be a physiological process although our study results showed that around 83% of participants considered menstruation to be impure or dirty.

The overall knowledge of our study participants regarding menstrual hygiene and reproductive health was poor; 77.3% participants had poor knowledge scores. But the study done by Bhore et al showed that majority (49.4%) of the adolescent girls had average knowledge related to menstruation and menstrual hygiene, 27.7% had good and poor knowledge each. This difference could be due to differences in the cut off score used for poor knowledge.

Although 48.7% girls knew the use of sanitary pad during menstruation in the study of Dasgupta et al, only 11.2% girls were actually using it. However, Juyal et al reported in their study that 38.4% of the girls used sanitary napkins and another 30% used clean cloth. In contrast to these, our study showed that 80.7% of the participants were using sanitary napkins. The probable reason could be that these studies were done nearly five years back whereas our study comes in a time when lot of emphasis is being given to reproductive health of adolescents through various schemes and programs of the government.

As per the findings of Dasgupta et al, 85% of girls practiced different restrictions during menstruation. However, findings of our study showed that 100% of the girls reported some form of restriction being imposed on them.

Mothers' educational status and occupation showed significant association with knowledge scores amongst the various socio-demographic variables compared. Higher proportion of participants whose mothers were educated up to middle school had satisfactory (29.4%) or good knowledge (3.9%) as compared to those whose mothers were illiterate. Participants whose mothers were engaged in semi-skilled or skilled work were more likely to have satisfactory (39.4%) or good (4.3%) knowledge scores as compared to those who were unemployed or engaged in unskilled work. Nearly similar findings were reported by Bhore et al in their study where highly significant association between knowledge and practice scores with mother's as well as adolescent girls' education was seen. It was found adolescent girls who were in grade 9 had more knowledge than girls studying in 8th grade. Very poor knowledge was observed among children of illiterate mothers.

The strengths of our study included selection of urbanized villages randomly and recruiting nearly equal number of participants from both villages to ensure equal representativeness of villages. Hence our findings could be

generalized to the urbanized villages of Meerut district. Both knowledge about menstrual hygiene and reproductive health were studied together so that their association with various socio-demographic variables could be established. Review of literature prior to the start of the study revealed that very few community-based studies have been conducted in India in this context in a comprehensive manner.

Some of the limitations of our study were that the study was conducted in two randomly selected urbanized villages of Meerut district. Therefore, the findings of our study were generalizable only to urbanized villages and may not be applicable to the purely rural areas of the district. Since ours was a cross sectional enquiry, there were inherent limitations of the cross-sectional design regarding temporality. Since both the dependent and independent variables were assessed at the same time, the cause effect relationships could not be established in our study. Although pretested, the questionnaire used to assess the knowledge and practices was not a standardized tool. Moreover the questionnaire was interviewer administered hence information bias could be present since the participants were more likely to give socially acceptable answers rather than their actual perceptions.

CONCLUSION AND RECOMMENDATIONS

Hence based on the results of our study we can conclude that our study participants had poor knowledge about menstrual hygiene and reproductive health and that mothers' education and occupation were significantly associated with their level of knowledge. However, the menstrual hygiene practices followed by the participants were satisfactory.

Thus, the above findings reinforce the need to encourage safe and hygienic practices among the adolescent girls and bring them out of traditional beliefs, misconceptions and restrictions regarding menstruation. Improving the knowledge about reproductive health using peer educators would go a long way in improving their overall health. Schools must also play a pivotal role in this regard. Therefore, equipping adolescent girls with required information on menstrual hygiene, its management and reproductive health will help empower them with the knowledge to augment both their self-esteem and prevent complications related to reproductive health later in life. The two main impediments in the access to care are lack of knowledge and non availability of services at affordable cost. Universalized use of sanitary pads must be advocated to every girl only after making it available at affordable prices through social marketing and at a place where the adolescent girl can feel confident enough to obtain it.

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The manuscript has been read and approved by all the authors. The requirements for authorship have been met and each author believes that the manuscript represents honest work.

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