

A Study of School Absenteeism During Menstruation Amongst Adolescent Schoolgirls in An Urban Area of North India

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ABSTRACT

Introduction: WHO has defined adolescence period as the phase of life between childhood and adulthood. This study aimed to estimate the percentage of girls absent from school during menstruation, investigate the underlying causes of this absenteeism, and determine the association between school absenteeism and various factors.

Methods: In present community-based study, 473 school going adolescent girls studying in 9th to 12th standards were selected by multistage stratified random sampling method. We selected 3 private and 3 government schools. Adolescent girls were interviewed by pretested, predesigned, semi-structured questionnaire for data collection.

Results: The mean age of the students was 16.64 ± 1.4 years. 29.2% participants were absent from school during menstruation. Dysmenorrhea was the most prevalent reason for school absence, quoted by 51(37%) of the participants. In present study positive association between school absenteeism and various socio-demographic factors like the type of school, socioeconomic status, mother's education level, access to hygienic menstrual products and health education was observed.

Conclusion: Nearly one-third of the girls were absent in school during menstruation. The main reasons for school absenteeism reported by girls were dysmenorrhea, mother's restrictions, fear of staining cloth and difficulty in changing pads in school.

Keywords: School absenteeism, Adolescent schoolgirls, Urban area

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INTRODUCTION

WHO has defined adolescence period as the phase of life between childhood and adulthood, from ages 10 to 19. It is a distinctive stage of human development and an imperative time for laying the foundations of good health.¹ Adolescence period is full of opportunities and healthy adolescents are invaluable for national development. However, this period also brings risks and vulnerabilities.² In adolescent girls, puberty is marked by an important event known as menstruation. Menstruation and menstrual practices are still surrounded by myths and taboos resulting in negative impact on menstruating girls. Adolescent girls feel uncomfortable to talk openly about mensuration and related health problems with health workers.

The role of schools in constructing awareness about mensuration is also trivial.³ Girl's education is given importance globally because they are future mothers. Their education can affect health of whole family. However, school environments, including sanitation facilities, are often not promising due to a deficiency of ample water and toilet facilities.⁴ Latest studies have shown that menstruation associated absenteeism among schoolgirls is predisposed by several factors, including scarce sanitary facilities at schools, lack of awareness about menstrual hygiene, and stubborn cultural taboos.^{5,6} Several studies conducted across India showed percentage of school absenteeism during menstruation ranging from 30.25% to 50.6 % which is alarming.^{7,8,9} Absence from school can have a negative impact on grades, lower self-esteem, and increase female dropout rates.¹⁰

According to a systematic review there is unavailability of backup provisions of sanitary materials in Indian schools. Moreover, they found that, just 21% of girls took medication for menstrual pain, and 37% stated that absorbents were accessible in schools when necessary.¹¹ The study among schools across 3 states of India stated that IEC materials about menstruation were available in only 19% schools.¹² According to global baseline report 2018, 64% of schools in India were giving menstrual hygiene education to students.¹³

Girls who are menstruating suffer a number of difficulties because of poor hygiene knowledge, limited access to sanitary goods, poor sanitation, and a lack of assistance from family members or teachers.¹¹ School absenteeism during menstruation and its consequences are avoidable through recognition of factors associated with it. It will help to implement proper public health measures to decrease school absenteeism.

Hence this study was planned to estimate the proportion of girls absent from school during menstruation, to explore the causes of school absenteeism and also determine association of school absenteeism with various factors among adolescent schoolgirls in an urban area of North India.

METHODOLOGY

The present descriptive study was carried out among school going adolescent girls studying in 9th to 12th standard classes in various government and private schools in the urban field practice area of a medical college in Lucknow for 2 years. Determination of sample size using formula, $n = z^2 p(1 - p)/d^2$, in which, prevalence (p) of school absenteeism in previous study is 40% reported in Hennegan et al.,¹⁰ $q=100-p$, d =absolute error, 4.36%, sample size calculated as 315, After applying design effect 1.5 final sample size came as 473. Adolescent girls studying in 9th to 12th grade who have already attained menarche and whose guardians gave their consent, as well as girls present on the day of the study, were included. Girls whose guardians refused to give consent or who refused to give their assent for the study were excluded.

