Section: Community Medicine

Original Research Article

EVALUATION OF MENSTRUAL HYGIENE PRACTICES AMONG ADOLESCENT GIRLS AGED BETWEEN 15-19 YEARS IN HAGARE RURAL FIELD PRACTICE AREA OF TERTIARY CARE CENTRE: A CROSS-SECTIONAL STUDY

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ABSTRACT

Background: Menstrual hygiene is an essential component of adolescent health, particularly in rural settings where cultural stigma and lack of education limit access to safe practices. Despite menstruation being a natural biological function, misconceptions and poor menstrual hygiene practices are still prevalent among adolescent girls. **Objectives:** To evaluate menstrual hygiene awareness and practices among school-going adolescent girls aged 15–19 years in the Hagare rural field practice area of a tertiary care center.

Materials and Methods: A community-based cross-sectional study was conducted among 400 school-going adolescent girls selected through Probability Proportionate to Size (PPS) sampling. Data were collected via a structured, validated questionnaire. Descriptive and inferential statistics were applied using SPSS version 29.0.2.0.

Results: Of the 400 participants, 76.75% had prior information on menstrual hygiene, predominantly from family and school. Sanitary pads were the most commonly used absorbent (82.25%). While 87.5% maintained genital hygiene, only 43.5% correctly identified the uterus as the source of menstrual blood. A statistically significant association was found between sanitary pad usage and age (p=0.013) and education level (p=0.0296). No significant associations were observed with mother's education, type of school, or socioeconomic-status.

Conclusion: The study reveals encouraging use of hygienic practices but highlights persistent knowledge gaps. Comprehensive menstrual health education programs are necessary to dispel myths and ensure access to safe hygiene facilities.

Keywords: Menstrual hygiene, adolescent girls, sanitary pads, Menstrual practices, awareness.

INTRODUCTION

Menstruation is a natural process that occurs in women of reproductive age, involving the periodic shedding of the uterine lining along with blood and other materials.[1] In many societies, menstruation is still seen as impure. This stigma, along with household restrictions placed on girls and women during their periods, has led to negative attitudes that often go unspoken.[2] Managing menstrual hygiene is a major challenge for adolescent girls in low- and middle-income countries, especially in schools. Many of the girls feel uncomfortable about the menstruation not because they are ashamed of it but because they lack the necessities like clean water, proper sanitation, and safe spaces. Lack of education on puberty and different menstrual products increases the stress and confusion for girls.[3]

Poor menstrual hygiene does not only cause discomfort but also serious health issues among the girls. Infections like reproductive tract infection, bacterial vaginosis and yeast infection are one among them. Studies from different parts of India have shown that girls who do not have proper knowledge on menstrual hygiene they are the more likely to suffer from these health problems. Girls from higher socio-economic backgrounds tend to have better access to hygiene products and information which keeps them healthier. Recent research also found a high prevalence of RTIs, with abnormal vaginal discharge being the most common symptom.[4]

For many adolescent girls, managing their period is a challenge. Poor menstrual hygiene can affect not just their physical health, but also their mental well-being, confidence, social life, and school performance. That's why menstrual health and hygiene among adolescent girls is a serious public health issue that needs attention from policymakers in low- and middle-income countries like India5. Therefore, this study is done to assess the knowledge of hygienic practices during menstruation and to estimate the different menstrual hygiene methods adapted among the adolescent girls in Hagare Rural field practice area.

MATERIALS AND METHODS

Study Design and Setting

A community-based cross-sectional study was conducted in Hagare, a rural field practice area under the Department of Community Medicine, Hassan Institute of Medical Sciences.

Sample Size and Sampling Technique

Based on a 49.8% prevalence of menstrual hygiene practices among young Indian women[6], Using the formula $n=4pq/d^2$, with a margin of error of 5%, the sample size was determined to be 400. The Rural Health Training Centre oversees eight subcentres, namely Hagare, Hanike, Hulgundi, C. Hosahalli, Mallapura, Ibbedu, Andale, and Sankenhalli. PPS sampling was applied and four subcentres were selected: Hagare, Hulgundi, Mallapura, and Sankenhalli.

