Menstruation Hygiene Practices Among Girl Students in Kathmandu Valley

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Article Info:
Received: August 11, 2023
Revised: August 29, 2023
Accepted: September 27, 2023

Keywords: Menstrual hygiene, higher education girls, disposal of pads, management of sanitary napkin

ABSTRACT: The study, titled "Menstruation hygiene practices among higher-level girls students," explores the natural process of menstruation in the female reproductive system occurring monthly. Governed by hormonal changes, menstruation is a pivotal facet of the menstrual cycle, and fertility and associated with physical and emotional symptoms like cramps, mood swings, and fatigue. Proper menstrual hygiene practices are vital for women's health during this period. Inadequate water, sanitation, hygiene facilities, limited education, and deficient menstrual hygiene management make girls perceive menstruation as embarrassing and uncomfortable. In Nepal, many teenage girls lack education about menstruation, adversely affecting their health. The study aims to assess menstruation hygiene practices among higher-level female students before and during menstruation. Using quantitative and descriptive methods, the research selected 250 students through simple random sampling from 650 enrolled on two constituent campuses. These campuses were chosen via convenience sampling from 22 within the Kathmandu Valley. Ethical considerations were followed, ensuring confidentiality and obtaining oral consent from participants. The findings underline the significance of comprehensive menstrual health education and the sway of cultural beliefs on menstruation experiences. Encouraging open discussions, dispelling myths, ensuring access to accurate information, and cultivating supportive environments are essential for enhancing menstrual health and overall well-being.

Introduction

Menstruation, a standard process for women, necessitates proper hygiene and facilities for optimal health. Adequate water, sanitation, and knowledge are essential components. Access to clean water and spaces for changing and disposal is vital. Unfortunately, prevailing myths and behaviors can adversely impact menstrual health. This phenomenon typically occurs during adolescence and concludes after menopause. The World Health Organization defines

adolescence as ages 10-19, characterized by intense physical, physiological, and behavioral changes, reflecting rapid growth and development.

Menstruation follows a roughly 28-day cycle and is a physiological process in females. Despite its role as a reproductive indicator, social stigma and misconceptions have marred it. Insufficient understanding can lead to risky hygiene practices, increasing susceptibility to cervical cancer, infections, school dropout, poor academic performance, and diminished quality of life. Inadequate facilities also compound the issue. A study by (Sharma et al., 2020) reveals significant Water, Sanitation, and Hygiene (WASH) challenges during menstruation, such as inadequate disposal systems for pads, insufficient water supply for cleaning, unsanitary toilets, absence of soap, washbasins, and secure restroom facilities, jeopardizing girls' safety in schools.

Women and girls must manage their menstrual bleeding effectively to ensure a positive and fulfilling life. Mahon & Fernandes (2010) emphasize that controlling menstrual bleeding is essential for health and respect. This requires access to water, sanitation, and hygiene services, like clean water for washing and drying, private spaces for changing and disposal, and knowledge about menstrual cycle management.

Basu and Tripathi (2022) highlight that menstruation involves physical, mental, and dietary changes, though it remains taboo in various cultures with urban legends. Menstrual cleanliness is crucial for women's reproductive health, yet Nepal's socio-cultural norms impose restrictions. Adolescent girls suffer due to these taboos. Menstruation, defined is as irregular vaginal bleeding in adolescence, occurring around 3-5 days monthly until menopause. The hypothalamus produces Gonad Tropic Hormone (GOTH), triggering pituitary secretion of Luteinizing Hormone (LAHR) and Follicle Stimulating Hormone (FCH) in the ovary, causing monthly maturation. Ovary estrogen thickens the uterine endometrial layer through cell distribution. This proliferative phase aligns with Nepal's Government Ovulation follows, with LAHR secretion by the pituitary, and the ovary releases progesterone, further thickening the endometrial layer. Menarche marks the transition from adolescence to womanhood.

