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KNOWLEDGE AND PRACTICES REGARDING MENSTRUATION HYGIENE MANGEMENT AMONG SCHOOL GIRLS

Gyawali MEENA[1], Maharjan ISHIKA[2]

[1]Department of Public Health, Asia International University, Bukhara, Uzbekistan

[2,] 2nd Year Medical Student, Asia International University, Bukhara, Uzbekistan

meegyawali@gmail.com (Corresponding author's email)

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Abstract

Menstrual hygiene management (MHM) is a critical aspect of adolescent girls' health, influencing reproductive health, school attendance, and overall well-being. Adequate knowledge and hygienic practices are essential to prevent reproductive tract infections and promote positive health behaviors. This study assessed menstrual knowledge, hygiene practices, and their association among schoolgirls in Nepal. A cross-sectional study was conducted among 260 schoolgirls aged 10–18 years from public, private, and community schools. Data were collected on socio-demographic characteristics, menarche age, menstrual problems, knowledge of menstruation and hygiene, and self-reported hygiene practices. Knowledge and practice levels were categorized as "good" or "poor," and associations were analyzed using the Chi-square test. The majority of respondents were aged 13–15 years (66.9%), studying in grades 7–9, and predominantly Hindu (78.8%). Most parents were literate, and fathers were largely engaged in non-agricultural occupations. The mean age of menarche was 11–12 years. Common menstrual problems included heavy bleeding (30%), abdominal pain (26.2%), and irregular periods (25.8%), while 29.6% reported other reproductive health issues such as itching or abnormal discharge. Knowledge of menstruation was high, with 91.2% demonstrating good understanding of menstrual biology and hygiene, including proper use and changing of sanitary pads, and handwashing practices. Menstrual hygiene practices were good in 81.2% of respondents, although gaps were noted in drying reusable cloths and pad disposal. A significant association was found between knowledge and hygiene practices ($\chi^2 = 14.76$, $p < 0.001$), with higher knowledge correlating with better hygiene behaviors. Most adolescent girls in this study exhibited good menstrual knowledge and hygiene practices. However, a minority displayed poor knowledge and inadequate hygiene, highlighting the need for targeted, school- and community-based interventions. Enhancing menstrual health education, addressing cultural misconceptions, and improving access to hygienic materials can further strengthen MHM and promote the overall well-being of adolescent girls.

Keywords: Menstrual hygiene, adolescent girls, knowledge, practices, menstrual health management, school-based education

Introduction

Menstruation is a natural biological process that occurs in adolescent girls and women as part of the reproductive cycle. It typically begins during puberty, marking an important stage in a girl's physical and reproductive development. Proper menstrual hygiene management (MHM) involves the use of clean menstrual products, adequate privacy for changing materials, access to water and soap for washing, and appropriate disposal facilities (1).

Despite being a normal physiological process, menstruation remains surrounded by social taboos, cultural restrictions, and misinformation in many societies. These barriers often prevent girls from receiving accurate knowledge about menstruation before the onset of menarche (2). As a result, many adolescent girls experience confusion, fear, or embarrassment during their first menstrual cycle.

Poor menstrual hygiene practices can lead to various health problems such as reproductive tract infections, urinary tract infections, and psychological distress (3). In addition, inadequate sanitation facilities in schools can make it difficult for girls to manage menstruation effectively,

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leading to school absenteeism and reduced participation in academic activities (4). Educational institutions play a critical role in improving menstrual health awareness and providing supportive environments for adolescent girls. Access to proper sanitation facilities, menstrual products, and accurate information can significantly improve menstrual hygiene practices and reduce stigma associated with menstruation. Therefore, assessing the knowledge and practices of school girls regarding menstrual hygiene management is essential for designing effective health education programs and improving adolescent health outcomes.

Methodology

A descriptive cross-sectional study was conducted to assess the knowledge and practices regarding menstrual hygiene management (MHM) among school girls. The study targeted adolescent girls aged 12–18 years who had experienced menarche and were studying in selected secondary schools in Nepal. A total of 260 respondents participated in the study. Participants were selected using a simple random sampling technique to ensure equal chances of participation among eligible students. Data were collected using a structured, self-administered questionnaire developed based on previous studies on menstrual hygiene practices (3). The questionnaire consisted of sections covering socio-demographic information, knowledge about menstruation, menstrual hygiene practices. Prior to data collection, permission was obtained from school authorities, and the purpose of the study was clearly explained to the participants. Participation was voluntary, and confidentiality and anonymity of the respondents were ensured. The collected data were coded and analyzed using descriptive statistical methods, including frequencies and percentages, to summarize the responses and identify patterns in knowledge and practices related to menstrual hygiene management among the participants.

