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Original Research Article

Poor management of menstrual hygiene: a leading cause of school absenteeism among adolescent girls in the urban slum of Madhya Pradesh

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ABSTRACT

Background: Despite the strides made in the field of adolescent and women health, menstrual problems remain a stigma. Unsatisfactory menstrual hygiene practices have a profound influence on the adolescent girl's health and academic performance. Therefore, the present study aimed to assess the relationship between school absenteeism and poor MHM and its impacts on school girl's day to day lives.

Methods: This is a cross-sectional study conducted among 384 adolescent girls enrolled in anganwadi centres of the urban slum of Madhya Pradesh from January to June 2018. A pre-designed and pretested questionnaire used to collect the data regarding menstrual hygiene practices and school absenteeism. Data were analyzed using the SPSS software (version 16.0. Chicago, SPSS Inc.).

Results: The study found that around two-thirds (64.3%) and nearly one third (30%) of the participants were using a simple cloth and sanitary pads. About half (50.6%) of the respondents miss their school during the menstruation. Majority of them perceived that menstruation interferes with their school performance. The main reason for missing the schools was fear/ shame of leakage. In multivariable regression lack of sanitary facilities and painful menstruation remained significant predictors of school absenteeism.

Conclusions: There is a dire need to fortify efforts directed towards increasing awareness on menstrual hygiene, to revamp the existing measures for improving menstrual health of the adolescent girls. Focused attention is warranted by policymakers to improve the quality of life of this vulnerable group.

Keywords: Adolescent girls, Menstrual hygiene, School absenteeism

INTRODUCTION

Adolescent girls constitute a vulnerable group, particularly in India female child is a neglected one. Menstruation is a normal biological process in the lives of every female still it's been covered in mystery and taboo, not to speak about openly cause of the society's lack of knowledge, misconceptions and malpractices.¹ Lack of knowledge and poor menstrual hygiene management (MHM) makes them prone to STI/RTIs,

severe lower abdominal pains and cramps and stress affects their quality of life in the long term.¹ Not only that most of the girls were anxious just over thought on their menstrual period itself and afraid of getting stained in clothes throughout the period.

Lack of access to clean, effective absorbents; inadequate facilities to change, clean and dispose of absorbents; lack of access to soap and water; and lack of privacy will hamper the effective menstrual hygiene management

(MHM).²⁻⁴ Besides, inadequate social support and presence of taboos can lead to psychosocial consequences of menstruation including shame, fear, anxiety and distraction.²⁻⁴ These can potentially affect girls' ability to thrive and succeed within the school environment.⁵ In India, 23 million girls drop out of school early when they start menstruating, many of them end up facing acute health problems.⁶

Addressing MHM contributes to millennium development goal-5 (MDG) directly improving maternal health. Due to its indirect effect on school absenteeism and gender discrepancy, poor menstrual hygiene and management may seriously hamper the realization of MDG-2 on universal education and MDG-3 on gender equality and women empowerment.⁷ Young girls are considered healthy their health concerns are not well taken generally and face lots of gender discrimination. Urban slum adolescents were more neglected in terms of healthcare services as they not enrolled in any of the administrative sections.

The government charted various initiatives to deal with this public health issue like menstrual hygiene promotion as one of the responsibilities of the Accredited Social Health Activist (2005) followed by menstrual hygiene promotion scheme for girls in rural areas in 2011. In 2015, the Ministry of Drinking Water and Sanitation drafted the guidelines on MHM. Menstrual hygiene usually thought to be a multi-sectoral issue that needs an integrated action from various departments such as education, health, women, and child development and water sanitation hygiene (WASH).

Objective of the study

The present study carried out to assess the current status of menstrual hygiene management (MHM) in schools in urban slums of Bhopal. The study tried to establish the relationship between school absenteeism and poor MHM, reveal its impacts on school girl's day to day lives and the difficulties the girls experience in managing menstrual hygiene. It will help health policy makers to develop appropriate intervention to overcome these issues.

METHODS

This was a community-based cross-sectional study conducted among menstruating Adolescent girls (10-19 years) enrolled in Anganwadi centres in Banganga, an urban slum of Bhopal District, MP from January to June 2018. As this study is first of its kind in this study area, the prevalence of school absenteeism due to menstruation was assumed to be 50%.