Inclusion/Exclusion Criteria

Inclusion

- School-going adolescent girls aged 15–19 years

Exclusion

- Girls who had not attained menarche
- Gave incomplete responses

Data Collection Tool

A structured questionnaire developed from prior validated tools, assessed demographics, menstrual knowledge, hygiene practices, and school environment. Interviews were conducted in Kannada during house visits. One to One Interview was done. Only one visit was made to each participant's household.

Ethical Considerations

Institutional ethical approval was obtained. Verbal informed consent was taken. Anonymity and confidentiality were maintained. Participants received post-survey health education on menstrual hygiene.

Statistical Analysis: Data were entered into Microsoft Excel and analysed using SPSS version 29.0.2.0. Descriptive statistics such as percentages and proportions were calculated. The Chi-square test was used to assess the association between different variables, and a p-value of <0.05 was considered statistically significant.

RESULTS

The majority of the participants were aged 15–16 years (58.25%), while the remaining 41.75% were between 17–19 years. Most of the girls belonged to nuclear families (64.75%), and a substantial number resided in Hagare (39.25%) followed by Sankenhalli (23.25%), Mallapura (25.25%), and Hulgundi (12.25%). Regarding education, over half had completed up to 10th standard (54.75%), with fewer completing 12th (38.25%) or a degree (6.5%). Nearly 80% of the students attended government schools, and a similar proportion (79.5%) had mothers who were educated. Socioeconomically, more than half were from lower-class families (54%), while only a small fraction belonged to upper middle-class backgrounds (1.75%) (Table 1).

Table 1: Sociodemographic Factors

Variable	Category	Frequency	Percentage (%)
Age	**15–16 years**	233	58.25%
	17–19 years	167	41.75%
Village	**Hagare**	157	39.25%
	Mallapura	101	25.25%
	Hulgundi	49	12.25%
	Sankenhalli	93	23.25%
Type of Family	**Nuclear**	259	64.75%
	Joint	141	35.25%
Education	**No education**	2	0.50%
	10th	219	54.75%
	12th	153	38.25%
	Degree	26	6.50%
Type of School	**Government**	317	79.25%
	Private	83	20.75%
Mother's Education	**Educated**	318	79.5%

	Not educated	82	20.5%
Socioeconomic status	**Upper middle**	7	1.75%
	Lower middle	62	15.50%
	Upper lower	115	28.75%
	Lower	216	54.00%

Most girls reported attaining menarche between 12–13 years of age (67%), followed by 14–16 years (18.25%) and 10–11 years (14.75%). 76.75% participants had prior information regarding menstrual hygiene, whereas 23.25% had no information (Table 2).

Table 2: Menstrual Health Awareness

Variable	Category	Frequency	Percentage (%)
Age at Menarche	**10–11 years**	59	14.75%
	12–13 years	268	67.0%
	14–16 years	73	18.25%
Prior information on menstrual hygiene	**Yes**	307	76.75%
	No	93	23.25%

Understanding of menstruation varied widely. Only 43.5% correctly identified the uterus as the source of menstrual blood, while the remaining either selected incorrect options like the vagina or abdomen (6.5% each) or responded with "don't know" (43.5%). When asked about the cause of menstruation, just 41.75% cited hormones, while over half (54.75%) were unaware of the cause. Most participants reported bleeding duration of 2–5 days (81%), and 75% indicated menstrual cycles lasting more than 35 days, suggesting awareness of typical patterns but also possible irregularities in a significant proportion (Table 3).