Result

Section A: Demographic information

Table 1: Distribution of respondents according to their socio- demographic information

Responses	Frequency	Percentage
Age		
10-12	75	28.8
13-15	174	66.9
16-18	11	4.2
Grade		
7	95	36.5
8	109	41.9
9	56	21.5
School Type		
public	89	34.2
private	148	56.9
community	23	8.8
Religion		
hindu	205	78.8
christian	26	10.0
kirat	18	6.9
buddhist	11	4.2
Mother Education		
illiterate	58	22.3
literate	202	77.7
Father Education		
illiterate	53	20.4
literate	207	79.6
Fathers occupation		

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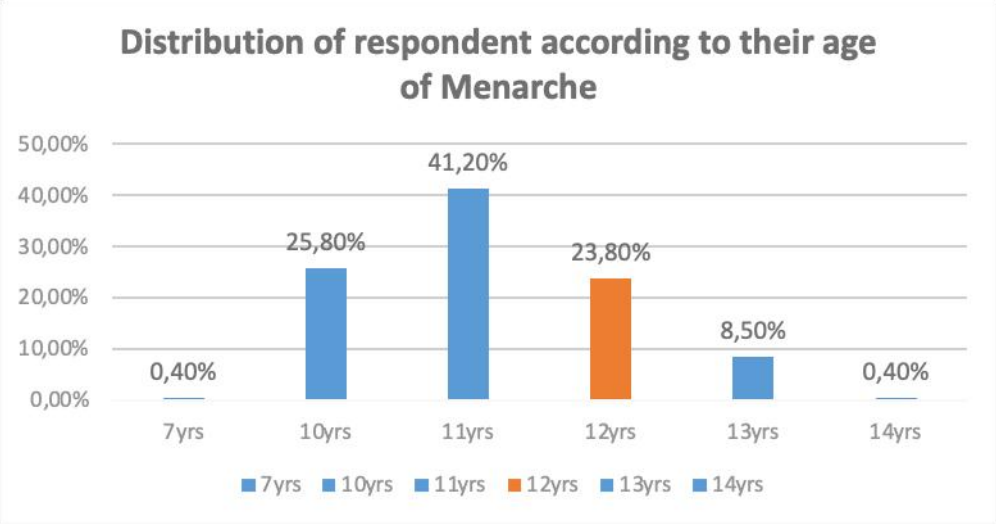
Agriculture	13	5.0
Other than agriculture	247	95.0
Mothers occupation		
Housewife	147	56.5
Other than housewife	113	43.5

The majority of respondents (66.9%) were in the 13–15 years age group, followed by 10–12 years (28.8%), while 16–18 years (4.2%) represented the smallest group. Most participants were studying in grade 8 (41.9%), followed by grade 7 (36.5%) and grade 9 (21.5%). Regarding school type, 56.9% of respondents attended private schools, 34.2% attended public schools, and 8.8% were from community schools. In terms of religion, the majority were Hindu (78.8%), followed by Christian (10.0%), Kirat (6.9%), and Buddhist (4.2%). Most parents were literate, with 77.7% of mothers and 79.6% of fathers reported as literate. Concerning occupation, 95% of fathers were engaged in non-agricultural work, while 5% were involved in agriculture. Among mothers, 56.5% were housewives, whereas 43.5% were employed in other occupations.

SECTION B: MENSTRUAL HEALTH STATUS

Figure 1: Distribution of respondent according to responses on at what age did they had their first period (Menarche)



The majority of respondents experienced menarche at 11 years (41.2%), followed by 10 years (25.8%) and 12 years (23.8%). Very few respondents reported experiencing menarche at 7 years or 14 years (0.4% each). Overall, most respondents attained menarche between 10–12 years of age..

Table 2: Distribution of respondents according to responses on do you experience any problems during menstruation.

Responses	Frequency	Percent
Abdominal pain (cramps)	68	26.2
Irregular periods	67	25.8
Heavy bleeding	78	30
Back pain	31	11.9
Mood swings	16	6.2

The most common menstrual problem reported by respondents was heavy bleeding (30%), followed by abdominal pain (26.2%) and irregular periods (25.8%). Less frequently reported problems included back pain (11.9%) and mood swings (6.2%).

