Section: Community Medicine

Original Research Article

STUDY OF HYGIENIC PRACTICES DURING MENSTRUATION AMONG UNMARRIED ADOLESCENT GIRLS IN THE URBAN FIELD PRACTICE AREA

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Received *: 11/05/2025*
Received in revised form *: 03/07/2025*
Accepted *: 24/07/2025*

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DOI: 10.70034/ijmedph.2025.3.230

Source of Support: Nil,
Conflict of Interest: None declared

Int J Med Pub Health
2025; 15 (3); 1240-1245

ABSTRACT

Background: Menstruation is a normal physiological phenomenon however, it is still considered taboo leading to poor menstrual hygiene in low resource areas. "Young girls are poorly prepared when they reach menarche because they are ignorant of what menstruation is, which results in the practice of unhygienic menstrual practices that may lead to RTIs and interrupt girls' school attendance". This study aimed to explore the practices of menstrual hygiene and to find association of sociodemographic variables and prior exposure with hygienic practice among unmarried adolescent girls residing in the urban slum community.

Materials and Methods: A cross-sectional, community-based study was carried out among 1,064 unmarried adolescent girls aged 10–19 years, who had experienced menarche, in the urban field practice area of a medical college. Data was obtained using a pretested questionnaire in an interviewer-administered manner. Data was analyzed with Epi Info software. Associations were built with chi-square tests and multivariate logistic regression analysis was performed to identify independent predictors of pad use. A two-tailed p-value of <0.05 indicated statistical significant.

Results: Of all participants, 70.2% used sanitary pads, 16.5% used cloth and 13.3% reported using both. As high as 87.5% of them bathed daily, during menstruation, however 12.5% did not bath daily, with only 16.6 % of all women using soap and water to clean the genitals while 1.8% used antiseptic solutions. There were marked associations between sanitary pad usage and religion, socioeconomic status, educational status of mother and participant and prior awareness about menses (all $P < 0.001$). Mother's education, SES and previous exposure were independent predictors of sanitary pad utilization in multivariate analysis ($p < 0.05$).

Conclusion: Although menstrual hygiene practices among adolescent girls in the study area were moderately adequate, critical gaps remain in genital hygiene and disposal methods. Educational and socioeconomic factors play a significant role in shaping hygienic practices. Targeted awareness programs involving families and schools are essential to promote safe and hygienic menstrual behaviours in adolescent girls.

Keywords: Menstrual hygiene, Adolescent girls, Sanitary pad, Socioeconomic status, Maternal education, Urban slums, Prior awareness.

INTRODUCTION

Puberty is an important period of maturation in physical, emotional, and psychological status. The word "adolescent" is borrowed from the Latin word adolescere, which signifies "to grow to maturity".[1] The World Health Organization (WHO) declares adolescence as the period between 10 and 19 years old which is a significant time where people experience distinct physical, mental, and emotional development.[2] There are an estimated 1.2 billion adolescents worldwide who form about 16% of the world population.[3] In India, according to the 2011 Census, the population of adolescents is 20.9% of the total population and Maharashtra contributes 8.44% to the national adolescent population.[4]

The health of young people is inextricably linked to the development of young children; and is influenced by social determinants such as poverty, education and cultural norms. Adolescence, and menarche in particular, constitute a critical stage of development for adolescent girls, as this marks the age of reproductive competence.[5,6] But for many girls in India, this transition is a distressing one, due to the general unpreparedness, limited knowledge, and enduring social stigma about menstruation.

Menstrual hygiene management (MHM) is described as using clean material to absorb or collect menstrual blood in privacy, changing the material as often as necessary, and having access to soap and water to wash and facilities to dispose of used materials.[7] Menstrual hygiene management practices are associated with reproductive tract infections (RTIs), urinary tract infections (UTIs), and absence from school.[8,9] These challenges are even more pronounced in urban poor areas where access to clean products and sanitation facilities is scarce.

Cultural barriers, social taboo, absence of freely available communication on menstruation leads in misinformation leading to unhygienic practice among adolescent girls. Different prevalence of menstrual hygiene practices among adolescents, adolescents currently practicing menstrual hygiene management (MHM) at various sites, is reported in studies,[10-12] and the barrier of menstrual hygiene are Multifactorial and these depends on multiple factors such as socio-demographic including educational status, Religion, Family type and Socioeconomic level.[13,14] The role of mothers, teachers, peers and media is different on the knowledge of menstruation for adolescent girls.[10,13,14]

The current study was carried out in an urban field practice area to determine menstrual hygienic practices of unmarried adoloscent girls and to study the influence of various socio demographic variables and prior awareness on the menstrual hygiene practices. By illuminating these lacunae and patterns, the investigation seeks to inform targeted interventions and policy development for adolescent reproductive health in disadvantaged urban areas.