Menstrual Hygiene Management (MHM) involves using clean materials for blood absorption, access to water, and soap, and proper disposal(WHO/UNICEF, 2012). It focuses on practical strategies for menstruation, encompassing cleanliness, material use, and disposal (Crofts et al., 2014). This study examines the knowledge, attitudes, and practices of school-level girls. Women who do not regularly cleanse their perineal region during menstruation have increased risk of reproductive tract infection (Farage et al., 2014). Research on menstrual hygiene practices, parental behaviour, and campus presence among higher-level girls in Nepal must be completed. Therefore, this study aims to investigate menstruation hygiene practices among higher-level female students, filling a gap in the existing research. Poor water, sanitation, and hygiene (WASH) facilities in schools, coupled with inadequate puberty education and limited access to Menstrual Hygiene Management (MHM) items, contribute to girls experiencing menstruation as shameful and uncomfortable (Anna Maria van et al., 2016) . In Nepal, less than half of teenage girls are educated and knowledgeable about menstruation, impacting their education, emotional well-being, physical health, and quality of life. Cultural customs like Chhaupadi exacerbate menstrual stigma, varying caste and ethnicity (Karki et al., 2017)). Girls' knowledge and practices on menstrual hygiene in rural schools are context-

specific, with some expressing fear, shame, and discomfort despite awareness. Health literacy is crucial in menstrual hygiene management and practice, warranting inclusion in educational programs. More research on menstrual health and hygiene in Nepal is needed to promote awareness and normalise menstruation as a natural biological process.

Menstrual practices are deeply influenced by cultural norms, parental guidance, personal preferences, and socioeconomic pressures (Crofts et al., 2014). In Nepal, menstruation is often considered impure and culturally taboo, leading to limited Discussion and knowledge about menstrual hygiene. This lack of awareness affects girls' academic performance and attendance, particularly in rural secondary schools where inadequate WASH facilities and menstrual materials contribute to discomfort and absenteeism. Improvements are needed in MHM facilities, user-friendly WASH infrastructure, and teacher training, and promoting hygienic habits. Addressing these issues is crucial, given that education plays a key role in overcoming challenges related to menstrual health(Sharma et al., 2019) . In Surkhet, awareness about menstruation at menarche was found in 50% of adolescent girls, with 13.5% experiencing reproductive health problems. Menstrual hygiene practices, such as pad change frequency and genital organ washing, were predictors of reproductive health issues (Bhattarai et al., 2020). While existing studies focus on women's and girls' menstrual health, limited research exists about campus-going girls in Nepal. The study aimed to determine the mensuration hygiene management practices of girls in higher-level education before and during the mensuration.

Methodology

This study follows a quantitative, descriptive research design and is conducted in the Kathmandu Valley. Specifically, it focuses on two constituent campuses of Tribhuwan University: Mahendra Ratna Campus in Kathmandu and Sonothemi Campus in Bhaktapur. The selection of respondents aims to represent a defined population of interest, following the convenience sampling method (Bennett & Lapan, 2004) . The participants are female students at the bachelor's level, with a total of 665 students on these campuses. A random sample of 250 students was selected using the formula =n/(1+ne^2). Data was collected using a self-administered questionnaire. A primary data collection tool commonly used in research. The researcher personally collected data from the campuses, initially entering it into Epi Data 3.1 software. This data was later transferred to Statistical Package for Social Science (SPSS) software version 20.0. The data were conducted descriptive and inferential analysis and presented in the table

Results

Table 1. *Respondent characteristic*

Respondent Characteristic		Number	Percentage
Age of the respondent	Less than 20	90	36.0
	20-24	144	57.6
	More than 25	16	6.4
Age at Menarche	11	21	8.4
	12	63	25.2
	13	49	19.6

	14	36	14.4
	15	41	16.4
	16	22	8.8
	17	18	7.2
Ethnicity of the respondent	Brahmin/Chhetri	154	61.6
	Janajati	56	22.4
	Newar	17	6.8
	Dalit	15	6.0
	Tarai Cast	8	3.2
The religion of the respondent	Hindu	232	92.8
	Buddhist	13	5.2
	Other	5	2.0
Marital Status	Married	69	27.8
	Unmarried	179	72.2

Most respondents fall within the age range of 20-24 (57.6%), followed by respondents younger than 20 (36.0%). A smaller proportion of respondents are over 25 (6.4%). The data indicate that the age at which respondents experienced menarche (the onset of their first menstrual period) varies. The highest percentage is reported for the age of 12 (25.2%), followed by ages 13 (19.6%) and 14 (14.4%). The percentages decreased for ages 15 (16.4%), 16 (8.8%), and 17 (7.2%). The lowest reported percentage is for the age of 11 (8.4%).