Considering the margin of error to be 10% using formula z^2pq/d^2 (z = standard normal deviate at 95% confidence interval [CI]; $q=100-p$), the estimated minimum sample size was 384. Line listing of the adolescents prepared and simple random sampling used to select the participants.

A pre-designed, pretested and structured questionnaire used to collect the data through face to face interview of the study participants.

Outcome variable

School absenteeism of students during menstruation which enquires about the average number of days absent; reasons for not attending the school; whether menstruation interferes with their school performance

Independent variables

These include socio-demographic characteristics; knowledge and source of information about menstruation; menstruation characteristics (age at menarche; pain and flow characteristics, health issues related to menstruation, activities restricted at home); menstrual hygiene management practices (use, storage, disposal, frequency of change of absorbent; washing of external genitalia); and school environment for menstrual hygiene management (toilet facilities; a place for changing and dispose of used pads; any discrimination faced by the girls).

Ethical clearance from the Institutional Human Ethics Committee (IHEC) of AIIMS Bhopal, Madhya Pradesh was obtained. Each study participant was informed about the purpose, benefits, risks and their right to discontinue or refuses to participate in the study. Every participant had given written informed consent and assent obtained for respondents whose age less than 18 years of age from their parents/guardians assured that their confidentiality, privacy and anonymity be maintained.

Statistical analysis

Data were analyzed using the statistical package of social science software version 16.0 (IBM, SPSS Inc., Chicago, USA). Descriptive statistics calculated. Univariate and multivariable logistic regression was performed with 95% confidence level ($p<0.05$) to identify the factors associated with school absenteeism.

RESULTS

The mean age (SD) of study participants was 15.57 (1.8) with 62.4% of the respondents in the age group of 15 to 18. About three fourth of the participants were pursuing intermediate (9-12 classes) schooling. Around half and one fourth, the participants belonged to other backward and scheduled castes. About 81.4% of the respondents belonged to below poverty line category. About 27% of the mothers of the participants were illiterate (Table 1).

About 49% of the participants attained menarche at the age of 13 years. Around 60% of the participants were not aware of menstruation before menarche. Nearly one-fourth (23.2%) of the participants know the exact cause of menstruation. Even 3% of the respondents claimed that

it is a curse of God. Only 4% of the participants correctly mentioned the organ from where the menstrual flow occurs. Around four-fifth (83%) and 75% of the participants suffered from some or other health issues and claimed that the daily activities restricted at home. Around two-thirds (64.3%) of the participants were using simple cloth; only 30% of them were using sanitary pads; 12.4% of them didn't store the absorbent. About 40% of the participants throw it in the gutter nearby. About three fourth of the respondents clean their external genitalia more than two times a day (Tables 2 and 3).

Table 1: Socio demographic characteristics of the study participants (n=393).

| Characteristics | No. (%) |
|---------------------------------------|----------------------------|
| Age | |
| 11-14 | 125 (31.8) |
| 15-18 | 245 (62.4) |
| >18 | 23 (5.8) |
| Mean age (SD) of girls; Median; Range | 15.57 (1.8); 16; 11 to 20. |
| Education | |
| Primary education (1-5) | 11 (2.8) |
| Middle School (6-8) | 67 (17) |
| Intermediate (9-12) | 293 (74.6) |
| Graduate | 22 (5.6) |
| Religion | |
| Hindu | 280 (71.2) |
| Muslim | 113 (28.8) |
| Caste | |
| General | 88 (22.4) |
| OBC | 182 (46.3) |
| Scheduled caste | 88 (22.4) |
| Schedule tribe | 35 (8.9) |
| Socio economic category | |
| Below poverty line | 320 (81.4) |
| Above poverty line | 73 (18.6) |
| Mother's educational level | |
| Illiterate | 109 (27.7) |
| Primary (1-5) | 96 (24.4) |
| Middle School (6-8) | 97 (24.7) |
| Intermediate (9-12) | 71 (18.1) |
| Graduate | 20 (5.1) |
| Father's educational level | |
| Illiterate | 61 (15.5) |
| Primary (1-5) | 79 (20.1) |
| Middle School (6-8) | 85 (21.5) |
| Intermediate (9-12) | 136 (34.6) |
| Graduate | 32 (8.3) |

About half (50.6%) of the respondents miss their school during the menstruation. Around three fourth miss their school for about two to three days. The main reason for missing the schools was fear/shame of leakage. More than half (60%) and 50% of the respondents claimed that lack of concentration in the classes and inability to participate in sports respectively. About 10% of the

respondents perceived that academic performance has reduced due to menstruation (Table 4).

