

**KNOWLEDGE, ATTITUDES AND PRACTICES OF MENSTRUAL HYGIENE
MANAGEMENT AMONG TEENAGE GIRLS IN NANTABULIRIRWA WARD
GOMA DIVISION MUKONO MUNICIPALITY UGANDA**

FAITH NAYEBALE

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**A DISSERTATION SUBMITTED TO THE FACULTY OF PUBLIC HEALTH, NURSING AND
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**UGANDA CHRISTIAN
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DECLARATION

I Faith Nayebale, declare that this research dissertation on **Knowledge, attitude and practices towards menstrual hygiene management among teenage girls in Nantabulirirwa, Goma Division, Mukono Municipality**, is my original work and has never been submitted to any University or higher institutions of learning for any award.

Signed: 

Date: 19th/9/2024

Faith Nayebale

APPROVAL

I Prof. Robert Basaza declare that I have supervised Faith Nayebale on the topic “Knowledge, attitude and practices towards menstrual hygiene management among teenage girls in Nantabulirwa, Goma Division, Mukono Municipality, Uganda’ The research dissertation was conducted under my supervision in accordance with the research regulations of Uganda Christian University and is submitted with my approval.

Signed 

Date 19th September, 2024

Prof. Robert Basaza

DEDICATION

I dedicate this research work to the mothers worldwide who have been heroes in their motherhood journey and my beloved husband, Mr. Francis Nuwagira and our dear children, Janelle, Jireh, Jaelynn, for their spiritual and moral support

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LIST OF ACRONYMS AND ABBREVIATIONS

LMIC	Low- or Middle-Income Country
MHM	Menstrual Hygiene Management
NGO	Non-Government Organization
SEM	Social Ecological Model
WASH	Water, Sanitation and Hygiene
WHO	World Health Organization
UN	United Nations
UNICEF	United Nations Children’s Fund

DEFINITION OF TERMS

Teenager	Persons between the ages of 13 - 19 years. The transitional stage of physical and psychological development that generally occurs during the period from puberty to adulthood.
Menarche	The start of menstrual function especially the initial menstrual period of a female human being.
Menstruation, period	or Normal vaginal bleeding that occurs as part of a woman's monthly cycle.

ABSTRACT

Introduction: Menstruation is a natural physiological process and the teenagers undergoing through it require support from different fronts. Globally, 500 million women and teenager girls have poor access to menstrual hygiene facilities, limited education and knowledge about menstrual and its proper hygienic practices. In Uganda, many women (65%) are unable to adequately meet menstrual health and 61.7% of teenagers' miss school in rural areas of Uganda. Menstruation is not regularly talked about openly making it difficult for girls to manage their periods. The study aimed at assessing knowledge, attitude and practices on menstrual hygiene management among teenage girls in Nantabulirwa slum, Goma Division, Mukono municipality.

Methodology: A descriptive analytical cross sectional mixed study was employed involving the use of quantitative and qualitative methods of data collection. The study used both purposive non-random and simple random sampling methods to select a total of 325 teenagers. Data was analysed using Content Thematic Analysis and Statistical Package for Social sciences version 20 software package.

Results: Findings show that teenage girls have negative attitudes towards menstrual hygiene management due to stigma from boys, cultural beliefs and perceptions on menstrual hygiene management. However, the teenagers who lived with both parents and in an enabling school environment had more knowledge and better practices. Overall level of knowledge of the adolescent girls on menstrual hygiene management was good due to the menstrual education received before menarche. At $P < 0.05$, there was significant association between menstrual education attainment with age and the education level of the respondents. There was also a significant association ($p < 0.05$) between menstrual education attainment and family type, living arrangement and parent's level of education. On social economic factors, there was a strong association between menstrual education attainment and interval of towel change during periods, menstrual choice influencer and the used towels disposal. On the cultural aspects, the results showed that at $p < 0.05$, there was significant association between menstrual education attainment and tribe.

Conclusion and recommendations:

The study establishes that the overall level of knowledge of the adolescent girls on menstrual hygiene management was good. Overall, the study findings show teenage girls have negative attitudes towards menstrual hygiene management. The attitudes of the girls were influenced by cultural beliefs, stigma from boys/men, and perceptions on menstruation. Practices of the teenage girls towards menstrual hygiene management was mostly good. During menstruation it was manifested that majority of the teenage girls practiced safe practices.

Addressing the findings by involving the men in menstrual hygiene management, need for parents to educate their teenage girls at an early stage, establishing incinerators at strategic sites for proper disposal, amongst others would bridge the gaps and improve the menstrual hygiene management.

CHAPTER ONE: INTRODUCTION

1.1 Introduction to the chapter

The World Health Organization defines teenagers as young people between the ages of 13 and 19 years (WHO, 2022). Teenagers' population is 1.3 billion which constitutes about 16% of world's total population (UNICEF, 2022). On the other hand, menstruation is a physiological process in female teenagers which approximately starts at age of 9-12 years old (Balqis, Arya & Ritonga 2016). While menarche is a stage in a woman's life, representing a social and physical transition from childhood. Averagely, a woman will menstruate 6-7 years of her life span (Mahon et al; 2022).

The World Health Organization (WHO) and United Nations International Children's Emergency Fund (UNICEF) defines Menstrual Hygiene Management (MHM) as the use of clean material to absorb or collect menstrual blood. Furthermore, one must have reliable access to appropriate facilities to keep themselves desirably clean (UNICEF, 2019). But Low- and Middle-Income Countries (LMICs) lack the materials and facilities for appropriate menstruation hygiene management (Wasan 2022). Menstrual hygiene practice is influenced by, age, educational status of teenage girls, educational status of father and mother, family size, living arrangements, family monthly income and associated determinants. (Hussein, Gobena, & Gashaw, 2022; Daniel, Kejela, Fantahun *et al.*, 2023). Factors affecting MHM also include lack of water, Sanitation and Hygiene facilities, lack of latrine or toilet privacy, knowledge of teenage girls about menstruation and fearing of teasing by boys (Deriba, Garedew, Gemed, 2022).