Sampling technique: There were total 15 schools in field practice area. A multistage stratified random sampling technique was used to select study subjects. Out of these 15 schools 9 schools were private & 6 were government. We selected 3 private and 3 government schools by simple random sampling method. Girl students were selected by probability proportional to size from each school. School principals of the selected schools were briefed regarding the study and permission was sought. Adolescent girls were personally interviewed by pretested, pre-designed, semi-structured questionnaire for data collection. The questionnaire includes sections on socio-demographic factors, school absenteeism. Written consent of the students/consent of parents and assent of minor students was taken on the previous day of data collection from the girls who were selected. The girls were informed that participation is completely voluntary and that they are free to withdraw from the interview at any time. After completion of data collection all girls were given health education talk on menstrual health and hygiene practices with help of Flipbook provided by Menstrual Hygiene Management Scheme under National Rural Health Mission. A pamphlet prepared from this flipbook was given to each girl.

Statistical Methods: Data was entered in Microsoft Excel sheet and analyzed using the software SPSS (version 16.0) and Open Epi version 3.01. Qualitative variables were described in terms of frequency and percentage. Quantitative variables were described in terms of mean and standard deviation. Crude odds ratio with 95% CI was used to test association between various socio-demographic factors and school absenteeism. P value less than 0.05 was considered as significant.

Ethical consideration: This study was part of MD thesis. The study protocol was approved by Institutional Research Committee as well as Institutional Ethics Committee of our institute dated 30-12-2022. (IEC/IIMSR/2023/02)

RESULTS

In the present study the majority adolescent girls were between 16-18 years of age, comprising 45.9%. The mean age of the students was 16.64 ± 1.4 years, with an age range from 14 to 19 years. 246(52%) girls were studying in private school. 369 (78%) participants were Hindu. Maximum number of adolescent girl students 182 (38.5%) belonged to Lower Class of socio-economic status according to updated modified Kuppaswamy socioeconomic status scale.¹⁴ (Table 1)

Majority of the participants 311 (65.8%) reported using hygienic methods such as sanitary napkins during menstruation. 347(73.4%) girls had access to sanitary pads in emergencies at school. Health education on menstrual hygiene management was provided in school to 359 (75.9%) girls. Study found that, 138 (29.2%) participants reported being absent from school during menstruation. Maximum number (79.7%) of girls were absent on first 2 days of period. (Table 2)

Among the reported reasons for school absence during menstruation, dysmenorrhea was the most prevalent cause, quoted by 51(37%) of the participants. Following dysmenorrhea, mother's restrictions were reported by 30 participants (21.7%), while fear of staining cloth and difficulty in changing pads in school were each cited by 18.8% and 13% respectively. Excessive bleeding was reported by 9.4% girls, and out of shame was told by 8.7%. The total percentage slightly exceeds 100% due to multiple responses provided by participants. (Table 2)

The table 3 depicts various factors influencing school absenteeism during menstruation among students. The type of school attended is a significant factor ($p = 0.009$) predicting school absenteeism. The students in government schools were more likely to be absent (34.8%) as compared to those in private schools (24%). Socioeconomic status showed a significant association with absenteeism ($p < 0.001$). Girls from lower socioeconomic backgrounds have higher absenteeism rates (41.8%) as compared to those from middle (28.6%) and upper (10.3%) socioeconomic statuses. Mother's education level was a significant factor associated with school absenteeism ($p < 0.001$). Students whose mothers were illiterate have higher absenteeism rates (44.3%) compared to those whose mothers have up to primary (29%) and above primary education (23.4%). The use of hygienic methods for absorption is significantly associated with lower absenteeism ($p = 0.012$). Adolescent girls using hygienic methods report less absenteeism (25.4%) than those who do not (36.4%). Provision of pads at school in emergencies showed significantly lower absenteeism ($p = 0.005$). Girls who reported access to pads at school in emergency situation had lower absenteeism rate (25.6%). Adolescent girls who received health education in schools had lower absenteeism rates (26.5%) as compared to those

who did not (37.7%). Health education on menstrual hygiene management (MHM) in school significantly associated with school absenteeism ($p = 0.021$).

Table 4 examines the factors contributing to school absenteeism during menstruation among adolescent schoolgirls. Girls older than 18 years have an OR of 1.283 ($p = 0.428$), suggesting they are 28.3% more likely to be absent, though this is not statistically significant.