Table 2: Knowledge and characteristics of menstruation among the study participants (n=393).

| | |
|--|---------------|
| Age at menarche | No (%) |
| 11 years and less | 21 (5.3) |
| 12 years | 92 (23.5) |
| 13 years | 193 (49.1) |
| 14 years and more | 83 (21.1) |
| Awareness about menstruation before menarche | |
| Yes | 154 (39.2) |
| No | 239 (60.8) |
| Source of information before menarche* | |
| Mother | 136 (32.1) |
| Sister | 33 (8.4) |
| Friend | 37 (9.4) |
| Teacher | 57 (14.5) |
| Television/print materials | 11 (2.8) |
| Knowledge regarding menstruation | |
| What is the cause of menstruation? | |
| Physiological process | 91 (23.2) |
| Because of eating | 1 (0.3) |
| Clean body | 1 (0.3) |
| Curse of god | 13 (3.3) |
| Don't Know | 284 (72.3) |
| Organ from which the menstrual blood comes | |
| Uterus | 17 (4.3) |
| Vagina | 25 (6.4) |
| Urethra | 89 (22.6) |
| Don't know | 262 (66.7) |
| Current status of menstrual cycle | |
| Irregular | 95 (24.2) |
| Regular | 298 (75.8) |
| Pain | |
| Painful | 256 (65.1) |
| Painless | 137 (33.9) |
| Bleeding | |
| Normal | 144 (36.6) |
| Excessive | 194 (49.3) |
| Scanty | 55 (13.9) |
| Health issues due to menstruation | |
| Yes | 326 (83) |
| No | 67 (17) |
| Activities Restricted during menstruation at home | |
| Yes | 296 (75.3) |
| No | 97 (24.7) |

*multiple response

Table 3: Menstrual hygiene management of the study participants (n=393).

| | |
|---|------------|
| Absorbent used for recent menstruation | |
| Sanitary napkins | 121 (30.7) |
| Simple cloth | 253 (64.3) |
| Cotton | 19 (4.8) |
| Storage of materials at home | |
| Cupboard | 251 (63.9) |

Continued.

| Absorbent used for recent menstruation | |
|--|------------|
| Bathroom | 58 (14.8) |
| Other hidden places | 35 (8.9) |
| Don't store | 49 (12.4) |
| Method of disposal | |
| Throw it in routine waste | 169 (43) |
| Throw it in the gutter nearby | 161 (40.9) |
| Buried | 37 (9.4) |
| Burn | 14 (3.6) |
| Flush it in the latrine | 12 (3.1) |
| Average number of absorbent used per day | |
| ≤2 | 239 (60.8) |
| >2 | 154 (39.2) |
| Cleaning of external genitalia | |
| Satisfactory (>2 times a day) | 262 (66.7) |
| Unsatisfactory (≤ 2 times a day) | 131 (33.3) |
| Genital cleaning material | |
| Only water | 283 (72) |
| Soap and water | 100 (25.4) |
| Water and antiseptic | 10 (2.6) |

Table 4: School absenteeism related to menstruation (n=393).

| School absent during menstruation in past year | |
|--|------------|
| Yes | 196 (50.6) |
| No | 194 (49.4) |
| Number of days absent per month (n=196) | |
| 1 | 55 (28.1) |
| 2-3 | 127 (64.8) |
| >3 | 14 (7.1) |
| Reasons for absenteeism* | |
| Shame / fear of leakage | 294 (74.8) |
| Pain or discomfort | 157 (39.9) |
| Excessive bleeding | 107 (27.2) |
| No private place (toilet) to change the sanitary pad | 113 (28.7) |
| Inadequate water in the school | 97 (24.7) |
| No place to dispose used pad | 136 (32.1) |
| Family restrictions | 20(5.1) |
| Faced discrimination in schools | 63 (16) |
| Effect of menstruation on school performance* | |
| Menstruation interferes school performance | 296 (75.4) |
| Lack of concentration | 236 (60) |
| Unable to answer questions in class | 51 (12.9) |
| Miss class test/examination | 21 (5.35) |
| Avoid sitting in a group | 34 (8.6) |
| Inability to participate in sports | 198 (50.4) |
| Poor academic performance | 37 (9.4) |
| No interference | 97 (24.6) |

*multiple response

Univariate logistic regression showed the educational status of the girl, painful menstruation, lack of sanitary facilities such as toilet facilities, changing pads and disposal of used pads were significant determinants of school absenteeism. Whereas in multivariable regression lack of sanitation facilities and painful menstruation

remained significant predictors of school absenteeism (Table 5).