Globally, 500 million women and teenager girls have poor access to menstrual hygiene facilities (Jisha 2021). In addition, 2.3 billion girls and women don't manage their menstruation safely due to lack of facilities for menstrual health management, ignorance, and high cost. Consequently, carry out unhygienic practices and old clothes, or other menstrual absorbents, which may predispose them to infections and other related health consequences (Mulugeta Demmu, Shifera, Ayana et al., 2023). The teenage stage is a time for growth and puberty changes (sexual and reproductive maturation). However, there is strong recognition of the disproportionate sexual and reproductive health harms placed on adolescent girls in LMICs (Phillips-Howard, Caruso, Torondel, 2016). In Ethiopia, 92 % of the teenage girls were aware of menstruation before menarche, which refers to the first occurrence of menstruation. Their utilization of sanitary material was as low as 37.6 % and 62.4 % were using rags and pieces of cloth while 11% of girls change their menstrual cloths once a day (Fehintola 2017; Belayneh & Mekuriaw, 2019). The use of sanitary pads is as low as 18 % amongst Tanzanian women with the remainder using cloth or toilet paper (Upashe, 2015). In Uganda, menstruation which is a natural physiological process, is still dealt with in secrecy (Mahon and Fernandez, 2010; Ezatiru, 2022). Menstruation is considered a disease, curse, or sin by teenage girls in Uganda (Boakye-Yiadom, Aladago, Beweleyir, 2018). The teenagers in Uganda prefer reusable pads (Boakye-Yiadom, 2018). But, in areas where there are no support structures, menstruating girls' resort to unhygienic practices. Many teenage girls are raised in families that believe in taboos, superstitions and indulge in stigmas relating to menstruation (Mahon & Fenandos, 2010; Ezatiru 2022). Some of them use improvised materials including old pieces of mattresses, cotton wool, cloth,

newspapers, and leaves as absorbents (Chandra-Mouli & Patel, 2017; Kuhlmann, 2017). The Forum of African Women Educationists (FAWE - Uganda) reported that among 3 girls, 1 missed a school day throughout their menstrual cycle (Kirk and Sommer, 2016) and 61.7% of teenagers' miss school in rural Uganda (Chandra-Mouli & Patel, 2017).

1.2 Problem statement

Menstruation is a normal reproductive change in teenage girls which is expected to happen every 28 days. A menstruating teenage girl is supposed to maintain good hygiene by timely padding, taking a regular shower and having access to disposal facilities (Sahiledengle, 2022). In Mukono Municipality, there has been several studies on menstrual hygiene management such as the study which was done on women in the workplace according to Borg and another which was done among school teenagers, attendance rate was considerably low due to a severe lack of pads in this rural setting according to Yi-ting yang, much as they have been done, they don't seem to have focused MHM among Teenagers in Nantabulirwa, the biggest slum area in Mukono Municipality. Despite the increased awareness on menstrual health management, the barriers to ensure equitable access to timely education and hygienic conditions for menstrual health are still prominent. Thus, this study sets out to elucidate the effect assess the knowledge, attitude, and practices on menstrual hygiene management among teenage girls in Nantabulirwa Ward, Goma Division, Mukono Municipality, Uganda.

1.3 Research questions

- i. What is the level of knowledge on menstruation hygiene management among teenage girls in Nantabulirwa Ward, Goma Division, Mukono Municipality?
- ii. What is the attitude of teenage girls on menstrual hygiene management in Nantabulirwa Ward, Goma Division, Mukono Municipality?
- iii. What are the practices towards menstrual hygiene among teenage girls in Nantabulirwa Ward, Goma Division, Mukono Municipality?
- iv. What is the effect of menstrual education on menstrual hygiene management factors among teenage girls in a slum area of Nantabulirwa Ward, Goma Division, Mukono Municipality?

1.4 Objectives of the study

1.4.1 General objective of the study

This study aims to assess the knowledge, attitude, and practices on menstrual hygiene management among teenage girls in Nantabulirwa Ward, Goma Division, Mukono Municipality.

1.4.2 Specific objectives of the study

- i. To determine the level of knowledge on menstrual hygiene management among teenage girls in a slum area of Nantabulirwa Ward, Goma Division, Mukono Municipality.
- ii. To establish the attitude on menstrual hygiene management among teenage girls in a slum area of Nantabulirwa Ward, Goma Division, Mukono Municipality.
- iii. To identify the practices towards menstrual hygiene among teenage girls in a slum area of Nantabulirwa Ward, Goma Division, Mukono Municipality.

- iv. To investigate the effect of menstrual education on menstrual hygiene management among teenage girls in a slum area of Nantabulirwa Ward, Goma Division, Mukono Municipality.

1.5 Justification of the study

This study will help address factors that cause negligence regarding menstrual hygiene among teenage girls and how the information can be passed on to the immediate communities (Wasan 2022; Shumie & Mengie, 2022). This research aims to contribute to better menstrual hygiene to teenage girls and women in general across the country during their menstrual cycle through facilitating awareness about affordable substitutes and facilities. The slum areas in Mukono district are characterized with increased poverty which has greatly contributed to menstrual hygiene challenges among teenage girls in the slum area (Mukama, Ndejjo, 2021). Hence, the need to study the knowledge, attitudes, and practices on menstrual hygiene management among teenage girls in Mukono slums where they are most vulnerable to bad MHM practices.

1.6 Significance of the study

The findings could be used by Uganda government and development partners to provide information to the public to raise awareness about the most appropriate ways they can help teenage girls to maintain good hygiene during the menstrual period, reduce infections, improve and increased school attendance. The community leaders and parents shall use the findings to devise better ways they can help teenage girls maintain good hygiene during menstruation period. Therefore, advancing the evidence on menstrual hygiene management will enable the communities in similar settings to

better understand the main negative effects of poor MHM on girls' well-being, dignity and health.

The health managers could take the results of the study and use it as proof to invest and design a programmatic set of health education actions to address the MHM issues of women and girls' across Mukono district and Uganda at large. Furthermore, findings will contribute to the existing literature MHM and education strategies and actions.

1.7 Scope of the study

1.7.1 Geographical scope

This study was conducted in Nantabulirwa slum community located in Nantabulirwa Ward, Goma Division, one of the biggest slum areas in Mukono Municipality, Uganda. Mukono district has 2 counties of Mukono Municipality and Nakifuma consisting of 97 parishes (Mukono LG,2022).