Table 1: Sociodemographic characteristics of Adolescent girls (n=473)

Characteristics	Girls (%)
Age in years	
14-16	101 (21.4)
16-18	217 (45.9)
18 & above	155 (32.8)
Type of school	
Private	246(52)
Government	227(48)
Religion	
Hindu	369(78)
Muslim	90(19)
Other	14(3)
Socioeconomic status	
Upper	116(24.5)
Middle	175(37)
Lower	182(38.5)
Type of family	
Nuclear	318(67.2)
Joint	82(17.3)
Three generation	73(15.4)
Mother's education	
Illiterate	106(22.4)
Up to primary Level	93(19.7)
Above primary level	274(57.9)

Table 2: Frequency distribution of possible factors related to school absenteeism and reasons

Characteristics	Girls (%)
Use of hygienic method for absorption	
Yes	311(65.8)
No	162(34.2)
Provision of pads at school in emergency	
Yes	347(73.4)
No	126(26.6)
Health education on MHM in school	
Yes	359(75.9)
No	114(24.1)
School absenteeism	
Yes	138(29.2)
No	335(70.8)
Number of days absent per menstrual cycle (n=138)	
1-2 days	110(79.7)
3-4 days	20(14.5)
More than 4 days	8(5.8)
Reasons for absence during menstruation (n=138)	
Dysmenorrhea	51(37)
Mother's Restriction	30(21.7)
Fear of staining cloth	26(18.8)
Difficulty in changing pads in school	18(13)
Excessive bleeding	13(9.4)
Out of shame	12(8.7)

Table 3: Factors associated with school absenteeism during menstruation

Factors	School absenteeism		Crude OR	95% CI	P Value
	Yes (n=138) (%)	No (n=335) (%)			
Age					
14-16	31(30.7)	70(69.3)	-		0.705
16 & above	107(28.8)	265(71.2)	0.91	0.56 to 1.47	
Type of School					
Private	59(24)	187(76)	-		0.009
Government	79(34.8)	148(65.2)	1.69	1.13 to 2.52	
Religion					
Hindu	113(30.6)	256(69.4)	-		0.14
Muslim	24(26.7)	66(73.3)	0.82	0.49 to 1.38	
Other	1(7.1)	13(92.9)	0.17	0.02 to 1.35	
Socioeconomic status					
Upper	12(10.3)	104(89.7)	-		<0.001
Middle	50(28.6)	125(71.4)	3.47	1.75 to 6.85	
Lower	76(41.8)	106(58.2)	6.21	3.19 to 12.1	
Type of family					
Nuclear	94(29.6)	224(70.4)	-		0.607
Joint	26(31.7)	56(68.3)	1.11	0.65 to 1.87	
Three generation	18(24.7)	55(75.3)	0.77	0.43 to 1.39	
Mothers Education					
Illiterate	47(44.3)	59(55.7)	-		<0.001
Up to primary	27(29)	66(71)	0.51	0.28 to 0.92	
Above primary	64(23.4)	210(76.6)	0.38	0.23 to 0.61	
Use of hygienic method for absorption					
Yes	79(25.4)	232(74.6)	-		0.012
No	59(36.4)	103(63.6)	1.68	1.11 to 2.53	
Provision of pads at school in emergency					
Yes	89(25.6)	258(74.4)	-		0.005
No	49(38.9)	77(61.1)	1.84	1.19 to 2.84	
Health education on MHM in school					
Yes	95(26.5)	264(73.5)	-		0.021
No	43(37.7)	71(62.3)	1.68	1.07 to 2.62	

Table 4: Multivariate logistic regression analysis of parameters contributing toward school absenteeism during menstruation amongst adolescent schoolgirls

Category	P value	Adjusted Odds ratio	95% C.I.
Age group (Reference:14-16 years)			
16-18 years	.989	.996	.577 ± 1.719
>18 years and above	.428	1.283	.693 ± 2.376
Government school (Reference: Private)	.389	.796	.474 ± 1.337
Religion (Reference: Hindu)			
Muslim	.779	1.087	.609 ± 1.939
Other	.084	6.534	.779 ± 54.839
SES (Reference: Upper)			
Middle	.004	.342	.164 ± .714
Lower	.000	.202	.092 ± .444
Type of family (Reference: Nuclear)			
Joint	.512	.825	.464 ± 1.467
Three generation	.582	1.197	.631 ± 2.269
Mother education (Reference: Up to primary)			
Above primary	.798	1.077	.608 ± 1.908
Illiterate	.360	.732	.376 ± 1.426
No Hygiene methods (Reference: Yes)	.524	.861	.542 ± 1.366
No Provision of pads in emergency (Reference: Yes)	.101	.674	.421 ± 1.080
No Health education (Reference: Yes)	.324	.782	.480 ± 1.275

