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School absenteeism during menstruation amongst adolescent girls in Delhi, India

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Abstract:

BACKGROUND: Girls' health and education form the cornerstone of development and the gateway to full participation as women in political, economic, and cultural life of a country. Poor menstrual hygiene management has been shown to result in a sense of shame, anxiety, and embarrassment that contributes to absenteeism and poor performance at school. The objectives of this study were to determine the percentage of girls absent from school during menstruation, to evaluate the various factors associated with school absenteeism during menstruation, and to assess the practices regarding menstrual hygiene.

MATERIALS AND METHODS: A mixed method research of combined cross-sectional study and qualitative research was conducted in six government schools of Delhi by means of a questionnaire survey and focus group discussions. The sample size was 600 adolescent girls.

RESULTS: Out of 600, 245 (40%) girls remained absent from school during their menstruation. School absenteeism was significantly associated with the type of absorbent used, lack of privacy at school, restrictions imposed on girls during menstruation, mother's education, and source of information on menstruation. Nearly 65% reported that it affected their daily activities at school and that they had to miss their class tests and classes as a result of pain, anxiety, shame, anxiety about leakage, and staining of their uniform.

CONCLUSION: Since mothers are the primary source of information, they should be counseled to dispose of their taboos about discussing issues related to menstruation. They should be taught about the ill effects of adhering to taboos related to menstruation. The curriculum on general biology should have more detail on menstruation.

Keywords:

Challenges faced during menstruation, menstrual hygiene management, school absenteeism

Introduction

Good menstrual hygiene is crucial for both physical and mental health, education, and dignity of adolescent schoolgirls.^[1] Menstruation is part of the female reproductive cycle starting at puberty.^[2,3] Poor menstrual hygiene has been associated with serious ill-health, including reproductive tract and urinary tract infections.^[3,4] Inadequate water and sanitation facilities is a major impediment to school attendance for girls during menstruation, compromising their ability

to maintain proper hygiene and privacy.^[5] More than half the schools in low-income countries either lack sufficient toilets for girls or they are frequently not very clean.^[6]

A number of researchers and policy-makers have discussed the limits menstruation puts on school attendance and attainment.^[7] World Bank (2005) showed that girls could miss up to 4 consecutive days of school every month because of their periods, meaning that they missed 10%–20% of school time, which seriously impacted on their achievement.^[8] This is due to poor menstrual hygiene management (MHM) caused by both lack of information, privacy, washing facilities, and sanitary pads.^[9]

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According to the World Health Organization, the availability of adequate clean water and hygiene in schools is essential for nearly all the Millennium Development Goals, especially in the achievement of universal primary education, reduction of child mortality, and the promotion of gender equality.^[1] Poor sanitation at school greatly affects girls, especially menstruating girls, and further creates an unfriendly school environment for them.^[10] These challenges posed by poor hygiene management will continue to jeopardize the potential of girls and the realization of many United Nations Millennium Development Goals if they are not properly addressed.

The present survey was carried out to assess the current status of menstrual hygiene practices in schools in Delhi. The association between MHM and school absenteeism as well as its effect on the academic performance of adolescent girls was also studied. The aim was also to collect the baseline data on the availability of the facilities for the management of menstrual hygiene in the schools in Delhi to support the need for the national campaign driving "Clean India: Clean Schools." The objectives of the study were to assess the percentage of girls who were absent from school during their menstrual period, to evaluate the various factors associated with absenteeism during menstruation, and to assess menstrual hygiene practices.

Materials and Methods

The study was conducted in randomly selected six coeducational government senior secondary (up to class 12th) schools in Delhi, India. Adolescent girls in the 8th to the 12th class of selected schools were included in the study. The sample size was calculated on the assumption that the prevalence of school absenteeism on account of menstruation would be 43%.^[11] Setting a 95% confidence level, and the allowable error of 10%, the sample size calculated was 527. Assuming a nonresponse rate of 10%, the final sample size became 579. Thus, a total of 600 students were included in the study.