1.7.2 Content scope

The study assessed the knowledge, attitudes, practices on menstrual hygiene management and the effect of menstrual education on menstrual hygiene management among teenage girls in slum areas of Mukono district Specifically, This is because teenagers are mainly at risk when it comes to issues of menstrual hygiene; the study will be limited to determining the level of knowledge, understanding the attitude and identifying the practices of teenage girls on menstrual hygiene management in slum areas of Mukono district respectively.

1.7.3 Time scope

The data was collected from teenagers aged 13 to 19 years who are menstruating from the slum areas in Nantabulirwa Ward, Mukono Municipality. These shall be selected because they are in better position to express what they experience. Additionally, review literature on the knowledge, attitudes, and practices among teenage girls on

menstrual health management is largely 5 years (2017-2022). The study was conducted from 1st September to 15th December 2023.

1.8 Conceptual framework

The conceptual framework explains the interaction between the independent variables (Knowledge, attitudes, and practices) and the dependent variable (Menstrual Hygiene management) among teenage girls in Nantabulirwa Ward selected villages as depicted in Figure 1.

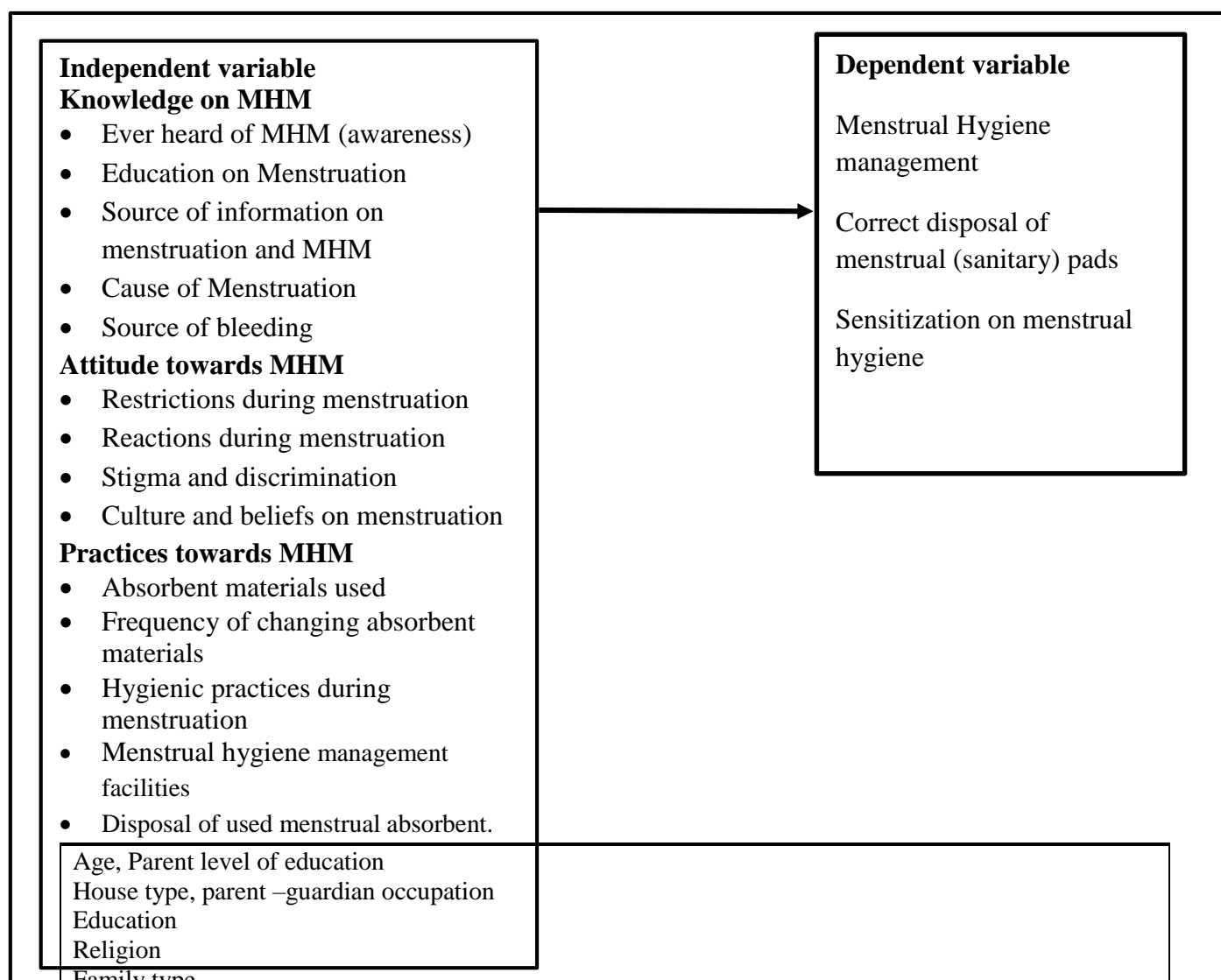


Figure 1: The conceptual framework for the study Menstrual Hygiene Management Among Teenage Girls in Nantabulirwa Ward, Goma Division, Mukono Municipality.

Source: Researchers construct

1.8.1 Explanation of the theory

The independent variables have a great influence towards the dependent variable. The teenagers' knowledge determines their MHM, the factors such as the source of information on menstruation, where the teenager got it from. The cause of menstruation and source of bleeding greatly influence the awareness on Menstrual Health Management, attitudes of the key stakeholders tend to influence MHM among teenagers. These include restrictions during menstruation, reactions at menarche, Stigma and discrimination, culture, and beliefs on menstruation.

The key practices that hitherto influence the MHM among teenagers are as follows, absorbent materials used, frequency of changing absorbent materials, hygienic practices during menstruation, menstrual hygiene management facilities, disposal of used menstrual absorbent, the age, parent level of education, family size among others, the demographic factors which would be relevant and have a great influence in the Menstrual Health management among Teenagers in Nantabulirwa Parish.