Table 5: Regression analysis showing factors associated with school absenteeism.

| Variable | Crude OR | Adjusted OR |
|--|------------------|------------------|
| Age (>15 years) | 1.1 (0.7-1.7) | |
| Education (below 9 th standard) | 2.1 (1.2-3.5)** | 1.2 (0.6-2.2) |
| Religion (Muslim) | 1 (0.6-1.6) | |
| Caste (OBC) | 0.6 (0.4-1.1) | |
| Caste (SC/ST) | 0.4 (0.2-1.2) | |
| SES (BPL) | 1.2 (0.7-2) | |
| Mother's education (upto primary) | 1.3 (0.1-2) | |
| Father's education (upto primary) | 1.2 (0.8-1.8) | |
| Age at menarche (>12) | 1.3 (0.8-2) | |
| Awareness before menarche (yes) | 1.1 (0.7-1.7) | |
| Knowledge (poor) | 1.2 (0.7-2) | |
| Menstrual cycle (irregular) | 1.2 (0.7-1.9) | |
| Absorbent (sanitary napkin) | 1.1 (0.6-1.7) | |
| Cleaning of external genitalia | 1.1 (0.7-1.6) | |
| Storage of materials at home | 1.1 (0.5-2.2) | |
| Painful | 2.9 (1.8-4.6)*** | 2.4 (1.5-4.1)*** |
| Lack of facilities at school (yes) | 9 (5.7-17)*** | 3.1 (1.4-7)*** |
| School discrimination (Yes) | 1.4(0.8-2.5) | |
| Health issue (yes) | 1.2(0.7-2) | |
| Restriction at home (yes) | 1.4(0.9-2.3) | |

OR = odd's ratio, *p<0.05, **p<0.01, ***p<0.001

DISCUSSION

Girls are on par with boys up to adolescence, with the onset of puberty, girls face increasing restrictions to their activities and mobility impacting women and girls' education, health, and workforce participation which deviates the outcomes for girls.⁸ Across the country, millions of women still face significant barriers to a comfortable and dignified experience with menstrual hygiene management (MHM). Menstrual health promotion remains an issue of concern in India. To date, most studies have focused on knowledge, attitude and practice of MHM among urban and rural primary school students, and this study adds to the literature in focusing on slum population. Very few studies focus on school absenteeism as an outcome. So this study tries to explore the limitation of adolescents on attending schools and how it affects their academic performance.

In the present study, age at menarche of adolescent schoolgirls ranged between 10 and 16 years with most of the girls attained at the age of 13 years similar to other studies done at Delhi, Chandigarh and Nagpur.⁹⁻¹¹ The present study found that 60% were unaware of menstruation before menarche consistent with the findings of other studies and even higher (70%) in a study in rural Varanasi.⁹⁻¹³ The present study found that mothers followed by teachers were significant sources of information before menarche, which is similar to another study in the urban area of Bhopal where 70% of girls made aware by the mothers.¹² Whereas studies in Delhi and Ethiopia found teachers as the first informants for 85% and 50.4% of the girls, respectively.^{9,14} A study in rural Varanasi reported sisters (55%) played a significant role in providing information to them.¹³

In the present study, around one third (30.7%) of the respondents were using sanitary pads, a study in rural Varanasi and Ghaziabad showed similar results.^{13,15} Another study in Bhopal showed only 22% used sanitary napkins; 62% used simple cloth as absorbents.¹² A study in Nagpur showed nearly half (48.3%) of the girls used sanitary pads which is higher than the current study; the difference is due to urban and slum difference.¹¹