MATERIALS AND METHODS

The study was a community based cross-sectional study conducted in the urban field practice area of a tertiary care teaching institute in the colonies situated under the field practice area of Urban Health Training Centre (UHTC) among slum dwellers. The research was a part of a wider research program for determining the prevalence of menstrual disorders among adolescent girls. The study participants were unmarried girls, aged between 10 to 19, who have started to menstruate (menarche), and were permanent residents of the study site for more than six months, which was defined as a family residing in the area. Girls who have not yet achieved menarche or are unwilling to participate were excluded from this study.

Sample size was estimated based on Cochrane's formula using the prevalence of menstrual disorders of 9% from DLHS-4.15 A sample size of 1,064 participants was then calculated using 95% confidence interval, a margin of error of 20% and an additional 5% to compensate for non-response. The study colonies were selected by simple random sampling with the method of lottery. In each of the selected colony, eligible adolescent girls were identified by house to house survey, selected according to inclusion criteria and enrolled after approval and verbal assent and informed consent of guardians where ever it was applicable.

Data were collected through a pre-tested, interviewer administered structured questionnaire in the local language. The questionnaire contained questions about demographics, menstrual history, knowledge of menses before menarche and hygiene practices during menses. Operational definitions were developed that were used to refine terms, including adolescent (10–19 years of age), menarche (onset of the first menstrual period) and menstrual hygiene (use of sanitary pads, appropriate cleaning and disposal).

Ethical approval was granted by the Institutional Ethics Committee before initiation of the study. All information was entered and analyzed through Epi Info. Frequencies and percentages were used to report descriptive statistics. The relationships of categorical variables were tested using the chi-square test and the independent predictors of the hygienic practices were studied using multivariate logistic regression analysis. P-values < 0.05 were considered statistically significant.

RESULTS

A thousand sixty-four unmarried adolescent girls who attained menarche in the age group of 10-19 years were included in the study. The overall mean age of the study participants was 16.15 ± 2 years

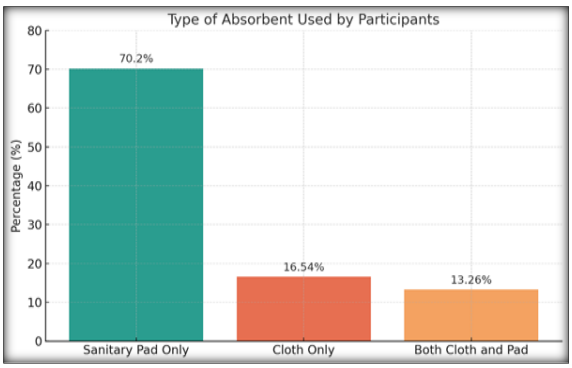
with the majority being late adolescent (46.9%), followed by the mid adolescent (42.01%) and early adolescent (11.09%). Majority (80.92%) of the participants were from the middle socioeconomic class according to Modified BG Prasad classification. The mean age of menarche was at 12.8 ± 1.25 years (range 10 to16 years). Approximately 61.56% of respondents had some pre-existing knowledge about menstruation before menarche, and mothers (46.87%) were found to be the most common source of information, followed by teachers (43.81%). The findings are presented in the next section, covering menstrual hygiene behaviour including absorbent use, hygiene practices, and disposal, as well as their associations with Sociodemographic factors.

Table 1: Menstrual Hygiene Practices Among Adolescent Girls (n = 1064)

Practice During Menstruation	no	Frequency (%)
Type of Absorbent Used		
Sanitary Pad Only	747	70.20%
Cloth Only	176	16.54%
Both Cloth and Pad	141	13.26%
Frequency of Change per Day		
Once	151	14.20%
Twice	701	65.88%
Three or More Times	212	19.92%
Bathing Practice		
Regular	931	87.50%
Irregular	133	12.50%
Genital Cleaning Material		
Water Only	868	81.58%
Soap and Water	177	16.64%
Antiseptic Liquid	19	1.78%
Frequency of Genital Cleaning		
Once per Day	312	29.32%
Two or More Times per Day	752	70.68%
Disposal of Used Absorbent*		
Routine Waste	787	73.96%
Burning	150	14.09%
Thrown in Open Ditch	97	9.11%
Washed and Reused	58	5.45%

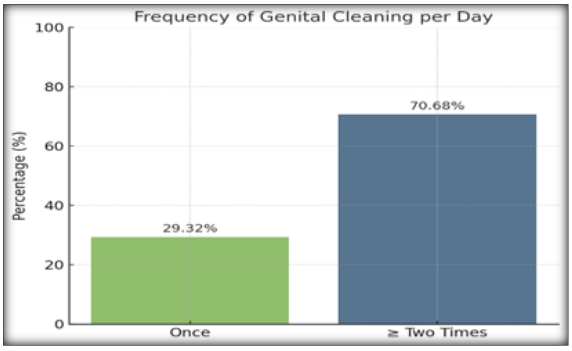
***Multiple response**

The menstrual hygiene practices of the 1,064 adolescent girls who participated in the study is shown in Table 1. Only sanitary pads was the most commonly used method by 70.20% while 16.54% used cloth and 13.26% used both cloth and pads during menstruation.



