

Original Research Article

Menstrual health management: effect on learning outcomes on young adolescent girls: a case study of Sub-District Bijbehara

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ABSTRACT

Background: Menstrual hygiene management (MHM) is an important component of adolescent health and has a direct influence on school participation and learning outcomes among adolescent girls. However, inadequate awareness, limited access to sanitary products, and poor sanitation infrastructure in schools often create barriers that affect girls' comfort, dignity, and educational engagement.

Methods: This study was conducted in 26 Government schools of Educational Zone Bijbehara (Jammu and Kashmir). Data were collected from Heads of Institutions (HOIs) to assess the prevailing status of MHM in school settings, focusing on awareness initiatives, availability of sanitary products, infrastructural facilities, waste disposal mechanisms, and training received by school leadership regarding menstrual health.

Results: The findings reveal a mixed scenario of progress and persistent gaps. While 84.6% of schools had conducted awareness programmes on menstrual hygiene, only 38.5% reported availability of sanitary pads, and merely 3.8% had functional incinerators. Separate toilets for girls (96.2%) and running water (100%) were largely available; however, only 3.8% of schools reported adequate lighting in toilets. Nearly half of the schools lacked proper sanitary waste disposal systems, and vending machines for sanitary pads were almost absent. A significant capacity gap was observed as only 11.5% of HOIs had received formal training on menstrual health. Additionally, 50% of schools did not track absenteeism related to menstruation or evaluate the impact of MHM awareness on attendance.

Conclusions: Strengthening MHM in schools is essential for safeguarding the health, dignity, and educational participation of adolescent girls. A coordinated, multi-sectoral approach focusing on infrastructure, training, product availability, and systematic monitoring is necessary to improve menstrual health and promote educational equity.

Keywords: Menstrual hygiene, Adolescent health, Education, Sanitation, School attendance

INTRODUCTION

Adolescence is an important stage of life marked by major physical, emotional, and psychological changes. One of the most significant events during this period is the onset of menstruation (menarche), which indicates reproductive maturity and requires proper hygiene awareness.¹ Although menstruation is a natural biological process, it

continues to be surrounded by stigma, taboos, and misinformation, especially among school-going adolescent girls.² These socio-cultural barriers often negatively affect girls' health, confidence, and participation in education.

Poor menstrual hygiene practices can result in serious health problems such as reproductive tract infections, UTI,

pelvic inflammatory disease, and even infertility in severe cases.^{3,4} Research shows that girls from rural and low socio-economic backgrounds frequently use unsafe materials like old cloths/fail to change sanitary products regularly, increasing risk of infections.^{5,6}

Several studies in India and other countries reveal that many girls are unaware of menstruation before their first period. Most information is received from mothers, peers, or media rather than formal school education.^{7,8} A study at a Government Women's College in Jammu reported that while many girls followed satisfactory practices, knowledge levels varied according to socio-demographic factors such as age, religion, marital status, and source of information.⁹ The absence of structured menstrual education in schools further worsens the situation.¹⁰ As a result, many girls experience fear, shame, and confusion at menarche instead of confidence.¹¹ A comprehensive study across educational institutions found major gaps in school health systems with 61.9% schools lacked functional health teams, 65.8% had water purification issues, and 73.2% did not have adequate menstrual hygiene facilities.¹² However, over 90% schools conducted awareness programmes on personal hygiene and related issues.

Evidence shows that community education and school-based MHM programmes can improve awareness and practices.^{6,13} The present study therefore assesses awareness, practices, and challenges related to MHM among adolescent girls in Educational Zone Bijbehara, aiming to strengthen support systems and reduce stigma.

METHODS

This study is a cross-sectional descriptive study conducted in educational institutions of zone Bijbehara Anantnag (Kashmir Division) to assess the status of MHM in school settings.

Selection criteria

The study included Government schools (Middle Schools, high schools and higher secondary schools) located within Educational Zone Bijbehara of District Anantnag. Schools were selected to assess the status of MHM facilities, awareness initiatives, and related practices in school settings. Information was obtained from the HOIs of the selected schools.

Inclusion criteria

Government schools within Educational Zone Bijbehara that had adolescent girl students enrolled and where the HOIs consented to participate in the study were included.

Exclusion criteria

Private schools, schools located outside Educational Zone Bijbehara, and schools where the HOIs did not provide

consent or where complete information was not available were excluded from the study.