Most respondents identify as Brahmin/Chhetri (61.6%), followed by Janajati (22.4%). A smaller percentage of respondents identify as Newar (6.8%), Dalit (6.0%), and Tarai Cast (3.2%). The data shows that most respondents identify as Hindu (92.8%). A smaller percentage identify as Buddhist (5.2%), and an even smaller percentage identify as Other (2.0%). Marital Status: The data indicate that more respondents are unmarried (72.2%) than married (27.8%). It is important to note that these conclusions are based on the provided data alone. Additional context and information about the survey methodology, sample size, and demographic characteristics would be necessary to understand these respondent characteristics comprehensively.

Table 2. *Complications faced during menstruation*

Complications by menstruation	Yes		No	
	Number	Percentage	Number	Percentage
pain in the lumbar area	226	90.4	24	9.6
headache and tiredness	149	59.6	101	40.4
high blood flow and feeling weak	125	50.0	125	50.0
a pain in the leg and tiredness	112	44.8	138	55.2

It appears that the majority of respondents experienced complications related to menstruation, such as pain in the lumbar area (90.4%), headache and tiredness (59.6%), high blood flow and feeling weak (50.0%), and pain in the leg and tiredness (44.8%). The

percentages and numbers in the "No" column represent the respondents who did not report experiencing the specific complications mentioned.

The data suggest that many respondents experience various complications during menstruation. The most commonly reported complications include pain in the lumbar area (90.4%), headache and tiredness (59.6%), high blood flow and feeling weak (50.0%), and pain in the leg and tiredness (44.8%).

The findings highlight the prevalence of physical discomfort and symptoms experienced by individuals during menstruation. Pain in the lumbar area, commonly known as lower back pain, is a common complaint among menstruating individuals and can be caused by hormonal changes and muscle contractions in the pelvic region. Headaches and tiredness may also be attributed to hormonal fluctuations and the body's response to the menstrual cycle.

High blood flow and weakness during menstruation can indicate heavy menstrual bleeding, leading to fatigue and decreased energy levels. It is essential for individuals experiencing such symptoms to seek appropriate medical advice to rule out any underlying conditions that may contribute to excessive bleeding or weakness.

Pain in the leg and tiredness can be associated with menstrual cramps, also known as dysmenorrhea. These cramps result from the uterus contracting to expel its lining, leading to discomfort and pain in the lower abdomen and sometimes radiating to the legs. Proper self-care measures and medical interventions can help alleviate these symptoms and improve menstrual health.

It is essential to acknowledge that experiencing complications during menstruation is not uncommon, and providing adequate support and resources for individuals to manage their symptoms effectively is crucial. This can include promoting awareness about menstrual health, providing access to menstrual hygiene products, and encouraging individuals to seek medical advice if their symptoms significantly impact their daily lives or indicate underlying health concerns.

Table 3. *Complications during menstruation for the respondent*

Complication during menstruation	Yes		No	
	Number	Percentage	Number	Percentage
is severe stomach pain	86	34.4	164	65.6
include high blood flow and admission and hospital	30	12.0	220	88.0
and not being able to attain college	86	34.4	164	65.6
burning micturition	26	10.4	224	89.6
during itching in the genital area	36	14.4	214	85.6
is irregular menstruation	93	37.2	157	62.8
Complication due to menstruation is an infection of the reproductive tract infection	38	15.2	212	84.8

The data indicates that many respondents experience various complications during menstruation. These complications include severe stomach pain (34.4%), high blood flow

requiring admission to the hospital (12.0%), inability to attend college (34.4%), burning micturition (10.4%), and itching in the genital area (14.4%), irregular menstruation (37.2%), and reproductive tract infections (15.2%).

The findings highlight the diverse range of complications individuals may experience during menstruation. Severe stomach pain can indicate menstrual cramps, or dysmenorrhea, caused by uterine contractions during menstruation. This pain can vary in intensity and may affect daily activities and well-being.

High blood flow requiring hospital admission suggests heavy menstrual bleeding or menorrhagia. Excessive menstrual bleeding can lead to significant blood loss, fatigue, and a need for medical intervention to manage the condition effectively.