1.8.2 Theoretical Framework

The socio-ecological model (SEM) was used to frame the menstruation hygiene management related challenges of teenage girls living in Nantabulirwa slums in Mukono district. The social ecological model (SEM) is a model used to guide public health practice and research. The “socio-ecological model” (the Ecology of Human Development) was developed by psychologist Urie Bronfenbrenner in the late 1970s and emerged in the 1980s as a theory (Kilanowski, 2017). The SEM conceptualizes the many factors influencing health behaviors as a complex system with multiple levels (McCammon, Hebert, Bansal, 2022). The theory posits that individuals affect and are

affected by a complex range of social influences and nested environmental interactions. This model recognizes that factors can cross between multiple levels to facilitate or impede a person's ability to perform health behavior (McCammon, 2020). Thus, the SEM is a useful framework for examining menstrual health hygiene in this study. For example, on an individual level, teenage girls may lack knowledge about menstruation. Poor knowledge on menstruation leads to misconceptions that perpetuate stigma and cultural restrictions as well as poor hygiene (Parajuli, Heera, Mishra 2018). On an interpersonal level, teenagers may face numerous restrictions during their menses due to cultural beliefs (Sommer, 2015).

These cultural beliefs not only deter proper menstrual health hygiene. However, also lower the self-esteem of teenage girls. On the policy level, there may be a lack of programs to promote menstrual health hygiene such as ensuring adequate water, sanitation, and hygiene (WASH) in slums. Although most menstrual health and hygiene research and interventions have been focused on individual and interpersonal levels, exploration of factors affecting menstrual health hygiene at all levels of the SEM is significant (Sharma 2022). Poor menstrual health hygiene has gained global attention in recent years. Academics, non-governmental organizations (NGOs), the United Nations (UN) and other international agencies have called for an end to the gender gap created by menstruation in communities (Sommer, 2015). Promoting menstrual health hygiene is a viable strategy to end gender gap challenges the teenage girls face to fully participate in the slums. This theory is therefore appropriate for my research as it will assist in understanding the knowledge, attitudes, and practices on menstrual hygiene among teenage girls in Nantabulirwa Ward.

CHAPTER TWO: LITERATURE REVIEW

2.1 The Concept of Menstrual Hygiene Management (MHM)

Menstruation Hygiene Management (MHM) is a concept defined as “women and adolescent girls using the clean material to absorb or collect menstrual blood, and this material can be changed stealthily, safely, hygienically, and as often as necessary during menstruation” (Santora, 2021; Shumie & Mengie, 2022). It includes the use of water and soap to wash the body as required and access to facilities to dispose of used menstrual management materials (Phillips-Howard, 2016). Lack of menstrual hygiene relates to infections of the reproductive, urinary tract and toxic shock syndrome which may lead to future infertility and birth complications (Borkar. S, Borkar. A., Shaikh 2022). In the 13-19 years’ age group, poor menstrual hygiene and lack of self-care are critical drivers of morbidity and other negative effects (Majeed, Sharma, Ajmera 2022) which include low economic productivity, poor education, abuse of socio-economic rights, poor health and WASH infrastructure (Ssewanyana 2019; Kalembe 2020).

Feminists since in the late 1800s and early 1900s have challenged conventions that maintain unequal power relations between men and women and promote women’s sexuality and reproductive rights (Noëlle,2018). A woman will experience menstruation for 3000 days (8 years) of her life about 30-40 years with a menstrual cycle 11-12 times a year in which each cycle last 2-7 days. During the menstruation period, there are several hygienic practices and health factors that need managing (Dündar & Özsoy, 2020).

The menstrual cycle is globally and culturally relative as it affects every aspect of women's lives. Without the basic right to manage this biological function with dignity and ease, egalitarianism cannot be reached (Maulingin-Gumbaketi, 2022). Feminists are increasingly concerned with for women's and girls' welfare and dignity in several areas. For many girls especially in rural areas, once their period starts, they experience feelings of shame and because of the strict social and cultural barriers they are bound to do household activities only (Schmitt, 2021). Also, the women and girls need access to education, but in many developing and underdeveloped countries due to menstruation, this equal right is withheld from young women and girls (Mehjabeen, 2022). Additionally, health and hygiene complications from a lack of education can lead to reproductive disorder which can take years to diagnose and link with menstrual cycle. (Majeed, 2022). This is due to lack of access to menstrual products and hygiene facilities.

Feminists advocate for women's ability to contribute to the workplace, is being circumscribed by poor menstrual workplace policies. Indonesia, Japan, Taiwan and South Korea, Italy, Mexico, China and Zambia do provide menstrual leave for working women (Levitt & Barnack-Tavlaris, 2020). Also, advocate for basic tips to maintain hygiene during menstruation. These include choosing the right materials to be used during menstruation which do not negatively affect health and the environment, change absorbed material regularly, wash vaginal area regularly with clean water without use of soap, absorbed material used must be disposed of properly to avoid spreading germs and to bathe regularly (Jisha., 2021).

2.3 Global context of Menstrual Hygiene Management

Menstrual health has been recognized as an essential part of sexual and reproductive health, and a core consideration for gender sensitive water, sanitation, and hygiene (WASH) service provision (Hennegan, 2022). It is estimated that 500 million women and teenage girls lack access to menstrual products and adequate facilities for menstrual hygiene management (World bank,2022).

Women and teenage girls have a menstrual cycle 11-12 times a year each cycle lasting 2-7 days. This occurs from menarche to menopause for about 30-40 years, implying that a woman spends about 3000 days (8 years) of her life menstruating. Therefore, MHM affects women's and teenage girls' daily life, reproductive and sexual health, and wellbeing. Globally, many women and girls face challenges when managing their menstruation. Failure to address the menstrual hygiene needs of women and girls can have far-reaching consequences for basic hygiene, health and wellbeing, ultimately affecting progress towards gender equality and dignity for all (PMA 2020).

The Joint Monitoring Program (JMP) of the World Health Organization (WHO) and the United Nations International Children's Emergency Fund (UNICEF) highlight the significance of MHM (Sharma, McCall-Hosenfeld, Cuffee 2022). Efforts are largely in knowledge and skills, social support, access to absorbent material and WASH facilities to improve teenage girl's MHM (UNICEF, 2019). In a study done in 2018 by the World Bank, it was noted that 500 million women and girls have been disadvantaged of proper access to menstrual hygiene management facilities (Jisha, 2021). Numerous MHM-associated barriers are lacing sub - Saharan Africa requiring changes in girls and women's education with aim to improve initiatives that will demystify taboos around

menstruation and empower girls and women's reproductive health and environmental impact (Ssewanyana & Bitanhirwe, 2019).

