Journal: Texila International Journal of Academic Research
Publisher: Texila International Journal
ISSN: 2520-3088
Volume 13 Issue 1, 2026
DOI: 10.21522/TIJAR.2014.13.01.Art010

Silent Struggles: Menstrual Hygiene Challenges Faced by Female University Students in Uganda

Josephine Namyalo[1,2*], Mukooza Edward[1], Faith Musinguzi[3], Emmanuel Otieno[1], Robert Basaza[1,2]

[1]*Department of Public Health, Uganda Christian University, Mukono, Uganda*
[2]*Save the Mothers, East Africa, Uganda*
[3]*School of Education, Uganda Christian University, Mukono, Uganda*

Abstract

Menstruating individuals face barriers in managing their periods safely and with dignity, especially in low-and middle–income countries like Uganda. Menstrual health interventions have focused on schoolgirls, assuming university students have fewer challenges. However, female university students in Uganda face significant challenges. Thus, the objective of this study was to explore challenges faced by female university students in Central and Southwestern Uganda through a socio-ecological perspective. A phenomenological design was used. A sample of 88 participants was purposively selected using a two-stage stratified sampling technique. Four focus group discussions and 16 key informant interviews were conducted to collect data. Interviews were transcribed and analysed thematically using NVivo 12 software. These were complemented by structured observations of WASH facilities. The socio-ecological model (SEM) is a public health framework that describes how health is impacted at multiple levels including individual, interpersonal, community, organizational and policy levels. Key themes were identified, and challenges contributing to menstrual hygiene were categorized as per the SEM. The findings showed that female students experienced physical pains and missed classes hindering their education. Also, linking menstruation to sorcery led to fears related with disposal of menstrual absorbents and inadequate WASH infrastructure, which contributed to poor menstrual hygiene management reflecting systemic failures at universities. Many female students had knowledge gaps about menstrual hygiene management based on biases of cultural taboos and practices. They lacked confidence in managing their menstruation while at university, highlighting the need for universities to establish programs and policies that promote their well-being and academic success.

Keywords: *Health Education, Menstruation, Menstrual Hygiene Products, Sanitation, Universities, Uganda.*

Introduction

The concept of menstrual hygiene management (MHM) is becoming acknowledged as a critical public health and gender-equity concern in all parts of the World, and it is specifically mentioned in the United Nations Sustainable Development Goals (SDG 5 and SDG 6.2). Poor menstrual hygiene in low- and middle-income contexts has been linked to a variety of negative consequences, including reproductive tract infection and poor academic achievement, to stigma related mental disorders [1], [2]. According to the definition developed by the World Health Organization (WHO) and UNICEF, menstrual hygiene management (MHM) is the application of clean menstruation management resources,

Received: 29.11.2025 ***Accepted: 17.12.2025*** ***Published on: 30.01.2026***
****Corresponding Author: njozena@gmail.com***

which can be replaced privately, as well as the availability of sufficient water, soap, and sanitation options [3].

Uganda ratified the 2015 Menstrual Hygiene Management (MHM) Charter and implemented a national policy framework that prioritizes the delivery of and access to affordable menstrual products, school-based education, and sanitation infrastructure [4, 5]. A national survey report in 2024 revealed that 64 per cent of women in Uganda continue to face period poverty, meaning they cannot afford or access sanitary products and proper facilities [6]. This is further worsened by a deep-seated stigma, taboos, and the absence of gender-responsive services in state institutions [7].

Although existing research on menstrual hygiene management (MHM) in Uganda has primarily focused on primary and secondary school girls, a significant gap remains regarding university students, who face unique challenges. A 2022 survey at Makerere and Kyambogo University found that female students lacked access to clean, private toilets with running water during menstruation [8]. Similarly, a cross-sectional study among female students in University for Development Studies, Tamale in Ghana revealed that 20% engaged in poor MHM practices [9]. These findings suggest that most sub-Sahara African universities often fall short in supporting menstruating students, highlighting the need for targeted interventions.

While Uganda has policy commitments, it is clear that there is a severe deficit of data regarding the particular MHM issues experienced by female students in universities at the country level, and scarcer studies that compare varying university settings. The evidence base prevents the formulation of context-specific interventions and the distribution of resources to campus facilities. Thus, most of the studies conducted so far are cross-sectional and have not addressed how individual, institutional, and socio-cultural factors interact to determine menstrual hygiene practices.