The inability to attend college due to menstrual complications may include severe pain, heavy bleeding, or other symptoms that interfere with academic pursuits. Menstrual health issues should be recognized as valid reasons for individuals to seek support and accommodations to ensure their educational opportunities are not hindered. Burning micturition, or a burning sensation during urination, may indicate a urinary tract infection or other related issues. It is essential to address these symptoms promptly to prevent further complications and discomfort.

Itching in the genital area may be caused by various factors, including Irritation from menstrual products, hormonal changes, or infections. Proper hygiene practices and medical attention can help alleviate these symptoms if necessary. Irregular menstruation, characterised by unpredictable or inconsistent menstrual cycles, can be attributed to hormonal imbalances or underlying health conditions. Monitoring and addressing irregularities can help identify underlying causes and facilitate appropriate management. Reproductive tract infections can occur during menstruation due to changes in pH levels and increased vulnerability. Prompt diagnosis and treatment are essential to prevent complications and ensure reproductive health.

Menstruation Hygiene Practices of the Respondents

Table 4. *Remedial action for the pain during menstruation*

Remedial Action	Yes		No	
	Number	Percentage	Number	Percentage
take medicine	99	39.6	151	60.4
putting the hot bag	167	66.8	83	33.2
taking nutritious food	168	67.2	82	32.8
taking a rest	191	76.4	59	23.6

The data reveals that respondents employ various remedial actions to alleviate menstrual complications. The most prevalent methods include taking medicine (39.6%), using a hot bag (66.8%), consuming nutritious food (67.2%), and resting (76.4%). Medicine intake involves over-the-counter pain relievers or prescribed drugs to alleviate cramps, inflammation, or hormonal imbalances. Applying heat via a hot bag relaxes uterine muscles, boosts blood flow, and eases pain. Nutritious diets, rich in vitamins and minerals, help manage menstrual symptoms. Rest aids recovery, stress reduction, and fatigue management. These practices exemplify individuals' self-care for menstrual challenges. Healthcare professionals should

assess severe or chronic symptoms for underlying conditions. Many proactively seek remedies, reflecting the need for practical solutions. Raising menstrual health awareness, offering hygiene products, and supporting self-care enhance well-being. Healthcare providers are vital in educating about remedies, usage, and effectiveness.

Table 5. *The person provides information about menstruation*

Person providing information	Yes		No	
	Number	Percent	Number	Percent
Mother	177	70.8	73	29.2
Elder sister	97	38.8	153	61.2
Grand Parent	20	8.0	230	92.0
Friends	84	33.6	166	66.4

The data underscores that respondents primarily rely on their mothers (70.8%) and elder sisters (38.8%) for menstruation information. Friends (33.6%) also contribute, while grandparents (8.0%) are less influential. With firsthand experience, mothers are crucial educators, offering guidance and support. Elder sisters share relatable insights. Though grandparents have a minor role, they can address queries. Friends foster open conversations, normalizing the topic and reducing stigma. This highlights varied information sources impacting understanding and attitudes. Effective menstrual education should encompass formal channels like schools, family, and friends. Future research can assess information quality and its effects on health practices. Encouraging open dialogues and inclusive discussions ensures accurate and supportive menstruation knowledge from diverse sources.

Table 6. Support provided during menstruation by the family member

Support during menstruation by providing	Yes		No	
	Number	Percentage	Number	Percentage
More than usual	102	40.8	148	59.2
Take medicine while the pain	116	46.4	134	53.6
Take medicine at the time of Headache	59	23.6	191	76.4
Take nutritious food and Legume good	103	41.2	147	58.8
take rest and manage all food	139	55.6	111	44.4

The data indicates that respondents utilise diverse support methods during menstruation. Many take extra measures (40.8%) to manage discomfort, including medication for pain relief (46.4%) and specifically for headaches (23.6%). Nutritious food, particularly legumes (41.2%), and managing food intake and rest (55.6%) are standard practices. Many respondents adopt additional measures, suggesting an active approach to address menstruation's challenges. Pain management through medication is widespread, highlighting

its role in support strategies. Nutritious food, especially legumes, showcases awareness of diet's impact on well-being. Rest and mindful food management demonstrate recognition of self-care's importance during menstruation. These findings emphasis the multifaceted nature of menstrual support, encompassing self-care, pain management, and dietary considerations. They underscore individuals' individualized approach to address menstruation, underscoring the need for tailored and holistic menstrual health support.