2.4 The Menstrual Hygiene Management in Uganda

Menstrual Hygiene Management is considered both a global development and human rights issue for women and girls in Uganda. Many women close to 65% are unable to adequately meet their MHM needs (Menstrual Health Uganda, 2022). Though, Uganda is one of the countries in SSA that ratified several international declarations in regard to MHM, it has not done much in promoting menstrual hygiene management in many districts in the country (Elzy, Atuhairwe, Alege., 2017; Kalembe & Emojong, 2020). A large percent (3.75 million; 84%) of teenage girls from rural settings practice unsafe menstrual hygiene management (SNV, 2014). This is largely due to limited access to suitable menstrual products. There are several policy and legal frameworks to support MHM implementation. These range from global, to national and sectoral frameworks that if harnessed can contribute tremendously to undertaking MHM challenges in Uganda.

Boosey study done among adolescent girls in Uganda in 2014 indicated menstruation is considered a curse, disease, or sin (Boakye-Yiadom., Aladago, Beweleyir, 2018). In another study done in Moroto district indicated that, menstruation is largely considered as a private issue and is not regularly talked about openly making it difficult for girls to manage their periods (Elzyet , 2017). A study done in Mukono indicates Menstrual and genital hygiene behaviors' have been linked to negative health outcomes, including urogenital symptoms and confirmed infections according to Borg et al., (2023).

2.4 Knowledge of teenage girls concerning menstrual hygiene management

Mothers and female family members, who may not have the necessary knowledge and skills in MHM, are usually the main source of information for most adolescents (Chandra-Mouli & Patel, 2017; Shomo, Gurung, Shah, 2021). A cross-sectional study conducted in 2018 among 282 adolescent girls from selected slum areas of Kathmandu district, Kathmandu valley, Nepal reported inadequate knowledge related to menstruation hygiene at 57.1%. The major source of information about menstruation and menstrual hygiene was from family members (mother 64.8% and sisters 44.1%) and friends 55.9% (Karki, Raj Bhandari, 2018). A study by Jisha (2021) among adolescent girls in North Bangalore India, 59% gained information from their mothers regarding menstruation, 13% from their teachers and friends and only 5% their sisters and healthcare providers.

Boakye-Yiadom (2018) in a cross-sectional study in Ghana among 412 adolescents from 9 schools in the Yendi Municipality found that 67.5% had adequate knowledge of MHM. This study's findings show that mothers were the adolescent females' first source of information on MHM at 78%. This seems to emphasize the vital role of mothers in adolescent MHM education. Two hundred eighty-six (64.9%) of the 441 participants had good knowledge about MHM in a study done in Ethiopia (Shumie & Mengie, 2022). In contrast (52.4%) expressed they did not discuss their periods with their fathers. Elzy et al (2017) in their study titled "Assessment of Menstrual Hygiene Management Among Karamojong Adolescent Girls in Rupa Sub-County, Moroto District among 133 adolescents from 27 villages found out the proportion of adolescent girls practicing safe menstrual hygiene management was 27%. The low proportion of adolescent girls

practicing safe menstrual hygiene management in Rupa Sub-County was attributed to poverty, cultural beliefs, and lack of adequate information about menstruation management in Karamojong region.

2.5 Education on menstruation

Despite the increased awareness on menstrual health management, the barriers to ensure equitable access to timely education and hygienic conditions for menstrual health are still prominent. The interventional study done in public schools in India in 2016 showed that 40.5% of the of girls were not aware of menstruation before menarche. However, after education, 96% had knowledge on menstruation and hygiene management. (Santhanakrishnan & Athipathy, 2018).

In a cluster randomized controlled study done in Mukono district, Uganda menstrual education was conducted for 5 weeks among 66 adolescent girls from 3 schools. The findings revealed improved Menstrual hygiene management through reusable pad (Yang & Chen, 2023).

Miiro (2018) in the cross-sectional study among adolescents in Entebbe sub-district in Uganda showed 23.8% had not learnt about periods before their menarche. The first source of information was most commonly the mother at 40.6%, peers (24.7%), teachers (14.2%) and other sources (20.5%).

Across LMIC countries girls have limited education and knowledge about menstruation and its proper hygienic practices (Mehjabeen, 2022). However, in a study done in Nepal among school adolescents showed that 83% of girls have knowledge of MHM but it hasn't clearly translated into the right attitude and practice. This might be attributed to the

inclusion of reproductive health education in school curricula and exposure to mass media such as radio, internet, and televisions (Yadav, Joshi, Poudel, 2018).

2.6 Attitudes of teenage girls concerning menstrual hygiene management

Tshomo (2021) in their study done in Bhutan among 1,010 female adolescents reported that beliefs concerning menstruation are deep-rooted, and girls describe the onset of menarche as a shocking experience, a curse from God, or even as punishment for the sins of their ancestors. The attitude is negative to the extent that those menstruating are as dirty because the blood of menstruation is considered “dirty.” Similarly, in Nepal, 45.4% of the 1342 adolescent girls’ menstruation considered as a “bother” or “curse.” (Mukherjee 2020). In contrast, Mohammed & Larsen-Reindorf (2020) in a study done in Ghana showed that abstinence from religious activities was at 85.7%, misconception that girls who are menstruating are unclean and impure 73.2%, and prohibition of discussions about menstruation and its management 36.4%.

In Uganda, 84% (3.75 million) of adolescent girls living in rural settings practice unsafe menstrual hygiene management (SNV, 2014). This is mostly attributed to limited access to appropriate menstrual products. Many of the adolescent girls rely on crude methods like using old clothing, pieces of foam mattress, toilet papers, leaves, and banana fibers to manage their menstruation. If the situation is not addressed, the adolescent girls will have increased vulnerability to reproductive tract infections.