Theoretical Orientation

We adopted the social-ecological model as a theoretical framework for this study [10]. The SEM framework employs five interdependent levels- individual, interpersonal, organizational, community and public policy to investigate the influence on health behaviour at each level. Sharm et al., (2022) in Nepal used SEM framework to study MHM [11]. Though most menstrual hygiene management studies and interventions have been engrossed on individual and interpersonal levels, we adopted the SEM framework to investigate challenges faced by female university students in Central and Southwestern Uganda focusing on all five levels -individual, interpersonal, institutional, societal and policy. Promoting MHM is part of the efforts to achieve the United Nations' Sustainable Development Goals, which include targets for health, education, and gender equality [12].

Materials and Methods

Study Design and Setting

A qualitative contextual descriptive phenomenological design was employed at two select Universities. The identities of the two Universities have not been mentioned so as to remain anonymous. Campus A is a private university with an estimated 4,000 students located in the urban region of Central Uganda about 20 kilometers from the Kampala Capital City while campus B is a public University with an estimated 5000 students located in the rural region of South-western Uganda about 337 kilometers from the capital Kampala. The design focused on understanding participants' experiences within their natural environments. The universities were chosen to enable a comparative study of menstrual hygiene management among the continuing female students.

Study Population

The study population were female University students from both Universities. At campus A the female to male ratio of students was 49:51, while that of Campus B was 38:62.

Sample Size Determination

In this study, the data saturation criterion was used to determine the sample size. Data saturation was achieved after 88 interviews. The key informants were persons involved in menstrual hygiene management, including the female students, Directors of student affairs, female warden, District Health Officers and Guild leaders.

Sampling Technique

A two-stage stratified sampling technique was employed. In the first stage, universities were stratified into private and public institutions. In the second stage, a purposive sampling technique was used to select a total of 72 participants with 9 participants in each of the 8 Focus group discussions. A total of 4 focus group discussions (FGDs) were selected from each university. A total of 16 key informant interviews were conducted from each university.

Inclusion and Exclusion Criteria

Female undergraduate students who were within their reproductive age and willing to participate in the study were selected. Excluded from the study were students in medical sciences and those who had never experienced menstruation or who had not had a period in the previous year before the study. Postgraduate and part-time students were excluded from the study because they might have been un-available at the time of the study.

Data Collection

Key Informant Interviews (KIIs), observations, and focus group discussions were used as the methods of data collection. A discussion guide was used to conduct FGDs which took an average of one hour and thirty minutes each. The subjects covered were the experiences of menstruation, access to sanitary resources, hygiene, stigma, and coping strategies. The KII interviews took about 45 minutes each and were also done using semi-structured guides. The KII interviews and FGDs were held in quiet and confidential spaces within the universities. Regarding the observations, non-participant observations were done using structured checklists to document the state of sanitary facilities, privacy, waste disposal facilities and the availability of water and soap. Photographs and field notes were used to supplement the observations. The principal investigator was assisted by two experienced research assistants who were trained prior the activity to help in data collection. A pretest of the FGD and KII guides was done among 50 students at Uganda Institute of Allied Health and Management Sciences, Mulago, in Kampala city. From the pre-test results, we were able to estimate the time to complete an interview, the validity of the questions, acceptability of the tool and also adjusted the questions that were considered sensitive.

Data Analysis and Management

The thematic framework approach was employed [13] using the SEM for data analysis [14]. Transcripts were imported into NVivo 12 to be organized and codes generated inductively. Analysis was conducted in a number of steps including familiarization, coding, theme development and interpretation.

Trustworthiness

The study used a phenomenological design and a two-stage stratified sampling technique to select participants, which enhanced credibility. Data collection methods included focus group discussions, key informant interviews, and structured observations, allowing for triangulation of data. The use of NVivo 12 software for thematic analysis added to the

study's rigor. The study's findings are supported by direct quotes and observations, increasing dependability. In terms of reflexivity, the research assistants exhibited neutrality and reported to the findings verbatim so as to limit personal biases. The study focused on female university students in Central and South Western Uganda, which may have limited transferability to other contexts but provides lessons to similar settings.

Results

Demographic Characteristics of the Participants

A total of eight key informant interviews and four focus group discussions (FGDs) were performed from each of the Universities. Participants in the FGDs in the interviews were continuing female students and represented different countries: Uganda, Kenya, Rwanda. A total 16 key informant interviews were conducted from individuals holding specialized knowledge and expertise on MHM.