A list of government senior secondary schools was obtained from the district education officer and six senior secondary schools were randomly chosen from the list using simple random sampling. Adolescent girls in the 8th to the 12th class of selected schools were included in the study. Each standard is divided into classes of 45 students. To obtain the required sample size, one class of each standard was randomly selected. All the girl students in the selected classes who were present that day were included in the study. A mixed method research of combined cross-sectional survey and qualitative research was adopted. A questionnaire-based survey and focus group discussions (FGDs) of the

schoolgirls were done in order to explore the views of female students on menstruation and the challenges they face in managing it in a hygienic manner in school and the influence of menstruation on a girl's academic performance and school absenteeism. School attendance records were used to confirm the information on absenteeism. The study design also included an observation of the school environment for facilities related with MHM, that is, water, sanitation, and hygiene. Quantitative data were double-entered, validated, and analyzed using EpiData software (EpiData version 3.1 for entry and version 2.2.2.182 for analysis EpiData Association, Odense, Denmark). The association with key analytic outputs was calculated using univariate and multivariate analysis. The decision on coding rules and theme generation was done using standard procedures and in consensus. For the qualitative data, a total of 20 FGDs, comprising 6 participants in each group, were conducted in the selected schools. In each FGD, one student from each class was taken so that all age groups would participate in the discussion. The study participants were given a brief explanation of the purpose of the study and written informed consent was obtained from them. The qualitative data of FGD were collected in the quietest corner of the school compound to provide optimum privacy. The FGD centered on the girls' knowledge and perception of menstruation, hygienic management practices, menstrual influence on their academic performance, various challenges they face at school, and reasons for being absent from school. The information was recorded using a digital voice recorder and notes were taken. The recorded data were transcribed and translated into English. Predesigned, pretested questionnaires in Hindi and English were distributed to the girls according to their preference. The questionnaire had been pretested in one of the schools and modified. The school in which the pretesting had been done was not included in the study. The questionnaire collected information on age, socioeconomic status, education of parents, age at menarche, sources of information on menstruation, absence from school during menstruation, reasons for absence, and availability of facilities for water, soap, toilets, health education, and sanitary pads in the school to help with good management of menstrual hygiene. The questionnaire was administered in front of the researcher and in the presence of a school teacher. The researcher guided the students to complete the questionnaire. Ethical approval from the Institutional review board/ethics committee was obtained before the conduct of the study. Anonymity and confidentiality of the respondents was maintained throughout the study. Informed written consent from the respective school principals and the respondents' parents was obtained before data collection. Before asking for verbal consent, a brief explanation was given of the type and purpose of

the survey, and anonymity and confidentiality assured, the girls were assured that participation was entirely voluntary and that they were free to withdraw from the interview/discussion at any stage without any adverse consequences to themselves. The interviewer was a female.

Results

Out of a total of 624 girls enrolled in the study, 24 were excluded from the study because they had not attained menarche. Table 1 shows that out of a total of 600 girls, 464 (77.3%) girls were between 12 and 14 years and 104 (17.3%) were aged 14–16 years. Only 32 (5.3%) girls were aged 16–18 years. Most of the adolescent girls (63%) included in the study came from middle-class families, 34% girls were from lower middle-class families and 3.3% from upper-middle class. The number of girls that had attained menarche at age < 11 years were 2 (0.3%), at age 11 were 25 (4.2%), aged 12 were 179 (29.8%), aged 13 were 311 (51.8%), aged 14 years were 77 (12.8%), and aged 15 were 6 (1%). Hence, the mean age at menarche of the study population was 13 years. The majority of students had some information on menstruation and the major source was from school in sessions (85%) followed by school teachers (18%).

Table 2 depicts school absenteeism because of menstruation and the specific reasons for not attending school during menstruation. Out of 600 girls, 245 (40.8%) absented themselves from school during menstruation while 355 (59.2%) did not. Of the 245 students, 168 (68.6%) took 1 day off, 59 (24%) took 3–4 days off, and 18 (7.4%) took 5–7 days off. The reasons for being absent were diverse; 187 (76.3%) complained of pain (dysmenorrhea), 78 (31.8%) had excessive bleeding, 69 (28%) were absent because they were anxious about getting their clothes soiled, 53 (21.6%) do not attend school because they were embarrassed, and 9 (3.7%) were barred from attending school during their periods by their parents.