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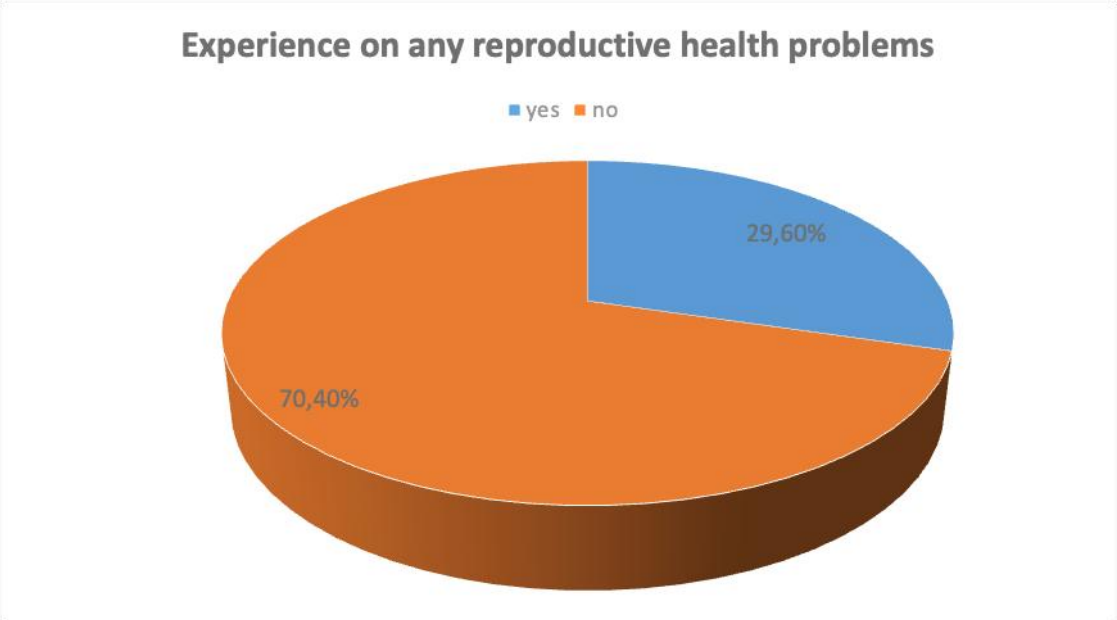
Figure 2: Distribution of respondents according to responses on do you experience any other reproductive health issues.



The majority of respondents (70.4%) reported no additional reproductive health problems during menstruation, while 29.6% experienced issues such as itching, abnormal discharge, or infections.

SECTION C: KNOWLEDGE REGARDING MENSURATION HYGIENE MANAGEMENT

Table 3: Distribution of respondents according to their knowledge on mensturation hygiene and management

Responses	Frequency(n)	Percentage(%)
Menstruation is the normal and healthy process in female.		
Yes	248	95.4
No	12	4.6
Menstruation cycle is related to pregnancy		
yes	205	78.8
no	55	21.2
Hormone is the main cause of female menstruation		
yes	251	96.5
no	9	3.5
Uterus is the main source of bleeding during the menstruation days		
yes	243	93.5
no	17	6.5
Normal duration of menstruation flow is 3-5 days		
yes	243	93.5
no	17	6.5
Normal menstruation cycle for healthy women is 28 days		
yes	167	64.2
no	93	35.8
Manage blood flow and to maintain hygiene is the main reason to use sanitary pad during menstruation		
yes	260	100.0
Every 4-6 hours, sanitary pads should be changed		

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yes	240	92.3
no	20	7.7
Hand washing after pad change is a good practice		
yes	257	98.8
no	3	1.2
Burying and burning is the proper way to dispose a used pad		
yes	38	14.6
no	222	85.4

The results indicate that the majority of respondents have good knowledge about menstruation and menstrual hygiene. Most participants (95.4%) recognized menstruation as a normal and healthy process, and 96.5% correctly identified hormones as the main cause. A large proportion (93.5%) knew that the uterus is the source of menstrual bleeding and that the normal duration of menstrual flow is 3–5 days. While 64.2% correctly identified the average menstrual cycle length as 28 days, a notable portion (35.8%) had differing views. Knowledge of menstrual hygiene practices was also high. All respondents (100%) agreed that sanitary pads are used to manage blood flow and maintain hygiene, and 92.3% knew that pads should be changed every 4–6 hours. Nearly all participants (98.9%) recognized hand washing after changing pads as an important hygienic practice. Additionally, most respondents (85.4%) disagreed with burying or burning used pads as a proper disposal method, though 14.6% still supported these practices, indicating the persistence of traditional disposal methods in some communities.