Table 1. Age and Number of Participants in the 4 KI Interviews and the 8 FGDs in the Study

Age group (Years)	Focus Group Discussion (FGDs)	Key Informant Interviews (KII)	Total
19-21	36 Participants (4-FGDs)	8 Participants	44
22- 24	36 Participants (4-FGDs)	8 Participants	44
Total	72 Participants (8 -FGDs)	16 Participants	88

Observations of Universities' WASH Conditions

Water Access Point

The university toilets had water access points and running water for hand-washing. The facilities were located within and around the toilets. At Campus A, there were no pit latrines but only water borne toilets while Campus B had both water-borne toilets and pit latrines. Some of the paths to the water access points were not well lit. Hand-washing water points (water taps) were available at both campuses. However, there was poor light inside some toilets at campus B. The water access points looked clean, with no stagnant water and some had hand soap for practicing proper hygiene (Figure 1).

Figure 1. Indoor Hand-washing Facility with Limited Natural Lighting, Campus B

There was no suggestion box where the opinions of female students could be collected at both A and B campuses. Several female students when talked to by the female research assistant, expressed the need to have a suggestion box through which to communicate their hygiene concerns regarding the WASH facilities.

Toilet Facilities

The females' toilets were clean both in the toilet bowls and on the floor. And toilets were not smelly. However, there were no sanitary materials or trash bins for menstrual waste disposal in some of the toilets. Some of the toilets at campus A, although they were flushable, did not have proper seats and lids implying that they were uncomfortable for use (Figure 2 and 3). For instance the squat toilets are less comfortable for some users especially those with joint problems, mobility issues and the disabled (Figure 2) than the seated toilets (Figure 3).

Figure 2. Water Flush Toilet at Campus B

Figure 3. Water Flush Toilet at Campus A

The water flush toilets had labels for female use and the doors were lockable from inside. At Campus A, toilets were also labeled including those for the disabled. However, some wash facilities were lacking labels from Campus B (Figure 4 and 5). The female water flush toilets were physically separated from male water flush toilets at both universities. Most facilities were water-borne and there was only one pit-latrine block available at campus B. Furthermore, at campus B, some of the pit-latrines were not clearly marked for male and female (Figure 6).

The flush toilets and pit latrines were constructed to ensure they could not be peered into from outside. There were neither redundant structures nor bush at both campuses. At Campus B, many times men were observed using female toilets/latrines and females using male toilets/latrines raising concerns for the safety and security of female students. Furthermore, there was neither space to wash or to dry reusable sanitary pads near flush toilets and pit latrines at both campuses.

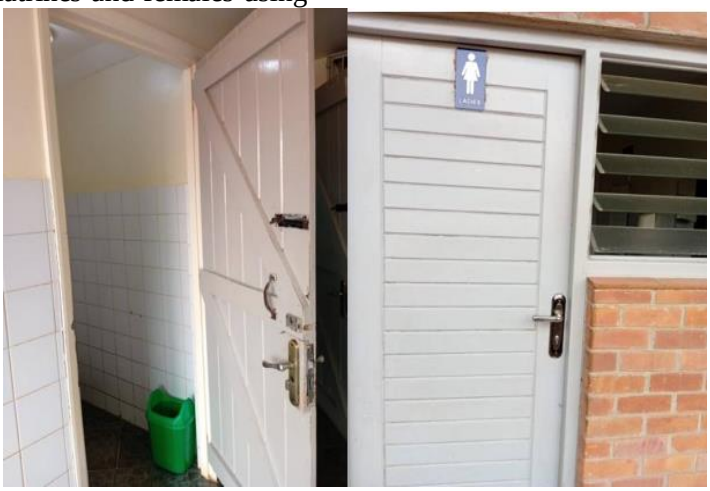

Figure 4. Labeled Toilets at Campus A

Figure 5. Labeled Toilets at Campus B

Figure 6. Non-water Borne toilet at Campus B

Bathing and Incinerator Facilities

The Campus bathing facilities for female students were observed to be unhygienic at campus B (Figure 7). A dysfunctional incinerator for burning waste including used menstrual materials was observed at campus B (Figure 8). However, for campus A, waste disposal was outsourced: a private company collects both medical and all other waste regularly.

Figure 7. Dirty Bathing Facility, Campus B

Figure 8. Dysfunctional Incinerator, Campus B

Observation results were triangulated with results from FGDs and from KIIs. Three themes were generated from the FGDs and the KIIs; receiving knowledge on MHH, menstrual socio-cultural beliefs and myths, and challenges faced by menstruating female students while managing their hygiene.