Sample size

A total of 26 (Twenty-six) educational institutions were selected to capture a representative understanding of menstrual health management practices across diverse school settings within the zone.

Study period

The study was conducted over a period of three months, from May 2025 to July 2025, during which data were collected from the HOIs of Government schools in Educational Zone Bijbehara, District Anantnag.

Instrumentation

A structured questionnaire was served to HOIs to assess awareness, implementation and effectiveness menstrual hygiene in Govt. Schools.

Data collection

The questionnaire was administered to HOIs after explaining the purpose of the study and providing clear instructions. Respondents were encouraged to share honest and detailed responses.

Statistical analysis

The retrieved copies of questionnaire were subjected to statistical analysis using Statistical Package for the Social Sciences for proper analysis. The data of the study was analyzed through descriptive statistics. Measures such as frequencies, percentages, means, and standard deviations were computed to describe the data.

Ethical considerations

Informed consent was obtained, and confidentiality and anonymity were maintained.

RESULTS

The present study was undertaken in 26 Government schools falling under the jurisdiction of Educational Zone Bijbehara, of Kashmir Division. These schools, purposively selected to assess the status of MHM, comprised Govt. schools, the majority of which are located in rural areas, often characterized by limited health infrastructure and heightened socio-cultural sensitivities surrounding menstruation.

A distinctive feature of the study is the rich institutional insight provided by the HOIs who participated in the survey. Many of these HOIs who served long tenures in their current schools ranging from several years to over two decades have developed a deep understanding of their

students' needs, behaviours, and socio-cultural contexts. Their long-standing engagement with the schools adds depth and authenticity to the data, particularly in relation to adolescent girls' experiences with menstruation.

The study captured both the institutional profiles and the demographic spread of adolescent girl students, offering a nuanced picture of menstrual hygiene practices, challenges, and interventions currently in place. The findings related to MHM implementation that range from availability of sanitary products and toilet facilities to the frequency of awareness programmes, disposal mechanisms, and observed patterns of absenteeism during menstruation. With this background, the following section presents a detailed analysis of the MHM:

Capacity building and training of HOIs on MHM

A critical observation emerging from the study is the severe lack of formal training provided to school leadership on menstrual health management. Out of the 26 HOIs surveyed, only 11.5% reported having received any form of training related to MHM, while the vast majority of 88.5% had not undergone any such capacity-building initiative (Table 1).

This gap highlights a significant oversight on the part of the education department, as well as the State Council of Educational Research and Training (SCERT) which is the designated nodal agency for teacher training and professional development in Jammu and Kashmir. Despite being responsible for equipping school leaders and educators to address diverse student needs, especially those related to adolescent health and well-being, the lack of training in this critical area reflects a missed opportunity to empower schools to support girls effectively during menstruation.

Strengthening the capacity of HOIs through structured and periodic MHM training sessions should be prioritized, not only as a health imperative but also as a key strategy to promote gender equity and improve learning outcomes.

Formation of menstrual health committees in schools

In the present study, it was observed that 57.7% of the sampled schools have taken a proactive step by framing menstrual health-related committees, while 42.3% have not yet established such mechanisms (Table 1).

These committees, where functional, typically involve female teachers, health personnel, and occasionally student representatives, and serve as a platform to facilitate awareness sessions, manage sanitary product distribution, and address girls' concerns confidentially. Establishing these committees across all schools can significantly enhance student engagement, confidence, and support systems for adolescent girls during menstruation.

Awareness programmes on MHM

Encouragingly, the present study reveals that 84.6% of sampled schools have conducted awareness programmes on MHM for students (Table 1). These programmes play a vital role in dismantling myths, addressing stigma, and fostering informed menstrual practices among adolescent girls. Despite this promising trend, 15.4% of sampled schools reported that no awareness activities had been conducted, indicating a gap that needs urgent attention. Strengthening collaboration between schools, the health department, and civil society organizations can further expand the reach and impact of MHM awareness across all institutions.

Availability, accessibility, and disposal of menstrual hygiene products

The present study revealed significant disparities in the availability and management of sanitary pads and related facilities across sampled schools (Table 2).

Availability of sanitary pads

Out of the surveyed schools, only 38.5% reported the availability of sanitary pads for adolescent girls. While this marks a partial positive step, the absence of sanitary products in 61.5% schools indicates a concerning gap in menstrual support systems for students. 60% of the available sanitary pads were procured through school funds and 40% from other sources, including NGOs, personal contributions, or health department donations.