Table 3: Knowledge and Practice

Variable	Category	Frequency	Percentage (%)
Source of Blood during menstruation?	**Uterus**	174	43.5%
	Vagina	26	6.5%
	Abdomen	26	6.5%
	Don't know	174	43.5%
Cause of menstruation	**Hormone**	167	41.75%
	Disease	14	3.5%
	Don't know	219	54.75%
Bleeding duration	**< 2 days**	12	3.0%
	2–5 days	324	81.0%
	> 5 days	64	16.0%
Menstrual cycle regularity	**< 20 days**	16	4.0%
	> 35 days	300	75.0%

Sanitary pads were the most commonly used menstrual hygiene product (82.25%), with a minority using cloth (5.75%) or a combination of cloth and commercial pads (11.5%). Very few reported using menstrual cups (0.5%) and no body used tampons or menstrual panties. Among cloth users, 84.1% reported cleaning practices deemed adequate. Most participants changed their absorbent materials two to three times daily (53.5% and 34.75%, respectively). Disposal practices varied, with just over half using dustbins (54.75%) and others opting to burn (37.25%) or bury (7.25%) the waste. Bathing once (48%) or twice daily (35.75%) was common, and the vast majority maintained genital hygiene (87.5%). In schools, 78% reported access to a private place for changing, though 22% did not (Table 4).

Table 4: Menstrual Hygiene Practice

Variable	Category	Frequency	Percentage (%)
Soakage material used	**Cloth**	23	5.75%
	Sanitary pad	329	82.25%
	Cloth & sanitary pad	46	11.50%
	Menstrual cup	2	0.50%
	Tampon	0	0.0%
	Menstrual panty	0	0.0%
If using cloth, how do you clean it?	**Adequate**	58	84.1%
	Not adequate	11	15.9%
Frequency of changing material	**1 time/day**	12	3.0%
	2 times/day	214	53.5%
	3 times/day	139	34.75%
	4 times/day	35	8.75%
Disposal of material	**Dustbin**	219	54.75%
	Burn	149	37.25%

	Burial	29	7.25%
	Reuse	3	0.75%
Baths during menstruation	**1 time/day**	192	48.0%
	2 times/day	143	35.75%
	3 times/day	65	16.25%
Genital hygiene during menstruation	**Yes**	350	87.5%
	No	50	12.5%
Place to change in school	**Yes**	312	78.0%
	No	88	22.0%

Awareness of menstrual hygiene showed borderline or no significant associations with most demographic variables. Girls aged 17–19 years showed slightly higher awareness (81.4%) than those aged 15–16 years (73.4%), though this was not statistically significant (p = 0.0602). However, socioeconomic status had a significant association with awareness (p = 0.0467), with girls from lower middle and upper lower classes reporting better awareness than those from upper middle and lower socioeconomic groups. Other factors like education level, mother's education, type of school, and family type did not show statistically significant associations (Table 5).

Table 5: Association of Variables with Awareness of Hygiene Practice

Variable	Category	Yes (n=307)	No (n=93)	χ^2 value	p-value
Age	**15–16 years**	171 (73.4%)	62 (26.6%)	3.5296	0.0602
	17–19 years	136 (81.4%)	31 (18.6%)		
Type of Family	**Nuclear (n=259)**	205 (79.2%)	54 (20.8%)	2.3728	0.1234
	Joint (n=141)	102 (72.3%)	39 (27.7%)		
Education level	**No education (n=2)**	2 (100.0%)	0 (0.0%)	6.7878	0.0789
	10th (n=219)	158 (72.1%)	61 (27.9%)		
	12th (n=153)	124 (81.0%)	29 (19.0%)		
	Degree (n=26)	23 (88.5%)	3 (11.5%)		
Type of School	**Government (n=317)**	240 (75.7%)	77 (24.3%)	0.9263	0.3358
	Private (n=83)	67 (80.7%)	16 (19.3%)		
Mother's Education	**Educated (n=318)**	250 (78.6%)	68 (21.4%)	3.028	0.0818
	Not educated (n=82)	57 (69.5%)	25 (30.5%)		
Socio-economic status	**Upper middle (n=7)**	4 (57.1%)	3 (42.9%)	7.9635	0.0467
	Lower middle (n=62)	52 (83.9%)	10 (16.1%)		
	Upper lower (n=115)	95 (82.6%)	20 (17.4%)		
	Lower (n=216)	156 (72.2%)	60 (27.8%)		