Theme 1: Knowledge on MHM

Sub-theme 1: Insufficient Expertise

Involvement of parents in the aspects of MHM was considered a turning point towards achievement of proper menstrual hygiene management by the majority of participants. One participant said:

> ‘*’The first time I started my period, I felt so shy. I wouldn't tell my parents what I was experiencing. I was at school and when I got home my mother tried to ask me if I started my period. I strongly faced denial. This affected my hygiene by then.*’’ Reported FGD 3 A

And then added:

> *‘’……. I learned from my previous primary school and mother. Before I experienced menses, I had already learned from fellow students what menses meant. But*

I didn't know how to wear the pad. So, when I experienced menses, my mother taught me how to put it on……. but she didn't tell me anything other than that. And the irony, she's a doctor.'' FGD 3 A

Then another participant explained:

''My first time to use a pad, I was in a secondary boarding school. Though, I used to see my friends using pads I didn't know how to use it. With the help of my friends, I learned how to use it. My mother was a very shy woman. She never taught us anything concerning menstruation and female matters.'' FGD2 A

But some participants showed poor knowledge about menstruation and use of menstrual hygiene products. During the discussions, it was obvious that participants also need to be provided with information related to MHM. The participant asserted that:

'' I would wish to know more about the usage of sanitary pads and the recommended time for usage……. Are the reused sanitary pads safe?'' FGD 4, B

Sub-theme 2: Safe Menstrual Hygiene Management

The main stay of safety considered by majority of the participants was influence of social support for women in different ways. Providing menstrual care was viewed both as a social and very private issue by the participants: very few mentioned that they discussed this subject with other people, including parents. Though the support networks exhibited by the university counsellor, nurse, student's guild and university community existed for the female students, many of the participants felt isolated and overwhelmed. One participant explained that:

''I feel safe with men around me when in menses. Because most men value menstruation than some ladies. ……. ladies take it normal. I remember in high school, there was a girl who had menstruation and stood up in class without knowing she had it. While the girls laughed at her a boy stood up, went and covered her. And told her, the stain from her menses was the reason students were laughing.'' FGD2 A

To the contrary, another participant excluded the possibility of seeking support or ask someone if her period started unexpectedly in class at the University. She responded emphatically in protest of sharing information about her menstrual status as the rest of the group laughed it off:

''I would not wish to share with anyone. Even if it happens when I am in Class, I would get out, head to the hostel and help myself. This is because sometimes when you tell a friend to help especially when there is no money, they end up talking about you. This may stigmatize me.'' FGD 5, B.

Menstruation and menstrual hygiene are critical issues which have not been explained well and given due attention as a single program because it is normally embedded in the school health program and implementation is school based. So, the university students are excluded from this program. More so, MHM has been marginalized within the reproductive health agenda. However, the management of menstrual hygiene requires collaborative efforts from government, universities and communities.

''We don't have policies to guide menstrual hygiene and activities in universities. As a result, there is a knowledge gap and lack of pads. Some university students lack knowledge on how to use them and the practical aspect of use is different coupled with poor disposal and infections resulting from poor MHM." KII, A 1.

Theme 2: Socio-cultural Beliefs and Myths

Sub-theme 1: Social Expectations towards MHM

Some participants reported that female students threw used disposable commercial

pads in the toilet instead of the pad bins where people were less likely to see the used product. Majority of participants were aware of some cultural beliefs and myths which included associating menstruation to sorcery and witchcraft, leading to young women' fears related with the disposal of menstrual absorbents. The held a belief that menstruation is unhealthy and is a basis of embarrassment. One participant explained that;

''We are from different backgrounds. You may find a student disposed sanitary pads in a toilet instead of a pad bin with a belief that menstrual blood is impure and should avoid having people see the used pads. This is misuse and risky for all of us users of the toilets." FGD 5, B.

Others reported to wrap the used pads in plastic bags and put them into bins for disposal off campus, so they were less visible. A participant said:

''……. And as such I do not like males to look into my bag because they could see either a pad, or worse still a used one which could embarrass me.'' FGD 1A.

However, some participants appreciated menstruation as part of growth and life that needed to be discussed openly. A participant said:

''In my culture menstruation is overwhelmingly shunned upon. You can't talk about it openly, but for me personally, I think it's a normal experience that you need to go through as you grow……. it's a sign of growth.' FGD, 6A.

Sub-theme 2: Restrictions towards MHM

Most participants expressed that restrictions (taboos) still exist in their cultures and communities. Among the restrictions mentioned were food preparation, movements and attending prayers by menstruators. This was supported and reiterated by a participant:

''In my family and society, when a female is in menstruation she is not supposed to cook and touch on items used by the public. Also, they have to limit movements and be seated in one place because one is considered to be dirty.'' FGD6, A

Theme 3: Challenges faced by Menstruating Female Students

Subtheme 1: Society's Concealment of the Menstrual Cycle

During their menstrual cycle, female students face a range of issues, including stress, anxiety about leaking, embarrassment, headaches, and abdominal cramps. They experience sadness, mental anguish, and anxiety. The Menstruators are often stigmatised when they freely speak about their experience and speaking out is also treated as a taboo in many African cultures. A participant said:

''I do not want to share with anyone about my menstruation; it's a private issue.'' FGD3 B

Regarding the influence of MHM towards education, most respondents reported headaches, cramps and fear of staining during class times;

''Physical pains prevent me from concentrating in classes and activities. Fear of staining the clothes and cramps stop me from attending the classes." Female student 5, B

In addition, a number of key informants elucidated similar expressions. When asked what respondents' thought were the most difficult challenges for female students at the university one participant narrated;

' *'Lack of concentration in class due to the physical pains is a challenge. This cuts across the board irrespective of being needy or not being a needy student. This is coupled with difficulty in accessing the campus clinic due to limited operating hours (3 days/week) and staff shortages*." KII, B

Sub-theme 2: Lack of WASH resources for MHM

The study findings have revealed that female students are faced with several challenges such

as inadequate WASH facilities: no change rooms, no soap for showers, presence of male cleaners and lack of labels on toilets. These barriers deterred them from utilizing wash facilities for their menstrual hygiene and health.

> ‘’*Some toilets and washrooms are not even private because they are no labels on some toilets. As such one is not protected from other users. To the worst the presence of male cleaners in the women wash facilities deters from use of the facilities”* FGD1, B

Another student expressed a related concern:

> *‘’The only problem I face is the lack of good WASH facilities. If you have to change pads you have to move with your toilet paper and your soap, which is disturbing’’ FGD 7B.*

Another participant asserted emphatically that:

> ‘’*No change rooms for pads and showers to use during menses. For those who wish to shower and change to another pad, soap and toilet paper are lacking.* ’FGD 6 A

A key informant emphasized stigma as a major challenge to menstrual hygiene management for female students. The participant said:

> *‘’……stigma is experienced by some students as they feel having menses it’s a bad experience. A case in point is the disabled that are not catered for by the University. The wash facilities including toilets are not user friendly*.’’ KII, B 2

From an economic point of view, the findings revealed that some students cannot afford to buy sanitary pads. The majority of students from Campus B struggle so much, both materially and socially to buy sanitary pads than their counterparts at Campus A. The participants pointed out that the universities do not have pads or hygienic materials for changing. The participant said that:

> ‘’ *Most of the continuing female students are needy students who at times cannot afford to acquire sanitary pads. This precarious situation pushes students into commercial sex as they try to get money to help them get the sanitary pads*.’’ KII B 1

Discussion

This research investigated the challenges faced by female university students in Central and South Western Uganda through a socio-ecological perspective. The majority of the participants expressed practicing proper MHM amidst challenges influenced by multiple layers of the SEM including individual, interpersonal, institutional, societal and policy levels. Similar studies using the SEM framework were done in Nepal and Uganda on MHM [4, 11].

Individual Level

In this study, dysmenorrhea contributed to university absenteeism, decreased concentration and participation, and reduced academic performance. The fear of menstrual leakage and staining, also negatively influenced education. This is in line with similar studies done at University of Sydney in Australia, University of Illinois in USA, Nnamdi Azikiwe University in Nigeria, and Mbarara University of Science and Technology in Uganda [15-18]. Thus, multi-level evidence-based interventions aimed at improving menstrual health among university-going females are required. Study findings highlighted that there was a consistent knowledge gap. The majority of the students possessed either partial or wrong information about MHM and many of them had biases based on cultural taboos. This leads to misconceptions about menstruation and menstrual hygiene practices. Similarly, undergraduate female students in Nigeria and Ugandan Universities lacked knowledge on menstruation and hygiene [8, 19].

Interpersonal

This study indicated inadequate WASH facilities, presence of male cleaners and lack of labels on toilets as challenges experienced by female students. These barriers deterred them from utilizing WASH facilities for their menstrual hygiene and health. This agrees with

a similar study done in the West Bank, the participants reported inadequate WASH facilities [20]. This is contrary to a study done in Turkey and Ethiopia where students had enough WASH facilities and was associated with less morbidity [21, 22].

Also, findings show that students at both campuses alluded to inadequate access to soap and water in the washrooms. This is similar to a study in Ghana where 68 percent of the schools had water but only 16 percent had soap for hand-washing [23]. Several studies have indicated globally, WASH interventions are vital for public health and have a huge impact on education and social outcomes [12]. Further, both campuses had inadequate artificial lighting in the toilet and hand-washing facilities. This holds in line with increasing evidence that poor lighting increases violence, harassment among women and acts as a barrier to women using the facilities at night [24] and in fear of threatening safety concerns [25, 26].