Storage and emergency access

The sanitary pads were typically stored in staff rooms or first-aid rooms, providing relatively easy access within the school premises. However, when it came to emergency availability, only 34.6% schools had a system in place to provide sanitary pads to girls in urgent need. This limited emergency provision highlights the necessity of a standard operating mechanism for menstrual emergencies in schools.

Functional incinerators

The study also found that only 3.8% schools had a functional incinerator for the disposal of used sanitary products. This glaring inadequacy points to a critical infrastructure deficit in menstrual waste management.

Sanitary waste disposal practices

The 53.8% of schools had some form of sanitary waste disposal system that included covered dustbins (71.4% of those with disposal facilities), deep burial pits (14.3%), taken home by students (14.3%), a reflection of cultural discomfort and lack of institutional support. The fact that 46.2% schools lacked any sanitary waste disposal

mechanism further underscores urgency of intervention in strengthening hygienic practices and infrastructure.

Infrastructure and hygiene facilities in girls' toilets

Out of the sampled schools, 96.2% reported the availability of separate toilet facilities for girls, demonstrating encouraging compliance with gender-sensitive infrastructure norms. However, 3.8% still lacking this basic provision, which could negatively impact attendance and well-being of adolescent girls (Table 3).

Supporting sanitation facilities

Running water was available in all the sampled schools, a crucial prerequisite for personal hygiene during menstruation. Availability of dustbins with Lids (80.8%) and lockable doors (92.3%) offers the necessary privacy and security. Adequate lighting was shockingly present in only 3.8% schools, raising concerns about usability and safety of toilet spaces, particularly during morning/winter hours. These findings suggest that while most schools are equipped with structural basics, critical gaps remain, especially in lighting and safe disposal units, that must be addressed to make these spaces truly girl-friendly.

The reported cleaning frequency varied with 57.7% schools cleaned toilets once a day, 7.7% reported cleaning twice a day, 19.2% cleaned toilets occasionally, and 15.4% cleaned them rarely. While over half the schools adhere to a daily cleaning schedule, the fact that 34.6% schools' clean toilets either infrequently or rarely reflects an unhygienic and potentially unsafe environment for menstruating girls.

These findings highlight the need for regular maintenance, better lighting, and standard operating procedures to maintain hygienic, private, and accessible toilet spaces which is crucial for supporting girls' attendance, confidence, and health during menstruation.

Impact of menstruation on attendance and academic performance

Menstruation can significantly influence girls' participation in school, especially when compounded by lack of awareness, poor facilities, and social stigma.

Pattern of absenteeism during menstruation

The findings revealed that 46.2% schools agreed that girls tend to stay absent during their menstrual cycle, 23.1% were uncertain, 30.8% disagreed with the statement. This means that nearly half of the schools observe a consistent pattern of absenteeism, which must be addressed through targeted support and policy response. Of the schools that acknowledged absenteeism, the reported duration varied with 19.2% reported girls staying absent for 1 day, 23.1% noted absences lasting 2-3 days, 15.4% schools indicated more than 3 days of absence, 50% did not maintain any

record of menstrual-related absenteeism. The lack of data in half the schools highlights a critical monitoring gap and underscores the need for systematic record-keeping to inform interventions.

Improvement in attendance due to MHM awareness

The findings revealed that 23.1% schools reported a positive change, 26.9% did not observe any improvement while 50% had not assessed the impact. The fact that half the schools have not attempted to track the outcomes of their MHM initiatives reveals a need to institutionalize follow-up assessments and data-driven feedback loops.

Whether poor menstrual hygiene affects girls' academic performance, the findings showed that 65.4% schools agreed, 26.9% schools were uncertain and only 7.7% disagreed. This strong majority reflects widespread recognition among school heads that inadequate menstrual hygiene practices may result in distracted learning, reduced participation, social withdrawal, and reduced academic confidence.

While a majority of respondents acknowledge the link between menstrual hygiene and academic performance, there remains a need for institutional mechanisms to monitor, address, and respond to this challenge through sustained awareness, infrastructure support, and regular evaluation.

Impact of menstruation on student behavior and participation using Likert based observation

To better understand the psychosocial and behavioral impacts of menstruation on adolescent girls, HOIs were asked to share their observations using a Likert scale ranging from strongly disagree to strongly agree. Their responses offer valuable insight into how menstruation influences girls' classroom engagement, emotional well-being, and school participation.