Table 7. *Types of sanitary pad use*

Use of sanitary Pad	Yes		No	
	Number	Percentage	Number	Percentage
Sanitary pad	234	93.6	16	6.4
Reusable sanitary pad	73	29.2	177	70.8
Cloth is used	86	34.4	164	65.6
Clean cloth	102	40.8	148	59.2

According to the presented data, most respondents (93.6%) use sanitary pads for menstrual hygiene, while a smaller group (29.2%) opts for reusable sanitary pads. Notably, a significant portion (34.4%) uses cloth, focusing on a clean cloth (40.8%) for managing menstruation. Sanitary pads are widely used (93.6%), and reusable pads (29.2%) offer an eco-friendly alternative. Cloth usage (34.4%) is also prominent, and spotless cloth (40.8%) indicates hygiene-conscious practices. It is essential to consider survey context, sample size, demographics, and cultural factors for comprehensive interpretation.

Table 8. *Way of cleaning the home used pad*

Cleaning of Home use pad	Yes		No	
	Number	Percentage	Number	Percentage
Wash with soap and dry in the sun	145	58.0	105	42.0
wash with clean water	25	10.0	225	90.0
Never reuse	31	12.4	219	87.6

Most respondents (58.0%) preferred washing their home-use pads with soap and drying them in the sun. A smaller percentage (10.0%) mentioned washing with clean water, while a minority (12.4%) reported not reusing pads. These findings reveal various cleaning practices for home-use pads among respondents, influenced by cultural norms, preferences, and resources. Washing with soap and sun-drying (58.0%) aligns with hygiene standards, aiding in stain removal and disinfection. Washing with clean water (10.0%) is an alternative when soap is unavailable. It is essential to consider these practices within their respective contexts.

Table 9. *Cleaning of the pad at the time of menstruation*

Cleaning of Pad	Yes		No	
	Number	Percentage	Number	Percentage
Wash with soap and dry in the sun	145	58.0	105	42.0
wash with clean water	25	10.0	225	90.0
Never reuse	31	12.4	219	87.6

The data highlights various approaches to cleaning menstrual pads among respondents. Most (58.0%) reported washing pads with soap and sun-drying, a common and effective

method of ensuring cleanliness and hygiene. Meanwhile, a smaller percentage (10.0%) opted for washing with clean water, and a minority (12.4%) stated they never reuse pads.

Washing with soap and sun-drying is prevalent, aiding in stain removal and disinfection through soap's cleaning properties and the sun's natural antimicrobial effects. Conversely, washing with clean water may offer less effectiveness in stain removal and disinfection than soap. Encouragingly, a noteworthy proportion prioritizes not reusing pads, which is essential to prevent bacterial growth and potential health risks.

Promoting awareness about the significance of using soap for thorough cleaning and avoiding pad reuse is crucial. Educating individuals about proper hygiene practices can contribute to their well-being during menstruation, ensuring a healthy and safe experience.

Table 10. *Pad management during menstruation*

Management of Pad	Yes		No	
	Number	Percentage	Number	Percentage
Collect at dustbin and send to the municipality	240	96.0	10	4.0
Put in college dustbin	215	86.0	35	14.0
Buried in soil	12	4.8	238	95.2
Through everywhere	4	1.6	246	98.4

The data highlights the commendable disposal practices of respondents for used sanitary pads, with most (96.0%) sending pads to the municipality for proper disposal. This reflects hygienic and environmentally conscious waste management. Additionally, a significant proportion (86.0%) uses college dustbins, indicating awareness of clean environments in educational settings. However, some bury pads (4.8%) require attention to sustainability and hygiene. A small fraction (1.6%) indiscriminately disposes, emphasizing the need for improved waste management education. Promoting responsible disposal through designated bins, waste management guidance, and eco-friendly products is vital. Collaboration among government, NGOs, and educational institutions can enhance menstrual waste management and hygiene awareness. The findings confirm positive practices in menstrual waste management.

Conclusion

Comprehensive menstrual health education is crucial, highlighting the impact of cultural beliefs. Effective management of complications requires support, accurate information, and open discussions. Poor hygiene affects adolescent girls and women. Accessible materials, sanitation, and dispelling taboos influence menstrual practices.. Further research with a larger sample size and attention to regional and cultural differences is advised. Comprehensive menstrual health education programs should cover hygiene, management, and debunking myths.

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