Table 3 reveals that menstruation affects school life in many ways. Although 34.5% of the students indicated that they were not affected by menstruation, most of the students (65.5%) were of the view that it affected their daily activities in school. About 12% of the adolescent girls missed class tests or examinations during menstruation and 58.5% were unable to participate in sports. 49.6% complained of lack of concentration and some (1.8%) could not answer questions in class, 5.6% were unable to write on the board, and 2.5% avoided sitting in a group. Out of 6 schools, one school had no separate toilet for girls. Absenteeism in this school during menstruation was the highest: 65 students out of 100 (65%) were absent. One school, which had only a few separate toilets had 51% absence from school. In the remaining 4 schools where there were separate

Table 1: Sociodemographic details, age at menarche, and sources of information on menstruation of the study participants (n=600)

Categories	Number (%)
Age group (years)	
12-14	464 (77.4)
14-16	104 (17.3)
16-18	32 (5.3)
Socioeconomic class	
Lower-middle	202 (33.6)
Middle	378 (63)
Upper-middle	20 (3.4)
Age of onset of menstruation (years)	
<11	2 (0.3)
11	25 (4.2)
12	179 (29.8)
13	311 (51.8)
14	77 (12.9)
15	6 (1)
Source of information*	
Through special sessions conducted at school	514 (85.7)
Through science teacher	112 (18.7)
When interrogated	27 (4.5)
From friends	20 (3.3)
Through internet	16 (2.7)
No information	50 (8.3)

*Multiple responses

Table 2: Information regarding the absence from school during menstruation

	Number (%)
Absence from school during menstruation	
Yes	245 (40.8)
No	355 (59.2)
Number of days of absence per month	
1	168 (68.6)
3-4	59 (24)
5-7	18 (7.4)
Reasons of absenteeism*	
Not permitted to attend school during menstruation	9 (3.7)
Pain/discomfort	187 (76.3)
Fear of leakage or staining	69 (28)
Excessive bleeding	78 (31.8)
Out of shame	53 (21.6)
No private place to manage period at school	68 (27.8)
Lack of running water supply	188 (76.7)
Lack of disposal system for pads/clothes	79 (32.2)
Lack of separate bathroom for girls	87 (35.5)

*Multiple responses were possible and the percent is <100%

toilets for girls, absence reported was 40%, 31%, 26%, and 24%. Total absenteeism resulting from the lack of or inadequate separate toilets was 19% (n = 114).

Out of 6 schools, 84 students of 1 school reported that most times there was no water. The rate of the absenteeism during menstruation was highest (40%) in this school. Other schools also reported of an intermittent supply of water and the rate of absenteeism in those schools was 12%. Hence, absenteeism related to the lack of or inadequate water supply was 17% ($n = 100$).

Table 4 shows unadjusted and adjusted odds ratios for association between school absenteeism and various factors. Students who used pieces of cloth were 3.10 times more likely to miss school than their counterparts (adjusted odds ratio [AOR] (95% confidence interval [CI]): 3.10 [1.97–4.67]). Schoolgirls whose mothers were illiterate were 2.40 times more likely to miss school during their menstrual period than girls whose mothers were literate (AOR [95% CI]: 2.40 [1.78–3.97]).

Girls in schools with no water, separate toilets, and other facilities for MHM were 5.60 times more likely to be absent from school during their menstrual period than girls from schools (AOR [95% CI]: 5.60 [3.90–7.40]). However, socioeconomic conditions, occupation of parents, and source of information on menstruation were not associated with school absenteeism.

Table 3: Effects of menstruation on school life of the participants ($n=600$)

Response*	Number (%)
No effect	207 (34.5)
Affects daily activities in school	393 (65.5)
Miss class test/examination	47 (11.9)
Inability to participate in sports	230 (58.5)
Lack of concentration	195 (49.6)
Unable to answer questions in class	7 (1.7)
Inability to write on the board	22 (5.5)
Avoid sitting in a group	10 (2.5)
Poor academic performance	86 (14.3)

*Multiple responses

In FGD, schoolgirls spoke of many challenges in managing their menstrual cycles, especially at school. Maintaining a code of silence on matters related to menstruation was the main challenge they faced since they felt rather awkward about asking teachers or friends for assistance, especially when there were boys around. Often, they would tell their friends to inform the teacher, “my friend is sick” and then they would either be sent home or would remain and sit quietly in class until everyone had left, often enduring painful menstruation cramps. On the lack of concentration, one girl said, “menstruation hampers our concentration in class since our attention is disturbed with the thought of possible sudden onrush and leakage of menstrual flow to stain our clothes.”