Signs of discomfort or distress during menstruation

About 57.7% of schools observed that girls show signs of discomfort during menstruation, while 26.9% remained neutral and 15.3% disagreed (Table 4).

Girls become withdrawn and less participative

Nearly 73% of schools reported that girls become less active in class during menstruation, 19.2% were neutral, and 7.6% disagreed (Table 5).

Avoidance of physical activities and assemblies

A total of 73.1% reported that girls avoid physical activities or public participation, such as sports or assemblies, during menstruation that may possibly be due to pain, fear of stains or embarrassment (Table 6).

Requests to leave school early

The 57.6% of the schools reported that girls often request early leave, which may reflect inadequate comfort, products, or psychological support within the school during menstruation (Table 7).

Anxiety about stains, leakage, or teasing

Only 26.9% agreed that girls express such anxiety, while 38.5% disagreed. This may indicate underreporting by girls due to stigma, or lack of observation/tracking by teachers (Table 8).

Stigma affecting confidence

Over half the schools (53.8%) acknowledged that stigma around menstruation undermines girls' confidence, especially in lower-income or conservative communities (Table 9).

Dropout risk among disadvantaged girls

While nearly half agreed that poor MHM support increases dropout risk among disadvantaged girls, the response also reflects a significant divide in perception (Table 10).

Table 1: MHM related training and framing of such committees.

No. of sampled schools	HOIs who received training on MHM	MHM related school committees	Student awareness programmes
26	11.5%	57.7%	84.6%

Table 2: Availability, accessibility, and disposal of menstrual hygiene products.

Availability of sanitary pads	Source of funding	Storage of sanitary pads	Emergency availability of sanitary pads	Availability of functional incinerator	Sanitary waste disposal facility	Current method of disposal of used menstrual products
38.5%	School funds (60%) and from other sources (40%)	Staff rooms or first aid rooms	34.6%	3.8%	53.8%	Out of 53.8% schools with waste disposal facility, 71.4% used covered dustbins, 14.3% used deep burial pit and 14.3% students take home.

Table 3: Infrastructure and hygiene facilities in girls' toilets.

Availability of separate toilets for girls	Facilities available in girls' toilets				Frequency of cleaning of toilets
	Running water	Dustbins with lids	Lockable doors	Adequate lighting	
96.2%	100%	80.8%	92.3%	3.8%	Once a day (57.7%), twice daily (7.7%), occasionally (19.2%) and rarely (15.4%)

Table 4: Adolescent girls in schools showing signs of discomfort.

Variables	N	Percent (%)	Valid percent (%)	Cumulative percent (%)
Valid		5	16.1	16.1
	Agree	12	38.7	54.8
	Disagree	3	9.7	64.5
	Neutral	7	22.6	87.1
	Strongly agree	3	9.7	96.8
	Strongly disagree	1	3.2	100.0
Total	31	100.0	100.0	

Table 5: Girls tend to be more withdrawn and less participative.

Variables	N	Percent (%)	Valid percent (%)	Cumulative percent (%)
Valid		5	16.1	16.1
	Agree	18	58.1	74.2
	Disagree	1	3.2	77.4
	Neutral	5	16.1	93.5
	Strongly agree	1	3.2	96.8

Continued.

Variables	N	Percent (%)	Valid percent (%)	Cumulative percent (%)
Strongly disagree	1	3.2	3.2	100.0
Total	31	100.0	100.0	

Table 6: Some girls avoid sports physical activities or assemblies.

Variables	N	Percent (%)	Valid percent (%)	Cumulative percent (%)
Valid		5	16.1	16.1
	Agree	17	54.8	71.0
	Neutral	6	19.4	90.3
	Strongly agree	2	6.5	96.8
	Strongly disagree	1	3.2	100.0
	Total	31	100.0	100.0

Table 7: Girls often request to leave school early during menstruation

Variables	N	Percent (%)	Valid percent (%)	Cumulative percent (%)
Valid		5	16.1	16.1
	Agree	14	45.2	61.3
	Disagree	6	19.4	80.6
	Neutral	5	16.1	96.8
	Strongly agree	1	3.2	100.0
	Total	31	100.0	100.0

Table 8: Girls appear anxious about leakage stains or being teased

Variables	N	Percent (%)	Valid percent (%)	Cumulative percent (%)
Valid		5	16.1	16.1
	Agree	6	19.4	35.5
	Disagree	10	32.3	67.7
	Neutral	9	29.0	96.8
	Strongly agree	1	3.2	100.0
	Total	31	100.0	100.0

Table 9: Stigma around menstruation negatively influences confidence.