Institutional and Societal Levels

The findings in this study indicate that there is concealed secrecy about menstruation and hygiene practices and linking of witchcraft to menstruation thereby compromising MHM. This is consistent with similar studies done in Bhutan and South Korea [21], Nigeria and Uganda [27, 28]. Also, participants reported wrapping pads in bags, and disposal into toilets. These poor MHM behaviors and practices are further consistent with findings in Nepal and Papa New Guinea which indicated that it's believed that menstruation is dirty and impure. More so, seeing menstrual blood was associated with causing bad luck, blindness and infertility [29]. Although cultural myths and beliefs appear to be one of the main drivers of poor menstrual hygiene management practices, the unhygienic customs were more common at Campus B than A. This could be that menstrual taboos and myths are a complex issue, deeply ingrained in the rural and preserved society from which majority of students came from. Campus B is still a young university of only 23 years while Campus A is over 28 years old. The student population, infrastructure, social amenities, and government funding in these universities are significantly different. Given that, Campus B does not enjoy the advantage of a huge diversity its cultural fusion is not yet shaped by diversity influences, creating a poor tapestry of traditions that reflect it's homogenous cultural status. Contrary to campus A which is characterized by its culturally rich and geographically diverse student body, with students hailing from better socio-economic backgrounds and ethnicities. This diversity could enrich the educational and cultural experience, allowing students to learn in a culturally rich and inclusive environment with proper MHM practices and behaviour. This is similar to a Ugandan WASH study on MHM among female students done at Kyambogo university against Makerere, Dar-es-salaam, and Bonn Universities in 2024 [8].

Policy Level

While awareness and supporting structures have been put in place for primary and secondary schools, in the universities such arrangement is still lacking. This is similar to a study done in Australia [30]. Further, this study revealed most of the university-enrolled students experienced period poverty characterized by inadequate access to menstrual health resources highlighting the urgency of addressing this issue. Through this study, there was no program and policy aimed at reducing period poverty at the campuses. This is indifferent from a study done at Purdue University, in USA which had a tailored promotional effort against period poverty aiming to reach the entire female student body [30]. In addition, Britain, Kenya, India, Canada, Australia and Germany are some of the countries that have not only eliminated the tax on menstrual hygiene products but also provide menstrual hygiene products for free to users of any women's gender in schools [31, 32]. By

acting on these findings, university administrators can play a crucial role in promoting menstrual equity and creating inclusive environments for all students who menstruate.

However, this study had strengths and limitations. The strength of the study lies in its phenomenological design of data collection, which provided a deeper insight into understanding MHM among female university students in Uganda. Despite this strength, the study had some limitations. It relied on self-reported data which may have been influenced by the ability to recall, their willingness to share personal and potentially sensitive information, and their desire to respond in a manner that would not tarnish the image of the institutions. The self-reported data was validated with observational data. Thus, the implication is that positive experiences identified could be upheld, while negative experiences should be addressed to deliver satisfactory MHM in these institutions or similar settings. As such, responding to these findings could have a direct effect on education and health sectors in Uganda.

Conclusion

This study suggests that the individual, interpersonal, institutional, societal and policy burdens related to menstrual experiences affect menstrual health and hygiene management among female university students in central and southwestern Uganda. The main menstrual challenges among female students reported are largely a knowledge gap, social cultural beliefs, having poor and inadequate WASH facilities, and limited access to WASH materials as well as policies to support MHM at university.

Recommendation

To improve menstrual hygiene practices, it is crucial to address these challenges and consider better WASH facilities, education and awareness, MHM programs, community support, and policy changes that prioritize MHM in universities for female students. Poor menstrual health and unmet menstrual needs influence several aspects of female students' lives, including their educational outcomes. Therefore, multi-level and evidence-based MHM interventions could help to improve menstrual health, hygiene and the social well-being of female university students at all levels of the socio-ecological framework.

Ethical Review and Approval

The ethical clearance was sought from the Research Ethics Committee of Uganda Christian University (UCUREC-2025-1908). The study received approval from Texila American University. Informed consent was sought from respondents and administrative permission was obtained from the relevant authorities before collecting data. The respondents were informed of their right to withdraw from the interview whenever they so wished. Participant confidentiality was safeguarded.

Funding

This work was supported by Uganda Christian University under Grant No.UCUJ-RF-2023M5

Acknowledgement

We would like to offer our deepest gratitude to all the participants for their consent and availability which enabled the conduct of the study. We also thank the management of the universities for their cooperation and ultimate dedication to the success of this research.