Graph 1: Type of Absorbent Used by Participants

As for absorbent changing frequencies, 65.88% of girls changed twice/day, 19.92% three times or more times/day and 14.20% changed only once daily. 87.5% of respondents bathed routinely during menstruation. Regarding genital hygiene, nearly all girls (81.58%) washed their genitals with water only, 16.64% used a combination of soap and water, and a negligible number of girls (1.78%) used antiseptic liquid. A 70.68% washed their genital sites more than twice day; but 29.32% washed one time a day.



Graph 2: Frequency of Genital Cleaning per Day

The used absorbents were disposed by 73.96% of them into normal household waste, 14.09% burnt them, 9.11% disposed directly into open drains or ditches and 5.45% washed and re-used them. These results demonstrate that relatively reasonable hygienic practices occur; although some issues of genital cleaning material and absorbent disposal remained.

Table 2: Association Between Sociodemographic Variables and Use of Sanitary Pad

Variable	Category	Sanitary Pad Used	Sanitary Pad Not Used	Total	χ^2 Value	p-value
Age Group (Years)	10–14	78	40	118	**5.7**	0.057
	15–17	301	146	447		
	18–19	368	131	499		
Religion	Hindu	454	123	577	**57.2**	0.00001
	Muslim	237	179	416		
	Others	56	15	71		
Socioeconomic Status	Upper	10	4	14	**31.0**	0.00001
	Middle	630	231	861		
	Lower	107	82	189		
Mother's Education	Illiterate	98	52	150	**25.5**	**0.0003**
	Primary	276	152	428		
	Secondary	71	14	85		
	Higher Secondary	200	78	278		
	Graduate & above	102	21	123		
Participant's Education	Primary	9	10	19	**42.4**	0.00001
	Secondary	138	70	208		
	Higher Secondary	287	168	455		
	Intermediate and Graduate	313	69	382		

Table 2 depicts the relationship between different Sociodemographic factors with the usage of sanitary pads by adolescent girls. Religious (p = 0.00001), socioeconomic (p = 0.00001), mother's education (p = 0.0003) and participant's own education (p = 0.00001) also demonstrated a statistically significant association with higher levels of sanitary pads use, showing better education through either parent was related to greater use of sanitary pads. However, neither relationship was statistically significant (p = 0.057) indicating that age independently was not significantly related to product use. These results emphasize the role of social and educational variables in the enhancement of menstrual hygiene.

Table 3: Association Between Religion and Mother's Education with Genital Cleaning Practices

Variable	Cleaned with Soap/Antiseptic (n=196)	Not Cleaned with Soap/Antiseptic (n=868)	Chi-square (χ^2)	p-value
Religion	Hindu: 104, Muslim: 72 Others:20	Hindu: 473, Muslim: 344 Others:51	5.2	0.07
Mother's Education	Illit.: 20, Primary: 68, Secondary+: 108	Illit.: 130, Primary: 360, Secondary+: 378	9.08	0.00009

Table 3 displays the relationship of religion and mother's education with the practice of cleansing genitals with soap and water or antiseptic during menstruation. Religion status among this population was not significantly associated with genital washing practices (p = 0.07), indicating religious belief played no role in the choice of cleansing agent use. Nevertheless, maternal education was strongly associated (p = 0.00009), with girls whose mothers were more educated experiencing a higher odds of hygienic genital cleaning. This highlighted the importance of maternal education on effective menstrual hygiene practices of adolescent girls.

Table 4: Association of Prior Awareness of Menstruation with Hygienic Practices

Hygienic Practice	Prior Awareness: Yes (663)	No (401)	Chi-square (χ^2)	p-value
Use of Sanitary Pad	483	264	5.5	0.01
Cleaning with Soap/Antiseptic	120	76	0.07	0.70
Disposal with Routine Waste	494	274	4.4	0.03

Table 4 compares previous knowledge about menstruation with different hygienic practices among adolescent girls. A significant association was found between previous knowledge and use of sanitary towels (p = 0.01) and with disposing used absorbents as continuous waste (p = 0.03). This may also show that knowledge of menstruation before menarche predisposed girl they were aware of mensturatioin before mensuration more to cultivate hygienic behaviour. But no such relationship was observed between previous knowledge and washing genital with soap or antiseptic (p = 0.70), where only imparting knowledge may not change all components of menstrual hygiene.