Prevalence of school absenteeism related to menstruation

In the present study around half (50.6%) of the participants had been absent from school during their menstrual period in last one year which is higher than studies in Delhi (40%), rural Pune (43.2%), West Bengal (39%), Bangladesh (41%). As all these studies conducted in economically stable areas where sanitary facilities and awareness about menstruation were available.^{9,16-18} The studies in Ghaziabad (64%) and Ethiopia (54.5%) showed a higher prevalence than the present study cause of the study area difference.^{14,15} Another survey in three states of India showed less proportion of absenteeism than the present study: Maharashtra (10.1%), Chhattisgarh (20.7), Tamil Nadu (3.5%), as the survey included urban and rural students who are economically sound.¹⁹ Whereas another study among nursing students in Tamil Nadu found that 67% of respondents not interested in going to the college during menstruation.²⁰ In the present study, 64% were absent for two to three days during menstruation similar to a study in Bangladesh; a study in Uganda reported 19.7% missing at least one day of school, during their most recent period. The main reason for more number of days absent is due to stigma and inadequate facilities in the school.^{18,21} A study in Delhi found that the mean number of absent days was 1.2 ± 0.7 , way less than the present study as the study done on slum girls.⁹

Reasons for absenteeism

The present study showed Pain (OR=2.4) as the main predictor of school absenteeism during menstruation

similar to studies done in Uganda (OR=1.9), rural Pune (OR=13).^{16,21} Besides, the present study found that the girls who experienced teasing and humiliation by classmates were prone to school absenteeism which is not significant in the present study and similar results found in Ghaziabad.¹⁵ The present study showed no significant association between socioeconomic status and education of parents; a study in rural Pune showed socioeconomic status as a predictor of school absenteeism.¹⁶ A survey in three states of India found that the only variables related to sanitary facilities at school, “clean toilets”, “toilet breaks”, and “can wash in school” remained significant similar to the present study. The survey found that around 46% of girls saying there were not enough toilets, and only 37% saying they were for girls only whereas government systems suggest that all schools should have enough gender-specific toilets.¹⁹ Even if the toilet is present, they were unusable the girls preferred to go outside or stay home.

Lack of knowledge about menstruation before menarche makes the girls perceive it as something unhealthy, shameful or obstructive to learning. Girl's attitude, misconceptions about menstruation and family restriction were other main risk factors for school absence which is inconsistent with the present study.^{20,28-30} Multiple intervention trials concluded that improved facilities for menstrual hygiene and delivering comprehensive sexual and reproductive health education programmes that address knowledge and practical skills relating to menstruation and MHM, including pain management have measurably improved girls' attendance.^{24,31,32}

Academic performance

In our study, 75% of girls perceived that menstruation interferes with school performance and activities at school shows that the menstruation not only has an impact on absenteeism but also affected the quality of school time. The fear of shame made difficult for the girls to stay in class and it also restricts the girls from outdoor activities similar to studies in Delhi where 69% girls reported that menstruation did affect their school life.⁹ About 60% of participants in the present study reported about lack of concentration during study hours similar to a survey in three states (50%); a study in Tamil Nadu showed higher proportion (71%) reported about lack of concentration.²⁰ These problems were affected by the type of menstrual item used, as more common among users of cloth compared to disposable pad users.¹⁸ A study in Iraq schools found a higher percentage of students (62%) revealed that menstruation affected either their grades or they missed the examinations, in 57%, it interferes their participation in-class activities and presentations; the present study reported around 10% reported poor academic performance.³²

This study allows understanding menstrual management in-depth with a large sample size, especially in most neglected population. Assessing school attendance

through quantitative surveys includes possible under-reporting as they don't want to report school absenteeism, or to name menstruation as a reason for this. Sometimes girls also may leave school early and miss hours of a school day due to menstruation, which would not be counted as an absence. Qualitative studies will give a clearer picture of various level factors and the complications related to MHM and practical solutions for this issue.

CONCLUSION

The present study found that about half (50.6%) of the adolescent girls were being absent in schools during the menstruation. Around 75% perceived that the menstruation interferes on school performance. The main reason for the same is painful menstruation and lack of sanitary facilities at school. It implies the fact that if the facilities for menstrual hygiene management at school are available, it can reduce the school absenteeism. For which, there is a need to strengthen the mechanisms to spread awareness on menstrual hygiene not only to the girls and their parents and the whole society to break the myths and taboos surrounding menstruation so that the schemes and initiatives reach the ground level. Simultaneously, provisions of sanitary napkins at subsidy and strengthening sanitation facilities for school students through various schemes such as Menstrual Hygiene Scheme and Swachh Bharat Abhiyan should be made available for the betterment of millions of women.

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