Variables	N	Percent (%)	Valid percent (%)	Cumulative percent (%)
Valid		5	16.1	16.1
	Agree	13	41.9	58.1
	Disagree	7	22.6	80.6
	Neutral	5	16.1	96.8
	Strongly agree	1	3.2	100.0
	Total	31	100.0	100.0

Table 10: Girls from disadvantaged backgrounds are more likely to drop.

Variables	N	Percent (%)	Valid percent (%)	Cumulative percent (%)
Valid		5	16.1	16.1
	Agree	12	38.7	54.8
	Disagree	10	32.3	87.1
	Neutral	4	12.9	100.0
	Total	31	100.0	100.0

Availability of menstrual products improved attendance

Nearly 61.5% of schools noticed improved attendance where menstrual products were available, reinforcing the

importance of product accessibility in keeping girls in school. The responses from HOIs reflect a clear pattern that indicated menstruation does impact girls' school experience, both emotionally and behaviorally.

Observations of withdrawal, physical avoidance, and requests to leave early align with larger trends found in similar national and international studies.

Furthermore, the data validates the need for psychosocial support, peer sensitization, and stigma reduction programmes to foster a school climate where menstruation is understood, accepted, and supported.

DISCUSSION

The findings of the present study reveal significant gaps in MHM across government schools of Zone Bijbehara, particularly in leadership training, infrastructural adequacy, product accessibility, and systematic monitoring of absenteeism. The negligible proportion of trained HOIs reflects institutional oversight, despite global emphasis on building gender-responsive school systems.¹⁴ Inadequate disposal mechanisms, poor lighting, and inconsistent sanitation facilities resonate with concerns raised at international level, which underscores the link between WASH infrastructure and girls' dignity and attendance.² Importantly, these findings are consistent with earlier observations in assessment of health and hygiene parameters in educational institutions: a case study of district Anantnag, Jammu and Kashmir, which reported infrastructural deficiencies, irregular maintenance of sanitation facilities, and the need for strengthened institutional monitoring mechanisms within schools.¹² The behavioral patterns of withdrawal, absenteeism, and reduced participation observed in the present study further align with broader public health evidence, highlighting menstruation as both a health and educational equity issue.¹ Collectively, the findings call for an integrated, policy-driven, and multi-sectoral approach combining infrastructure, training, community sensitization, and sustained evaluation to ensure safe and dignified menstrual health management in schools.

Limitations

This study has certain limitations. The research was conducted in a limited number of government schools within Educational Zone Bijbehara, which may limit the generalizability of the findings to other regions. In addition, the data were primarily collected from HOIs, and the perspectives of adolescent girls were not directly included. The study also relied on self-reported information from school authorities, which may involve reporting bias. Despite these limitations, the study provides useful insights into the status of MHM in school settings and highlights areas requiring further research and policy attention.

CONCLUSION

The present study provides important insights into the current status of MHM in government schools of Educational Zone Bijbehara in District Anantnag. While basic facilities such as separate toilets and water

availability are largely present, significant gaps remain in terms of sanitary pad availability, disposal mechanisms, adequate lighting, and formal training of school authorities on menstrual health. These shortcomings may contribute to discomfort, stigma, and loss of productive learning time among adolescent girls during menstruation. By systematically documenting institutional practices, infrastructure gaps, and awareness efforts, this study advances knowledge by highlighting the critical link between menstrual health management and educational participation in a school setting. The findings underscore the need for targeted capacity building, improved sanitation infrastructure, and consistent monitoring mechanisms to ensure that adolescent girls can participate fully and confidently in the learning process. Strengthening MHM initiatives in schools will not only promote the health and dignity of girls but also contribute to greater educational equity and improved learning outcomes.

Recommendations

Provision of sanitary pads and monthly hygiene kits (including reusable and disposable options) along with basic medicines and first-aid support. Clean, private, and well-equipped girls' washrooms with running water, soap, lighting, incinerators, and separate changing/common rooms. Continuous menstrual health education sessions led by trained teachers and health professionals, along with regular counselling support. Periodic health check-ups, awareness drives, and consistent supply of sanitary products through coordinated efforts. Dedicated funding and deployment of female teachers to ensure a holistic, supportive, and dignified school environment for girls.

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