SECTION D: PRACTICE ABOUT MENSURATION AND ITS MANAGEMENT

Table 3: Distribution of respondents according their practices on menstrual hygiene.

Responses	**Frequency**	**Percentage**
Responses on used some form of absorbents during menstruation		
Yes	117	45.0
No	143	55.0
Sanitary pads used during menstruation		
yes	260	100.0
Cleaning of genital organ with clean water		
Yes	254	97.7
No	6	2.3
Daily bath during menstruation		
Yes	182	70.0
No	78	30.0
Cleaning of genital organ at least three times a day		
Yes	229	88.1
No	31	11.9
Changing of absorbent materials at least three times a day		
Yes	233	89.6
No	27	10.4
Changing of absorbents in school		
yes	214	82.3
no	46	17.7
Drying of washed reusable clothes in direct sunlight		
yes	143	55.0
no	117	45.0
Disposing used pads in dustbins or toilets		
yes	222	85.4
no	38	14.6
Bathing with soap water during mensuration		

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Yes	256	98.5
no	4	1.5

The findings show mixed menstrual hygiene practices among respondents. While 45% reported using some form of absorbents during menstruation, 55% reported not using them, although all respondents (100%) acknowledged the use of sanitary pads during menstruation. Most participants practiced basic hygiene, with 97.7% cleaning the genital area with clean water and 98.5% bathing with soap and water. Regarding personal hygiene habits, 70% reported taking daily baths during menstruation. A large proportion (88.1%) cleaned the genital area at least three times a day, and 89.6% changed absorbent materials at least three times daily. Additionally, 82.3% reported changing absorbents at school. In terms of menstrual material care and disposal, 55% dried reusable cloths in direct sunlight. Most respondents (85.4%) disposed of used pads in dustbins or toilets. Overall, although the majority demonstrated good menstrual hygiene practices, some gaps and inadequate practices were still observed.

Table 4: Overall Knowledge Level of Respondents (n = 260)

Knowledge Level	**Frequency(n)**	**Percentage (%)**
Good Knowledge	237	91.2%
Poor Knowledge	23	8.8%
Total	260	100%

The overall knowledge level about menstruation was assessed using four questions. Respondents who answered at least half correctly were classified as having good knowledge, while those with fewer correct responses were categorized as having poor knowledge. The results showed that 237 respondents (91.2%) had good knowledge about menstruation and its biological causes, whereas 23 respondents (8.8%) had poor knowledge, indicating that most participants possess adequate knowledge, though a small proportion still lacks accurate information.

Overall Menstrual Hygiene Practice (n = 260)

Hygiene Practice Level	**Frequency(n)**	**Percentage (%)**
Good Hygiene Practice	211	81.2%
Poor Hygiene Practice	49	18.8%
Total	260	100%

Menstrual hygiene practices were assessed using ten indicators, including the use of sanitary pads, genital cleaning, bathing habits, frequency of changing absorbent materials, and proper disposal methods. Respondents with positive responses to at least half of the indicators were classified as having good hygiene practices, while those with fewer positive responses were categorized as having poor hygiene practices. The results showed that 211 respondents (81.2%) had good menstrual hygiene practices, whereas 49 respondents (18.8%) had poor practices, indicating that most participants follow appropriate hygiene practices, although a small proportion still requires improved menstrual health education and awareness.

Table: Association Between Knowledge Level and Menstrual Hygiene Practices (n = 260)

Knowledge Level	**Good Hygiene Practice**	**Poor Hyeiene Practice**	**Total (n)**	**P- Valu e**
Good Knowledge	200 (84.4%)	37 (15.6%)	237	<0.001
Poor Knowledge	11 (47.8%)	12 (52.2%)	23	
Total	211 (81.2%)	49	260	

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		(18.8%)		

The Chi-square test showed a significant association between knowledge level and menstrual hygiene practices ($\chi^2 = 14.76$, df = 1, $p < 0.001$). Respondents with good knowledge were more likely to practice proper menstrual hygiene (84.4%) compared to those with poor knowledge (47.8%), indicating that knowledge about menstruation significantly influences hygiene behaviors and highlighting the importance of educational interventions for adolescent girls.