The most prominent challenges girls face at school include fear, shame, and teasing by classmates. Most of them said they would rather remain absent as the boys might figure out what was going on by their movements and grimaces because of cramps. One of them said, “I don’t want classmates to know that I am in my period because they would make fun of me and tease me, especially the boys.”

On the lack of products, many reported that the lack of adequate sanitary pads hinders their attendance at school in the days that bleeding is heavy. One of the girls stated, “I cannot always afford it.” Most of them usually used old cloth when at home and used sanitary pads only when they needed to go out.

On the restrictions imposed, most of the girls stated that they were not allowed to attend school their periods. They mentioned such traditions as not being allowed to cook or play with boys, though they said they continued with other household chores.

Wash-related issues – The girls indicated that they felt awkward to use toilet facilities when they did not have good-quality sanitary supplies to use in the course of

Table 4: Multivariate analysis of school absenteeism with menstrual hygiene practices

Parameters	School absenteeism		Crude odds ratio (95% CI)	Adjusted odds ratio (95% CI)
	Yes N (%)	No N (%)		
Material used				
Cloth	70 (62.5)	42 (37.5)	2.98 (1.95-4.56)	3.10 (1.97-4.67)
Sanitary pad	175 (36)	313 (64)	1.0	1.0
Perceived lack of facilities at school				
Yes	194 (57)	146 (43)	5.45 (3.75-7.91)	5.60 (3.90-7.40)
No	51 (20)	209 (80)	1.0	1.0
Restrictions imposed on playing and exercising				
Yes	218 (55.5)	175 (45.5)	8.3 (5.29-13.03)	8.7 (6.20-12.4)
No	27 (13)	180 (87)	1.0	
Mother’s education				
Illiterate	146 (50.3)	144 (49.7)	2.16 (1.55-3.01)	2.40 (1.78-3.97)
Literate	99 (32)	211 (68)	1.0	

Significant at $p < 0.001$. CI=Confidence interval

the day. They identified the lack of soap, clean toilets, clean water, privacy, and sanitary supplies as the main challenges at school. One of the students said, "... in school, there is nothing; i.e., there is no proper toilet, no water to drink and wash, no soap, no facility to dispose of the soiled sanitary towels and no private area for girls to change their underwear or sanitary napkins and manage their hygiene."

Discussion

The present study was conducted in the government senior secondary schools situated in different zones of Delhi. In our study, age at menarche of adolescent schoolgirls ranged between 10 and 15 years with a mean of 13 years. The results were similar to other studies done by Patavegar *et al.* (12.7 + 1 years)^[12] and Kumar *et al.* (13 years).^[13] It is also comparable to the study conducted by Thakre *et al.*^[14] who reported the mean age at menarche as 12.8 years.

The study shows that the major source of information about menstruation in school was through special sessions conducted at school, that is, 85%. In the study conducted by Patavegar *et al.*^[12] and Upashe *et al.*,^[15] teachers were the first informants for 40.2% and 50.4% of the girls, respectively.

A little less than half (40%) of the girls had been absent from school during their last menstrual period. This finding is in line with other studies conducted by Tegegne and Sisay^[16] who reported that over half (54.5%) of the girls had been absent from school during their last menstrual period. Bodat *et al.*^[17] also reported that 43.2% girls who attained menarche would remain absent from school during menstruation. The mean number of absent days was 1.2 ± 0.7 . In another study by Lee *et al.*,^[18] girls were less likely to attend school on the days they had their periods as compared with other days. In the present study, most of the girls did not come to school because of pain, excessive bleeding, fear of leakage, and out of embarrassment. Similar reasons were reported by Tegegne and Sisay.^[16] School absenteeism during menstruation days was also supported by the qualitative data as most students did not come to school because of the lack of sanitary materials, fear of sudden leakage of menstrual blood, and the mistreatment by the other students because of the accident. Similarly, Verma *et al.*^[19] and Agarwal *et al.*^[10] also reported that 50.6% and 34% of girls suffered from dysmenorrhea.