DISCUSSION

The study of 400 adolescent girls from Hagare rural area showed high sanitary pad use (82.25%) and good hygiene practices, with 87.5% maintaining genital cleanliness and daily bathing during menstruation. The findings of this study align with existing literature on menstrual hygiene practices among adolescent girls in rural India. A significant proportion of participants demonstrated awareness of menstrual hygiene, with 76.8% having prior knowledge, primarily sourced from family members and schools. This is consistent with a study conducted in rural Visakhapatnam, where 48.4% of adolescent girls were informed about menstruation before menarche, with mothers being the primary source of information.[11]

The high usage of sanitary pads (82.3%) among participants reflects a positive trend towards hygienic practices. Similar results were observed in a study done from Coimbatore district, Tamil Nadu, where 94.5% of college-going girls reported changing pads or cloths before bedtime, and 94.1% practiced washing with water during menstruation.[12] However, the continued use of cloth or a combination of cloth and pads by few of participants indicates the need for increased accessibility and affordability of sanitary products.

Even after promoting better knowledge on menstrual hygiene practice, misconceptions still persist. Only 43.5% of participants correctly answered the uterus as the source of menstrual blood. This gap in knowledge shows findings from a study in Ahmedabad, where a majority of participants lacked understanding about the source and cause of menstrual bleeding.[13] Such misconceptions can increase stigma and hinder the adoption of proper menstrual hygiene practices.

Cultural and social restrictions during menstruation remain prevalent. In current study, 78% of participants reported access to changing facilities in schools, yet restrictions on activities during menstruation were common. A study done in Navi Mumbai's ashram schools showed that 95% of girls were prohibited from attending temples, and 63% were restricted from participating in sports during menstruation.[14] These findings showed the influence of cultural norms on the daily lives of adolescent girls during their menstrual cycles.

Current study showed, 82% of participants reported using sanitary pads, 6% used cloth, and 12% used a combination of both. Similarly, another study conducted by Yaliwal RG et al. in North Karnataka found that 70.7% of women used sanitary pads,

while 12.7% used cloth and 15.3% were using both.[15]

This study found an association between education levels and younger age groups in the adoption of hygienic menstrual practices. Similar study done by Kansal S et al. observed that respondents with higher education were more likely to adopt hygienic menstrual methods.[16]

The association between education level, socioeconomic status, and hygienic practices observed in this study emphasizes the importance of targeted interventions. Enhancing menstrual hygiene education, particularly in rural and underserved areas, is crucial. Programs should focus on dispelling myths, promoting accurate knowledge, and ensuring the availability of sanitary products and adequate facilities in schools.

CONCLUSION

This study shows that moderate to good level of menstrual hygiene practices are seen among adolescent girls in the rural Hagare field practice area. Most of participants reported using sanitary pads and maintaining personal hygiene, demonstrating a shift towards better menstrual health management. However, few knowledge gaps persist, especially regarding the biological source and cause of menstruation. Few girls lack the knowledge on menstrual hygiene practice and it was observed that the factors like age and education were significant factors associated with maintaining good hygiene practices among these adolescent girls.

Recommendation

Implement regular menstrual hygiene education sessions in schools, particularly focusing on biology and safe practices. Increase awareness campaigns at the community level through ASHA workers and local health staff to dispel myths and promote healthy practices. Ensure availability of affordable sanitary products through school programs and government schemes. Improve school infrastructure by ensuring private, clean spaces for girls to manage menstruation. Encourage inclusion of menstrual health education in the school curriculum from middle school onwards.

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