Discussion

The socio-demographic profile of respondents shows that most schoolgirls were aged 13–15 years, representing early adolescence—an age at which girls are typically transitioning into post-menarche experiences and acquiring greater understanding of reproductive health topics. Similar studies have reported that age significantly influences both knowledge and hygiene practices, with older adolescents more likely to demonstrate better menstrual hygiene management (MHM) due to increased exposure to information and maturity in self-care behaviours [5]. The predominance of students in grades 7–9 suggests that school-based education is a pivotal platform for menstrual health information. Previous research has shown that school education contributes significantly to menstrual knowledge and hygiene practices, as structured curricula and peer discussion provide opportunities for accurate information and help dispel misconceptions that may otherwise persist in households [6]. Given that over half of your respondents attended private schools, this may reflect disparities in access to educational resources; girls in private institutions often benefit from better sanitation facilities and targeted health education programs compared with those in community or public settings, which can influence both knowledge levels and practical behaviours around menstruation.

The religious distribution—predominantly Hindu followed by Christian, Kirat, and Buddhist respondents—reflects local cultural diversity. While some studies have found religion per se may not be a strong predictor of menstrual hygiene behaviours, cultural norms associated with religious identity can shape openness in discussing menstruation and influence hygiene practices [5,6].Parental literacy in your sample was relatively high (≈78–80% for both mothers and fathers), which aligns with studies indicating that parental education contributes positively to girls' menstrual knowledge and practices. Parental literacy often correlates with better health communication within families and greater economic capacity to purchase menstrual products, which in turn can enhance safe MHM [5,7]. Likewise, the finding that most fathers were engaged in non-agricultural work suggests a predominantly urban or semi-urban socio-economic composition, which is commonly associated with increased access to menstrual hygiene materials and water, sanitation, and hygiene (WASH) infrastructure—an influence shown to improve menstrual hygiene outcomes in comparable studies [5].

The fact that a substantial proportion of mothers were housewives (56.5%), while a significant minority were employed, highlights varied household dynamics that may impact menstrual health education. In some studies, maternal occupation—especially outside traditional roles—was associated with better menstruation knowledge and practices among daughters, possibly due to broader social engagement and exposure to health information [5]. However, other research emphasizes that maternal presence and comfort in discussing menstruation within the home can equally support positive menstrual hygiene behaviours. Overall, these socio-demographic characteristics likely shaped respondents' menstrual knowledge and practices. Age, school environment, parental literacy, and socio-economic status interact to influence both the acquisition of menstrual information and the ability to implement hygienic practices. These insights underscore the importance of tailored, culturally sensitive school-based and community interventions to improve menstrual health education, particularly for younger girls and those in less resource-advantaged settings.

In this study, most girls experienced menarche between 10 and 12 years, with the highest proportion at 11 years, which aligns with global reports that the typical age of first menstruation

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generally falls within early adolescence (around 12–13 years) in many populations [8,9]. Early menarche, such as onset before 12 years, has been documented in various settings and is increasingly reported in research on adolescent reproductive health, reflecting nutritional, environmental, and socio-economic influences on biological development [9]. The low percentages reporting menarche at very young (7 years) or older (14 years) ages are also consistent with population surveys showing that most girls begin menstruating within a narrow normal range, while only a small minority experience notably early or late onset [8]. Understanding the age distribution of menarche is important for menstrual hygiene management programs because girls who begin menstruating earlier may require menstrual health education sooner to ensure proper hygiene practices and reduce anxiety or misinformation around this biological transition.