Menstruation and its related problems had contributed to the high rates of school absenteeism, repetition of the same class, and school dropout of adolescent girls. In our study, 11.9% girls reported that they missed class tests or examinations during their periods whereas in a study by Ahmed and Piro,^[20] a higher percentage of students (62%)

revealed that menstruation affected either their grades or they missed the examinations, and in 57%, it affected their participation in class activities and presentations. Our study also showed that 58% avoided participation in sports activities at school. This corresponds to another study conducted by Khamdan *et al.*^[21] where only 28.8% of the students usually exercised, 38% of whom continued to exercise and 62% stopped exercising during their period. Most of them (42.9%) indicated that pain was what prevented them from exercising

In rural Peru, the beliefs and taboos associated with menstruation strongly encouraged girls to remain at home during their period, which led girl students to drop out from school. In the present study out of 600, 393 (69.5%) girls reported that menstruation did affect their school life and they avoided certain activities at school. In the study by Tegegne and Sisay,^[16] over half, 263 (57.8%) of respondents had indicated that menstruation had affected their academic performance or rank negatively as compared to what it was before menarche. 58.5% avoided participating in the sports, 49.6% reported lack of concentration at school, 5.6% avoided writing on the board, and 2.5% avoided sitting with a group. It was also reported that 79.4% students' work did not improve because of the lack of concentration during their period (79.5%), poor class attendance (27.4%), concentration on pain (19.8%), class tests during the time of their period, and inability to concentrate during examinations, and the lack of preparation for tests as a result of menstruation-related problems. These findings are similar to the findings of the present study. School absenteeism was significantly associated and higher among those who did not use disposable sanitary napkins for their menstrual flow. Similarly, mother's education was significantly associated with the management of hygiene and the use of disposable sanitary napkins and hence school absenteeism. These results are in line with the studies conducted by Tegegne and Sisay^[16] and van Eijk *et al.*^[22] Our study reveals the positive association between the lack of privacy at school and school absenteeism. The same finding was reported by Grant *et al.*^[23] who stated that the level of perceived privacy in school toilets is significantly associated with the odds that a female student missed at least one day of school during her last menstrual period. The qualitative study also supports the findings from the survey. The girls surveyed had poor knowledge of and incorrect beliefs about menstruation. This was found in studies in Tanzania^[24] and India.^[25] In FGD, girls shared their desire for better MHM education and a proper place to dispose of soiled sanitary napkins.

Limitations

Due to the cross-sectional nature of the study, it is difficult to establish a causal relationship between the dependent

and predicting variables. It was also difficult to obtain the exact age of menarche as there may be recall bias. Since the information collected in the study was self-reported, a lot depended on the truthfulness and perception of the adolescents regarding difficulties they faced on account of poor MHM and also reasons cited for absenteeism.

Conclusion

From the findings of the cross-sectional survey, FGDs and the attendance records, it was observed that nearly half of the surveyed adolescent schoolgirls reported that they had been absent during their menstrual period. As reported by most of them, their absence from school was mainly due to physical discomfort during menstruation and the lack of basic facilities such as water, bathroom, and toilet facilities for MHM. There is a need to improve the conditions with respect to basic facilities at school to cut down the absenteeism. Since mothers are the rule makers at home for all practices during menstruation, they should be counseled to remove their inhibitions about discussing issues related to menstruation with their daughters well before the age of menarche. They should be taught about the ill effects of adhering to bizarre taboos on menstruation. Male teachers and schoolboys should be more informed regarding MHM as well, but providing a safe, comfortable space for girls to learn about their bodies is of the utmost importance. The focus on menstruation in the curriculum for general biology needs to be improved. Universalized use of sanitary pads by all girls can only promote if adequate good-quality supplies are made available and subsidized by the government. Fulfilling these gaps in all schools can enhance girl students' school attendance and their academic performance.

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Conflicts of interest

There are no conflicts of interest.

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