Regarding the type of school, students in government schools have an OR of 0.796 ($p = 0.389$), showing they are 20.4% less likely to be absent compared to those in private schools. SES emerges as a significant factor. Middle-class students have an OR of 0.342 ($p = 0.004$), meaning they are 65.8% less likely to be absent compared to upper-class students. Lower-

class students have an OR of 0.202 ($p < 0.001$), indicating they are 79.8% less likely to be absent. Regarding hygiene methods, students not using proper hygiene methods have an OR of 0.861 ($p = 0.524$), indicating they are 13.9% less likely to be absent. The provision of pads in emergencies shows students without this have an OR of 0.674 ($p = 0.101$),

making them 32.6% less likely to be absent. Health education shows that students without it have an OR of 0.782 ($p = 0.324$), meaning they are 21.8% less likely to be absent, which is not statistically significant. SES is a significant factor influencing school absenteeism during menstruation, with middle and lower SES students being significantly less likely to be absent.

DISCUSSION

The present descriptive study was conducted among school going adolescent girls studying in 9th to 12th standard classes in various government and private schools in the urban field practice area of a medical college in Lucknow. In our study, mean age of the participants was 16.64 ± 1.4 years. The results were similar to other studies done by Sangha NK et al.,¹⁵ and Akinreni T et al.,¹⁶ where mean age of participants was 16.86 ± 0.76 and 16.2 years respectively. It is also comparable to the study conducted by Janvekar SS et al.,¹⁷ where the mean age of the study participants was 16.5 years. The similarity in mean age among participants across studies may be due to the consistent age range of adolescent girls in secondary school settings. Highlighting the universality of this demographic characteristic. The study participants were predominantly Hindu comprising 78% in our study. This finding is in accordance with the study conducted by Krishnaiah BN et al., where 75.5% study participants were Hindu.¹⁸ In this study we observed 22.4% of the participants mothers were illiterate which is parallel to the finding of another study done by Bali S et al., where 27.7% mother were illiterate.⁹

Our findings showed that majority girls 65.8% were using hygienic methods such as sanitary napkins during menstruation. This finding is consistent with another research done by Singh A et al., where 66.8% girls were using sanitary napkins.¹⁹ In contrast to our finding Garg S et al.,²⁰ discovered that 84.4% participants exclusively used disposable sanitary pads. This difference may be attributed to variations in study settings. We found that 29.2% adolescent girls were absent from school during menstruation. Maximum number 79.7% of girls were absent on first 2 days of period. Several studies conducted across India showed percentage of school absenteeism during menstruation ranging from 30.25% to 50.6%.⁷⁻⁹ This variance may be due to difference in income levels, cultural settings, school infrastructure and time variations of the studies.

The present study revealed that dysmenorrhea was the most prevalent cause 37% of the total responses for school absence. Following dysmenorrhea, mother's restrictions were reported by 21.7% participants. Our findings are similar to studies done at Delhi, Bangladesh and Nepal.^{20,8,21,22} These Previous studies have also attributed dysmenorrhea to be the most important contributor to school absenteeism.

Furthermore, the consistent finding of dysmenorrhea as the primary cause of school absenteeism across studies suggests a biological basis for this association, highlighting the need for effective pain management strategies.

In present study positive association between school absenteeism and various sociodemographic factors like the type of school, socioeconomic status, mother's education level, access to hygienic menstrual products and health education was observed. These results are consistent with the studies conducted by Vashisht A et al.,⁸ and Van Eijk et al.⁵; these studies found significant association between school absenteeism and non-use of sanitary napkins. They also found that mother's education was significantly associated with the management of hygiene and the use of disposable sanitary napkins and hence school absenteeism. The variation in mothers' education levels and school absenteeism rates could be due to differences in socioeconomic status, cultural context, and access to resources, underscoring the importance of considering these factors in menstrual hygiene management. Another study carried out by Gupta M et al., revealed that school absenteeism was more among girls who belonged to low socioeconomic status, with uneducated mothers, who did not use sanitary napkins.²³ These findings were consistent with our study. The difference in findings between our study and others may be attributed to variations in study settings, cultural contexts, and time periods, emphasizing the need for context-specific interventions to address menstrual hygiene management.

CONCLUSION

The study reveals that menstruation-related school absenteeism remains a significant concern, with nearly one-third of girls missing school due to dysmenorrhea, restrictive societal norms, and inadequate menstrual hygiene management. Our findings confirm that socioeconomic status, mother's education, and access to hygienic products are critical determinants of school absenteeism. To address this issue, we recommend integrating comprehensive menstrual health education into school curricula and improving access to hygienic menstrual products. By doing so, we can mitigate the negative impact of menstruation on girls' education and empowerment.

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