In a study conducted by Miiro (2018) among 352 adolescent girls in four secondary schools in Entebbe sub-District, Uganda indicated substantial embarrassment and fear of teasing associated to menstruation negatively affect menstrual hygiene

management. To the contrary, in Moroto district of Uganda 48.1% of the adolescent girls agreed that there are cultural factors attached to menstrual hygiene management (Elzy 2017).

2.7 Practices of teenage girls concerning menstrual hygiene management

Adolescent girls constitute a vulnerable group not only with respect to their social status but also in relation to their health. In this regard, menstruation is regarded unclean or dirty in society (Dasgupta & Sarkar, 2008). The issue of menstrual hygiene is inadequately acknowledged and has not received proper attention (Water Aid, 2009). Karki, Raj Bhandari, (2018) in their study done in Nepal found out that during menstruation, 65.6% were using sanitary pad, 6% used cloth materials and 28.4% both cloth and sanitary pads, 41.1% girls changed pad three times a day, 98.9% washed hands after changing the pad, 81.1% disposed absorbent by wrapping in paper and discarding it in dustbin. Similarly, in Nepal the practice of “Chappaudi” determines that women are considered “impure” during their menstruation cycle and are subsequently separated from others in many spheres of normal and daily life. The tradition is that women cannot enter inside houses, kitchens, and temples. They cannot touch other persons, cattle, green vegetables and plants or fruits. Also, cannot milk buffalos or cows, and are not allowed to drink milk or eat milk products. Generally, women stay in separate hut or cattle shed for 5 days during menstruation. However, those experiencing menstruation for the first time should, according to practice, remain in such a shed for at least 14 days. Access to water taps and wells is also limited.

In Pakistan a study done among 25 305 teenagers indicated using inappropriately MHM material 61.9%, used old cloth 12.6%, using old cloth with sanitary pads 0.5%. (Wasan,

2022). On the other hand, a study done by Tshomo (2021) in Bhutan had socially imposed restrictions (exclusion from daily prayers, avoiding certain foods, performing fasting ceremonies, avoiding touching holy books or flowers, and even preventing them from entering a kitchen or a temple) as the blood of menstruation is considered “dirty.”

Studies in Africa have found out the use of sanitary pads as low as 18 % amongst Tanzanian women with the remainder using cloth or toilet paper (Baisley 2009). Studies of Nigerian schoolgirls have found between 31% and 56 % using toilet tissue or cloth to absorb their menstrual blood as opposed to menstrual pads.

In sub-Saharan Africa, the most used feminine hygiene products are reusable cloths and sanitary pads. Girls make reusable cloths using scraps from shirts, dresses, old towels, or blankets. Girls from peri-urban and rural areas typically utilize reusable menstrual materials and often respond that sanitary pads are too expensive for them to purchase. While, from rural areas indicate that sanitary pads are inaccessible in their areas. A very small proportion of girls use tampons and menstrual cups (Vaughn, 2013). Other feminine products girls use include cotton, wool, socks, toilet paper, pages torn from school exercise books and old newspapers, pieces of sponge torn from mattresses, and additional clothing worn as menstrual protection. In poor rural areas, girls even report using leaves or cow dung, or digging a hole in the ground to sit on for the duration of menses. In a study done in Ghana reported that majority of the girls used commercial sanitary pads 60.7% and reusable cloth pad 54.2%. The choice of absorbent material was influenced by comfort 39.2%, safety 26.8%, cost 4%, and availability 6.8% (Mohammed & Larsen-Reindorf, 2020).

Generally, in Ethiopia 25% of the schoolgirls use nothing, and typically isolate themselves during menstruation. Another study conducted in Ethiopia showed that, though, most (92 %) students were aware of menstruation before menarche, their utilization of sanitary napkins was low at 37.6 % and a significant proportion, 62.4 % were using rags and pieces of cloth (Eleven percent (11%) of girls in Ethiopia change their menstrual cloths once a day (Sarah, 2012). Most girls in Ethiopia are at risk of getting genitourinary tract infections due to their unhygienic practices during their menstruation period which may lead to further complication if left untreated (Annabel 2010). To the contrary, 441 Ethiopia 62.4% of the teenagers had good menstrual hygiene practice, 54.6% use commercially made disposable sanitary pads though 19.5%, 19.3% use reusable sanitary pads, and disposable (Shumie & Mengie, 2022). Furthermore, other factors like taxes imposed on the imported menstrual hygiene materials could be an indicator for the poor menstrual hygiene among the poor population.

A Ugandan study highlights that sanitary pads are disposed of in the latrines or toilets in most schools. This poses problems because it causes the latrines to fill up quickly and the toilets to become clogged. Other girls dispose of them in school dustbins, while some girls resort to burying them in their home gardens in rural areas (Vaughn, 2013).

2.8 Summary of literature review

This chapter has mainly looked at the knowledge, attitudes, and practices on menstrual hygiene management among teenage girls with a global, regional and local view. Also, it has focused on theories related to the research's objectives. Several studies have

been conducted on menstrual hygiene among girls. Several studies indicated vast sampled proportions of menstrual hygiene management. Conversely, there is paucity of literature among teenagers in slum areas (Karki, Raj Bhandari, 2018). These studies inferred contextual and knowledge gaps which the conducted studies addressed.

Besides, the practice related studies had more unique measures and inconsistencies than the attitude and knowledge among teenagers. The grey area were the materials used during menstruation among girls in slum areas was diverse and not uniform, which made between study comparisons problematic (Tshomo et al., 2021; Wasan et al., 2022). The different studies used different designs and so provided different responses (Vaughn 2013; Wasan et al., 2022). The literature indicated a few studies that have been done in Uganda (SNV, 2014; Elzy et al., 2017; Miiró et al., 2018; Ssewanyana, & Bitanihirwe, 2019). There is no available study that has been conducted specifically in slum areas in Mukono Municipality in Uganda at the time of research to ascertain the knowledge, attitudes and practices among teenage girls which necessitates the need to conduct this study.

CHAPTER THREE: RESEARCH METHODS

3.1 Study design

A descriptive analytical cross sectional mixed study was employed involving the use of quantitative and qualitative methods of data collection. A cross-sectional study is used where data from respondents were collected at a single point in time without repetition from the representative population. The design was chosen because of being economical to conduct in terms of time (Patrik & Ugo, 2019). The findings from this design will help in removing assumptions and replace them with actual data on the specific variables studied at a point in time.