In this study, heavy bleeding was the most commonly reported menstrual problem (30%), followed by abdominal pain (26.2%) and irregular periods (25.8%). These findings are consistent with clinical evidence showing that menorrhagia (heavy menstrual bleeding) and dysmenorrhea (painful menstruation) are among the most frequent complaints in adolescent girls, often affecting daily activities and school attendance [10]. Heavy bleeding during adolescence can be due to anovulatory cycles and endocrine immaturity following menarche, as well as conditions such as menorrhagia or PCOS, which have been widely reported in population studies [11]. Abdominal pain, commonly experienced as part of dysmenorrhea, is one of the most distressing symptoms for many adolescents and may coexist with heavy bleeding or irregular cycles, influencing quality of life and health-seeking behaviour [10,11]. Irregular menstruation—reported by about a quarter of respondents in this study—also aligns with previous research showing that cycle irregularities are common in the first few years after the onset of menses due to hormonal fluctuations and the evolving hypothalamic-pituitary-ovarian axis [11]. Less frequently reported issues such as back pain and mood swings further reflect the range of somatic and emotional symptoms associated with menstrual disorders, although these are typically secondary to primary symptoms like pain and heavy flow. Altogether, these results highlight the need for comprehensive menstrual health education and accessible care to address the spectrum of menstrual problems experienced by schoolgirls.

In this study, most respondents (70.4%) reported no additional reproductive health problems during menstruation, while 29.6% experienced symptoms such as itching, abnormal discharge, or infections. Although the majority did not report issues, almost one-third of girls having these symptoms is consistent with other research showing that reproductive tract symptoms are relatively common among adolescents and often linked to menstrual hygiene and genital tract health [7,12]. For example, symptoms like vaginal discharge and itching, which may indicate vulvovaginitis or other infections, have been reported in significant proportions of adolescent girls in community settings, reflecting underlying reproductive tract morbidity [7].Abnormal discharge and itching are known signs of reproductive tract infections and imbalance of vaginal microbiota, especially when menstrual hygiene practices are suboptimal, increasing susceptibility to conditions such as bacterial vaginosis and yeast infections [12]. These symptoms may be underreported due to social stigma or lack of awareness about reproductive health, emphasising the need for menstrual health education and access to appropriate health services to ensure early recognition and management of reproductive health issues among schoolgirls.

The results show that most respondents have good knowledge of menstruation and menstrual hygiene, with the majority recognizing it as a normal physiological process and identifying hormones as the main cause. Knowledge about menstrual anatomy, duration, and cycle length was generally high, although a notable portion (35.8%) had misconceptions about the average cycle length. Knowledge of hygiene practices was also strong, with almost all respondents understanding the importance of using sanitary pads, changing them regularly, and practicing hand hygiene. However, traditional disposal practices, such as burying or burning

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pads, persist among a small proportion (14.6%), reflecting the influence of cultural norms [13,3]. These findings highlight the effectiveness of school- and community-based menstrual education while indicating the need to address persistent traditional beliefs to improve menstrual hygiene management.

The findings of this study indicate a high overall level of knowledge about menstruation among the respondents, with 91.2% classified as having good knowledge and only 8.8% demonstrating poor understanding of menstrual biology. This suggests that most participants have a relatively strong foundational awareness of menstruation and its biological underpinnings. High knowledge levels can be attributed to increased access to formal education, health education programs, and greater exposure to reproductive health information through media and school curricula. Previous studies have similarly reported that adolescent girls and young women with better education and exposure to health information tend to have more accurate knowledge about menstruation and reproductive health, which can positively influence their menstrual practices and overall well- being [14]. Despite this generally positive outcome, the existence of a minority (8.8%) with poor knowledge highlights persistent gaps that may have implications for health behaviours and outcomes. Inadequate menstrual knowledge has been linked in other research to misconceptions, stigma, and unhealthy practices, including avoidance behaviours and poor hygiene management during menstruation [15]. For instance, girls who lack accurate information may harbor myths about menstruation being a disease or harmful process, which can lead to anxiety, shame, or secrecy. Addressing these knowledge gaps is vital not only for personal health but also for fostering positive attitudes towards menstruation and reducing menstrual- related taboos within communities.Furthermore, the high proportion of respondents with good knowledge in this study may reflect successful health education efforts, but continued investment in menstrual education remains essential. Tailored interventions that reach the minority with poor understanding—especially through schools, community health services, and peer education—can help ensure that all young women have access to correct, comprehensive menstrual health information. Previous work underscores the role of sustained reproductive health education in improving menstrual literacy, reducing misconceptions, and promoting supportive environments for menstrual health management [14,15]. Therefore, integrating age- appropriate, culturally sensitive menstrual education into standard health curricula can bridge the remaining gaps and enhance both knowledge and associated hygiene practices.