Table 5: Multivariate Logistic Regression – Predictors of Sanitary Pad Use

Independent Variable	Odds Ratio (95% CI)	p-value
Mother's Education	1.62 (1.23–2.14)	0.0006
Socioeconomic Status	1.94 (1.39–2.70)	0.0001
Prior Awareness	1.37 (1.04–1.81)	0.0232

Participant's Education	2.09 (0.82–5.32)	0.1203

Table 5 shows the adjusted odds of factors that predict use of sanitary pads among adolescent girls as estimated by multivariate logistic regression analysis. The results indicated that mother's education (OR 1.62; 95% CI: 1.23–2.14; p = 0.0006), socioeconomic status (OR 1.94; 95% CI: 1.39–2.70; p = 0.0001), and prior knowledge of menstruation (OR 1.37; 95% CI: 1.04–1.81; p = 0.0232) were significant factors predetermined. Hence girls from high socioeconomic status; mothers educated and those with prior knowledge of menstruationare all significantly associated with use of sanitary pads. Although the participant's own education displayed an even greater odds ratio (OR = 2.09), statistically it was not significant (p = 0.1203). This underscores the stronger effect of parental/household level than individual level of education on menstrual hygiene practices.

DISCUSSION

This research contributes important knowledge on menstrual hygiene management among unmarried adolescent females in an urban slum context. The results show that although 70.2% of the women used sanitary pads, a large proportion also reported using cloth (16.5%) or a combination of cloth and other (13.3%). Our findings are also corroborated by an earlier study conducted in India that revealed, 43% of rural and 68% of urban women used hygienic menstrual products as per the data from the National Family Health Survey-5.[16]

The study has found that 81.6% of respondents cleaned their genital area during menstruation only with water, in 16.6% of cases soap and water, and in 1.8% of cases antiseptics were used. This indicates a deficiency in good menstrual hygiene, which may be as a result of poor awareness or access to suitable items. Comparable results were found in the study of Shukla et al in Uttar Pradesh, where 50 % girls washed their genitalia with water only at the time of menstruation.[17] Poor hygiene can lead to predisposition of girls to urinary and reproductive tract infections during their adolescent age.[18]

Ways of disposing of used incandescent light bulbs are also problematic. Most (73.96%) girls disposed of the used absorbents with household waste but a significant proportion utilized techniques such as burning (14.09%) or throwing into open ditches (9.11%) and 5.45% washed and reused the absorbents. Such practices represent both environmental and health risks, and underscore the requirement for better sanitation facilities and knowledge. A multi-national analysis of Van Eijk et al. pointed out that inadequate management of menstrual waste is a serious public health concern in low-income countries.[19]

The use of sanitary pads was also to social status and demographic variables like religion, socioeconomic status, education of both the participant and her mother. This finding is in line with previous research from Tamil Nadu, and Uttar Pradesh in which maternal education and family income were determinants influencing menstrual hygiene practices.[19,20] Furthermore, in our study a multivariate logistic regression analysis revealed that the mother's education, socioeconomic status, and previous information were independent predictors of sanitary pad use, as also observed in studies carried out in Rajasthan and Bihar.[21,22]

Notably, perceiving knowledge of menstruation prior to menarche was strongly associated with use of pads and with safe disposal, but less so with soap and antiseptic for genital washing. This implies that awareness messages should not just target menstruation onset but promote appropriate methods of hygiene. For example, a cluster randomized trial conducted in Uganda showed that MHM education in schools significantly increased knowledge and hygienic practices among adolescent girls.[23]

Our findings lend credence to the proposition that educating and imparting knowledge to young girls and enabling them to have information prior to onset of menarche could promote appropriate menstrual hygiene behavior. This is consistent with calls made by UNICEF and the Ministry of Health and Family Welfare, Government of India, to mainstream menstrual hygiene management (MHM) into school health programmes.[24]

CONCLUSION

This paper draws attention to the progress as well as pressing gaps in menstrual hygiene practices of unmarried adolescent girls living in urban slums. Many used pads and had a regular schedule of washing and changing of an absorbent, however a large gap was observed in genital cleaning and disposal of menstrual waste in a safe manner. The study shows that adolescent girls surveyed are still relying on water alone for genital cleaning and 26% are still using cloth or a combination of cloth and something that absorbs speaks to the need for better education and access to hygiene facilities. Maternal education, socioeconomic status, and awareness of menstruation were found to be strong independent predictors of use of sanitary pad use, highlighting the role of family and social milieu in shaping attitudes and practices related to menstruation among adolescents. These findings highlight the necessity for responsive menstrual health education interventions with parents and school based strategies to ensure safe and dignified menstrual practices for adolescent girls in disadvantaged urban settings.

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