3.2 Study area

This study was conducted in Nantabulirwa slum area located in Nantabulirwa Ward, Goma Division, Mukono Municipality in central region of Uganda. It is located about 21 km East of Kampala the capital city of Uganda. Mukono district is an emerging industrial setting with a mix of rural and urban characteristics. Nantabulirwa slum area is the biggest consisting of 4 villages Degeya, Kisenyi, Nantabulirwa slum in Mukono Municipality. Nantabulirwa slum it's the biggest slum in Mukono Municipality which is characterized with low-income levels which has greatly contributed to menstrual hygiene challenges among teenage girls in the slum area. Mukono District, with a total area of 2,986.47 Sq Km, lies in the Central region of Uganda, situated along Kampala-Jinja Road (21Kms East of Kampala City). The district shares borders with the Kayunga along River Sezibwa in the North, Kampala and Wakiso in Southwest, Buikwe District in the East, Luwero in the Northwest, Tanzania, and Lake Victoria in the South with the Islands of Buvuma District. Mukono Municipality is in Mukono District. It has a total

population of 200,000 people. It has two Divisions: Goma and Mukono Central. Goma has 5 Wards and 38 Villages. The is Goma Health Centre II. The Municipal has two hospitals in the other ward (One Government and one private Not for Profit). There are other Private For-Profit Health facilities in Goma Division.

3.3 Study population

The target population are the teenage girls between 13-19 years. All teenage girls who have reached menarche and reside in Nantabulirwa slum areas were considered as the study population.

3.4 Sources of information

The teenage girls and key informants served as the primary source of data.

3.5 Sample size

A sample is a section of the wider population that will be engaged in the survey (Stuart, 2016). According to Creswell (2012), a sample is a subgroup which is representative of the target population from whom findings can be generalized about the population.

This study adopted the Kish Leslie formula of sample size determination.

$$n = Z^2PQ / e^2$$

Where;

n is the appropriate desire sample size.

Z is the Z value at 95% confidence interval which is calculated at 1.96

P is prevalence of girls in Uganda unable to fully access & meet their MHM needs is at 65% (Menstrual Health, Uganda 2022).

e is the margin of error at 5%

N can be calculated by substitution of the figures into the formula to give the desired sample size;

$$n = \frac{(1.96)^2 (0.65) (1 - 0.65)}{(0.05)^2}$$

$$n = \frac{(3.8416) (0.65) (0.35)}{(0.0025)} = 349.5$$

$$n = 350$$

Therefore, from the sample size calculation above, the sample size will be 350 teenage girls aged 13-19 years selected from Nantabulirwa slum, Mukono Municipality.

3.5.2 Sampling techniques

The study was conducted using both purposive non-random and simple random sampling methods. This aimed at engendering information about the varying MHM practices and experiences that varied across contexts. Participants were selected using multi-stage sampling. The 4 villages in Nantabulirwa slum area, Mukono Municipality was purposively selected. At the second stage a list of all the households in the selected villages were used as a sampling frame to systematically select households with adolescent girls. Given that, study population is large using this method was ease their selection and gave each person equal chance to participate in the study. Thus, unbiased and makes research of such large populations more practical. On the other hand, purposive sampling was used to select key informants based on their designations and roles, seniority, expertise, and knowledge on MHM. In this research, the key informants were mainly from Mukono municipal council, and those from civil society and development organizations. These included community/gender officers, water officer and environment officer, social workers, health personnel. Officials from the key sectors namely Ministry of Health, Education and sports, Water and Environment, and Gender were interviewed at a national level. In total 10 was interviewed. The KIs shared

resourceful information about MHM. Their submissions were triangulated with quantitative data in this study.

3.6 Eligibility criteria

3.6.1 Inclusion

The teenage girls residing within the given area of study aged 13-19 years who have started their menstruation_were included in the study.

3.6.2 Exclusion

Teenage girls who have started their menstruation but are sick at the time of survey were excluded from the study.

3.7 Data collection

Before commencing the data collection, a pretest was done, and ethical considerations observed. The data collection methods included the questionnaire survey, key informant interviews and observation technique. A pretest was done for both questionnaire and key informant interview guide to check for content and to incorporate comments.

3.7.1 Questionnaire

The questionnaire was used to collect quantitative data from the selected teenage girls aged 13-19 years from Nantabulirwa slum, Mukono Municipality. The questionnaire included closed-ended questions for each of the four objectives where the answers were provided, and the respondents requested to tick their preferred option. The key issues to be explored were the concept of menstrual hygiene management among the teenage girls on knowledge, attitudes, and practices.

3.7.2 Key Informant interview guide

The interview guide was used to collect data. This method provided a situation where the participants' descriptions could be explored, probed, and elaborated. An interview guide was developed to aid this. The data obtained during the interview supplemented the data obtained through the questionnaire survey. Also, throughout the interview period the researcher probed for more information to allow each participant to share her own personal perspectives. Thus, avoided 'contaminating the data'. The interviews were audio-taped with permission from the participants and field notes taken to incorporate contextual experiences that may not recorded but could add meaning to the research findings.

3.7 Data collection instruments

The types of data collection tools used in the study included questionnaire, and key informant interview guide.

3.7.1 Questionnaire

A semi structured questionnaire guide was used to collect quantitative data from the selected teenage girls aged 13-19 years from Nantabulirwa slum, Mukono. The questionnaire contained a list of possible alternatives from which respondents selected the answer that best suits the situation for each of the three objectives in the study.

3.7.2 Key Informant interview guide

The interview guide was used to conduct face to face interviews for the collection of data from the key informants. The interview guide gives the research control over the line of questioning hence time saving. The tool comprised of unstructured questions that were explored while conducting the interviews to collect in depth information.

3.8 Quality control

The quality control of this study was attained through validity and reliability. The principles of validity and reliability are fundamental cornerstones of the scientific method (Kent, 2001). For assessments to be sound, they must be free of bias and distortion. The following subsections explain how validity and reliability was determined in this study.