The results of this study indicate that a substantial majority of respondents (81.2%) demonstrated good menstrual hygiene practices, while 18.8% were identified as having poor practices. This suggests that most participants are engaging in appropriate menstrual health behaviours, such as using sanitary pads, maintaining genital hygiene, bathing regularly, changing absorbents frequently, and disposing of materials properly. The high level of good practice aligns with similar studies showing that increased awareness and education about menstrual hygiene correlates with better menstrual management behaviours among adolescent girls and young women (16). Where menstrual hygiene management (MHM) interventions have been implemented—through schools, community outreach, or health services—improvements in hygiene practices are often observed, reinforcing the importance of ongoing education efforts. Despite the generally positive findings, nearly one in five participants exhibited poor menstrual hygiene practices, revealing an important gap in menstrual health management. Poor hygiene during menstruation has been associated with increased risk of reproductive tract infections, discomfort, and reduced school or workplace attendance (17). This minority may be facing barriers such as limited access to menstrual products, cultural taboos, insufficient privacy for washing and changing, or lack of comprehensive hygiene education. Previous research emphasizes the need to address these barriers, noting that knowledge alone is insufficient unless accompanied by accessible facilities and supportive environments for girls and women to practise proper hygiene (16,17). The existence of this subgroup with poor practices points to the need for targeted interventions aimed at strengthening menstrual health education and access to

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resources. School-based health education programs, peer-led awareness sessions, and community engagement initiatives have been shown to significantly improve hygiene practices when tailored to local cultural contexts (16). Moreover, integrating menstrual hygiene management into broader reproductive health curricula can reinforce positive behaviours and ensure that young women are equipped with both the knowledge and practical skills to manage menstruation safely and confidently. Continued efforts are essential to reduce disparities and ensure that all individuals have the tools and understanding necessary for optimal menstrual health.

The analysis of the association between knowledge level and menstrual hygiene practices in this study indicates a significant relationship ($\chi^2 = 14.76$, $p < 0.001$). Respondents with good knowledge about menstruation were more likely to demonstrate good hygiene practices (84.4%) compared to those with poor knowledge (47.8%). This finding underscores the critical role that menstrual knowledge plays in shaping health behaviors. Adequate understanding of the biological aspects of menstruation can empower individuals to adopt proper hygiene measures, such as regular changing of absorbents, genital cleaning, and appropriate disposal practices. Similar studies have highlighted that knowledge is a strong predictor of menstrual hygiene management among adolescent girls and young women, reinforcing the importance of reproductive health education in promoting healthy practices (18).The results also reveal that nearly half of respondents with poor knowledge (52.2%) exhibited inadequate menstrual hygiene practices. This aligns with previous research demonstrating that lack of menstrual knowledge is often associated with misconceptions, unsafe practices, and heightened risk of infections. Poor hygiene behaviors in individuals with limited understanding of menstruation may stem from cultural taboos, myths, or insufficient access to accurate health information (17). Therefore, knowledge gaps can directly translate into negative health outcomes, highlighting the importance of interventions that target both awareness and practical skills for effective menstrual management. Overall, the significant association observed in this study suggests that interventions aimed at improving menstrual hygiene should prioritize enhancing knowledge through school-based programs, community health education, and peer learning initiatives. Evidence from low- and middle-income countries indicates that educational programs that integrate comprehensive menstrual health education can significantly improve both knowledge and hygiene practices simultaneously (18,17). By ensuring that adolescents have accurate information about menstruation and its management, public health initiatives can contribute to better hygiene behaviors, reduced infection risks, and improved overall well-being among young women.

Conclusion

The findings of this study demonstrate that the majority of adolescent girls possess good knowledge about menstruation and menstrual hygiene, and most follow appropriate hygiene practices. High awareness of menstruation as a normal physiological process, understanding of biological causes, and recognition of proper hygiene practices—such as using sanitary pads, changing them regularly, cleaning the genital area, and practicing hand hygiene—reflect the positive impact of school- and community-based education programs. However, some misconceptions persist, particularly regarding menstrual cycle length and traditional disposal practices, highlighting areas where further education is needed.

The study also reveals a significant association between knowledge level and menstrual hygiene practices, emphasizing that adequate knowledge is a key determinant of safe and effective menstrual management. Despite the generally positive outcomes, a small proportion of girls continue to experience poor hygiene practices, likely due to limited knowledge, cultural beliefs, or access barriers. These findings underscore the importance of sustained, culturally sensitive educational interventions, improved access to menstrual products, and supportive school environments to ensure that all adolescent girls can manage menstruation safely, confidently, and with dignity.

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