Data Availability

Raw data that was gathered in this research are not accessible to the public due to the confidentiality agreement with the research subjects. The data will however be made available to the author on a reasonable request by the principal investigator as well as co-authors. It is also possible to share anonymised data that can be used to confirm the results of the study with qualified researchers that satisfy

the terms of the confidentiality agreement in compliance with the accepted protocols of ethics. The interested parties may demand the access by using the secure data-sharing portal of the project.

Conflict of Interest

The authors declare that there is no conflict of interest.

Author Contribution

JN, RB, EO, EM: Conceptualization, Methodology, Formal Analysis; JN EO, EM, FM: Writing – Original Draft: RB, EM and supervision; JN: Project Administration; All authors contributed to the review and editing of the manuscript; All authors read and approved the final version of the manuscript.

References

[1]. Ahmed, T., Hasan, M. K., Aunto, T. K., Ahmed, T., and Zahid, D., 2025, Menstrual hygiene knowledge and practices among adolescent schoolgirls in flood-affected rural Bangladesh. *Reproductive Health*, 22(1), p.87.

[2]. Jaafar, H., Ismail, S. Y., and Azzeri, A., 2023, Period poverty: a neglected public health issue. *Korean journal of family medicine*, 44(4), p.183.

[3]. Ishimwe Bazakare, M. L., Ngabo Rwabufigiri, B., and Munyanshongore, C., 2024, Knowledge and practice toward menstrual hygiene management and associated factors among visual impaired adolescent girls: a case of two selected institutions in Rwanda. *Therapeutic Advances in Reproductive Health*, 18, p.26334941241303518.

[4]. Ssemata, A. S., Ndekezi, D., Kansiime, C., Bakanoma, R., Tanton, C., Nelson, K. A., Hytti, L., Neema, S., Torondel, B., Seeley, J., and Weiss, H. A., 2023, Understanding the social and physical menstrual health environment of secondary schools in Uganda: A qualitative methods study. *PLOS global public health*, 3(11), p.e0002665.

[5]. Ministry of Education and Sports. Menstrual health guidelines for schools and education institutions in Uganda, 2023. https://www.education.go.ug/wp-content/uploads/2025/05/final-guidelines-for-printing-2024.pdf

[6]. Report of the Auditor General. value for money audit report on government of uganda's efforts,through ministry of education and sports (moes), to support the management of menstrual health and hygiene in primary and secondary schools, December 2024. https://www.oag.go.ug/reports/2486

[7]. Rossouw, L., and Ross, H., 2021, Understanding period poverty: socio-economic inequalities in menstrual hygiene management in eight low-and middle-income countries. *International journal of environmental research and public health*, 18(5), p.2571.

[8]. Nassozi, P., Kebirungi, H., Opit, E., Muweesi, C., Taddeo Kaahwa, Y., Sserwadda, L., Kaweesi, M., Kuteesa Mugenyi, D., Mutebi, A., Isabirye, C., and Tomusange, R., 2024, Assessment of female students' perception on access and utilization of water and sanitation facilities for menstruation management in higher education institutions in Uganda. *Sexuality, Gender & Policy*, 7(4), pp.332-347.

[9]. Ameade, E. P., & Garti, H. A., 2016, Relationship between Female University Students' Knowledge on Menstruation and Their Menstrual Hygiene Practices: A Study in Tamale, Ghana. *Advances in preventive medicine*, 2016, 1056235. https://doi.org/10.1155/2016/1056235

[10]. Golden, S. D. and Earp, J. A. L., 2012, Social ecological approaches to individuals and their contexts: twenty years of health education & behavior health promotion interventions. *Health education & behavior,* 39(3), pp.364-372.

[11]. Sharma, A., McCall-Hosenfeld, J. S., and Cuffee, Y., 2022, Systematic review of menstrual health and hygiene in Nepal employing a social ecological model. *Reproductive health*, 19(1), p.154.

[12]. Dibaba, D. B., Alemu, B. M. and Debela, S. A., 2024, Impact of water, sanitation, and hygiene (WASH) interventions on gender-specific school

attendance and learning outcomes: A systematic review and meta-analysis protocol. *PLoS One*, 19(8), p.e0308144.

[13]. Yin, R. K., 2009, Case study research: Design and methods (Vol. 5). sage.

[14]. Bronfenbrenner, U., 1979, The ecology of human development: Experiments by nature and design (Vol. 352). *Harvard university press.*

[15]. Munro, A. K., Hunter, E. C., Hossain, S. Z. and Keep, M., 2021, A systematic review of the menstrual experiences of university students and the impacts on their education: a global perspective. *PloS one*, 16(9), p.e0257333.

[16]. Suleman, A., Krishna, S., Krishnakumar, D., Nemoto, K., Nguyễn, M. L. T., and Mehta, S. D., 2024, A pilot survey of students' menstrual attitudes, experiences, and needs on an urban university campus. *Women's Health*, 20, p.17455057241254713.

[17]. Ezebialu, I. U., Ezenyeaku, C. C., and Umeobika, J. C., 2021, Prevalence of dysmenorrhea and its contribution to school absenteeism among Nigerian undergraduate students. *Annals of Health Research*, 7(1), pp.59-66.

[18]. Ogwal, J. O., Ojuka, E., Migisha, R., Namayanja, R., Okello, S., Omolo, R. O., Muyambi, V., Enyang, J. J., Obeny, A., Ogwang, R., and Angulo, C., 2025, Menstrual disorder and associated factors among medical students in Uganda: a cross-sectional study. *Discover Medicine*, 2(1), p.305.

[19]. Esan, D. T., Tola, Y. O., Akingbade, O., Ariyo, S. A., Ogunniyi, B. I., and Agbana, R. D., 2023, Knowledge and Practice of Menstrual Hygiene among Female Undergraduates at a Private Tertiary Institution in Nigeria. *Pacific Rim International Journal of Nursing Research*, 27(4), pp.798-810.

[20]. Hassan, S., Ghandour, R., Bakri, L., Shwiki, S., Safi, S., Abuzaid, R., and Zeidan, H., 2023, Menstrual health and hygiene among young Palestinian female university students in the West Bank: a cross-sectional study. *BMJ open*, 13(3), p.e069222.

[21]. Hadımlı, A., Akan, A., Kardeş, G., Akkurt, B., and Saydam, B. K., 2024, Determination of menstrual hygiene management and genital hygiene behaviors of students: A university example from Turkey. *Revista da Escola de Enfermagem da USP*, 58, p.e20240113.

[22]. Adane, Y., Ambelu, A., Azage, M., and Mekonnen, Y., 2024, Assessment of the barriers towards menstrual hygiene management: evidence from a qualitative study among school communities: lessons from Bahir Dar city in northwest Ethiopia. *Frontiers in Reproductive Health*, 6, p.1445862.

[23]. Appiah-Brempong, E., Harris, M. J., Newton, S., and Gulis, G., 2018, Examining school-based hygiene facilities: a quantitative assessment in a Ghanaian municipality. *BMC public health*, 18(1), p.581.

[24]. Winter, S. C., Johnson, L., and Dzombo, M. N., 2023, Sanitation-related violence against women in informal settlements in Kenya: a quantitative analysis. *Frontiers in public health*, 11, p.1191101.

[25]. Fielding-Miller, R., Shabalala, F., Masuku, S., and Raj, A., 2021, Epidemiology of campus sexual assault among university women in Eswatini. *Journal of interpersonal violence*, 36(21-22), pp.NP11238-NP11263.

[26]. Ikogho, D. E., and Onoharigho, F. D., 2025, Menstrual waste management practices among female students in Niger delta development commission hostels in educational institutions in Niger delta, Nigeria. *BMC women's health*, 25(1), p.60.

[27]. Edet, O. B., Bassey, P. E., Esienumoh, E. E., and Ndep, A. O., 2021, Attitudes, Beliefs and Perception of Menstruation Related Socio Cultural Practices and Menstrual Hygiene Management among In School Adolescent Girls in Cross River State, Nigeria. *African Journal of Biomedical Research*, 24(3), pp.363-369.

[28]. Namuwonge, F., Kizito, S., Ssentumbwe, V., Namatovu, P., Namuli, F., Tutlam, N. T., Nabunya, P., and Ssewamala, F. M., 2025, Culture, self-esteem and menstrual hygiene management among adolescent girls in Uganda: the impact of economic and family strengthening. *BMC Women's Health*, 25(1), p.230.

[29]. Castro, S., and Czura, K., 2025, Cultural taboos and misinformation about menstrual health management in rural Bangladesh. *World Development*, 188, p.106871.

[30]. Morley, M., Cava, I., Glass, N., Salwitz, E., Hughes-Wegner, A. T., and DeMaria, A. L., 2025, Addressing Period Poverty: Evaluating a Free Period Product Program in a University Setting. *Health Promotion Practice*, p.15248399241311590.

[31]. Rawat, M., Novorita, A., Frank, J., Burgett, S., Cromer, R., Ruple, A., and DeMaria, A. L., 2023, "Sometimes I just forget them": capturing experiences of women about free menstrual products in a US based public university campus. *BMC Women's Health*, 23(1), p.351.

[32]. Government of Uganda, *Uganda issues Tax Amendment Acts for 2025*, Kampala, Uganda, 2025.