3.8.1 Validity

The validity refers to the true representativeness and accuracy of the questions of the instrument being measured to capture the intended data (Cohen et al., 2007). Experts in research reviewed the questions to see whether they could capture the intended response. A Content Validity Index (CVI) was calculated to establish the validity of the questionnaire. Content Valid Index (CVI) is a scale developed by computing the relevant items in the questionnaire by checking their clarity and meaningfulness in line with the relevant items stated divided by the total number of items. The questionnaire was considered valid for data collection since the CVI value was above 0.925 above the recommended 0.7 (Polit et al., 2007).

3.8.2 Reliability

Reliability is consistency of the results measured. This was ensured by undertaking several measures prior to fieldwork and data analysis. A pre-test was conducted on 35 respondents (10% of the sample size) to validate a rationally high power (80%) of the outcome (Perneger, Courvoisier, Hudelson, 2015). The pretest was done in Buikwe district with many similarities to Mukono district among participants who are characteristically similar to the sample respondents. Based on the feedback, observed inconsistencies of the questions were corrected to meet the intended objectives before time of data collection.

The research assistants were 3 trained on protocol and data collection tools for 1 day prior to the survey to warrant their understanding menstrual health management and command on administering the tools. Research assistants were well versed with English and the local language '*Luganda*' used in the study area. During the data analysis of qualitative data, the researcher kept cross-checking the themes with the transcripts and analytical notes to ensure that they are coherent and consistent with the raw data to maximize their reliability.

3.9 Data processing and analysis

Data analysis was done for both quantitative and qualitative data. Teenage girls were chosen as the unit of analysis in this study setting. For quantitative data, the collected data entry and analysis was performed using SPSS (Statistical Package for Social sciences) version 20 software package. The results were presented in form of tables percentages and figures for objectives 1 to 3. Associations between dependent and independent variables were assessed and presented using tables and graphs. Uni-variate

analysis was done for both the independent variables (demographic, socio-economic and cultural factors) and dependent variable (menstrual hygiene management) and their descriptive statistics including frequencies and percentages for categorical variables was done. Variables that were significant at bivariate analysis were modelled to a multivariate analysis.

For qualitative data interviews was edited, coded and analyzed by categorization under the themes studied under a process referred to as Content Thematic Analysis. The master sheet and content thematic analysis approaches were used to reduce data for reporting purposes. A master sheet was used to draw frequency counts to generate percentages. Direct quotations from the key informants have been reported verbatim under the variable/themes studied. Data from documents was categorized and reported according to themes studied.

3.10 Ethical considerations

The researcher endeavored to uphold ethical issues while administering the research instruments. The approval of the study was first sought from the Uganda Christian University research ethical committee for expedited review. After this approval, the faculty issued me an introductory letter. It is after endorsement by the Municipal Medical officer that enabled the researcher to get final permission from the respective area authorities, to interact with the required population.

The informed consent was sought from respondents and concerned authorities before collecting data. The appropriate behavior was adhered to in relation to the right of the respondents, treating with utmost confidentiality information that was obtained from

the respondents and their identities, full acknowledgement by proper referencing of sources for secondary materials, and presenting without subjective manipulation in favor or interests of the outcomes for the research findings. Legally a person below 18 years is not able to give true informed consent and in this case the researcher sought for their consent and as well as informed permission from parents and guardians of the respondents.

CHAPTER FOUR: RESULTS

4.0 Introduction

This chapter presents both quantitative and qualitative findings of the study in relation to the objectives. This chapter presents descriptive statistics of the variables, bivariate and multivariate analysis, and interpretations to assess the knowledge, attitude, practices, and menstrual education on menstrual hygiene management among teenage girls in Nantabulirwa Ward, Goma Division, Mukono Municipality. During analysis, the total number of respondents were either 350 or 325 or 315.

4.1 Demographic characteristics

4.1.1 Demographic characteristics of teenage girls

Data was analyzed from 315 of the total 350 teenage girls sampled and interviewed resulting in response turn out rate of 90%. Also, qualitative data from 4 key informants were analyzed. Majority 146(46.3%) of the teenage girls come from Nantabulirwa village, most 135 (42.9%)

belonging to the Buganda tribe and most 110 (34.9%) are Catholics. More than half of the girls 184 (58.4%) attained primary level of education as shown in Table 1.

Table 1. Demographic characteristics among teenage girls in Mukono Municipality, N= 315.

Variables (n = 315)	Frequency	Percent
Religion		
Catholic	110	34.9
Anglican	62	19.7
Muslim	57	18.1
Pentecostals	73	23.2
SDA	13	4.1
Education		
Primary	190	60.3
Secondary	113	35.9
Tertiary	8	2.5
None	4	1.3
Tribe		
Luo/Ateso	44	14.0
Banyakole/Bakiga	33	10.5
Baganda	135	42.9
Bagisu/Bagwere	37	11.7
Basoga	42	13.3
Others	24	7.6
Village		
Buwanyi	29	9.2
Degeya	51	16.2
Kolo	82	26.0
Nantabulirirwa	146	46.3
Others	7	2.2

Source: Field data

4.1.2 Demographic characteristics of parents/guardians for teenagers

Table 2 below shows more than half of the teenagers live with both parents 186 (59.0%).

Many of the girls 171(54.3%) live in a nuclear family type, 199(63.2%) living in permanent houses with most 116(36.8%) of the parents/ Guardians having at least a secondary education. A quarter of the parents/ Guardians 133(42.2%) doing business/sales as their occupation.

Table 2. Demographic characteristics related to parents/guardians for teenage girls

Family type		
Nuclear	171	54.3
Extended	91	28.9
Blended	24	7.6
Not defined/foster	29	9.2
Person Living with		
None	52	16.5
Father	29	9.2
Mother	48	15.2
Both	186	59.0
Parent/Guardian Level of education		
No formal education	65	20.6
Primary	56	17.8
Secondary	116	36.8
Tertiary	78	24.8
Parent/Guardian occupation		
Business/sales	133	42.2
Collar job/Private/Public Sector	88	27.9
Farmer/Agriculture	35	11.1
Others	59	18.7
House type		
Temporal	29	9.2
Semi-permanent	87	27.6
Permanent	199	63.2

Source: Field data

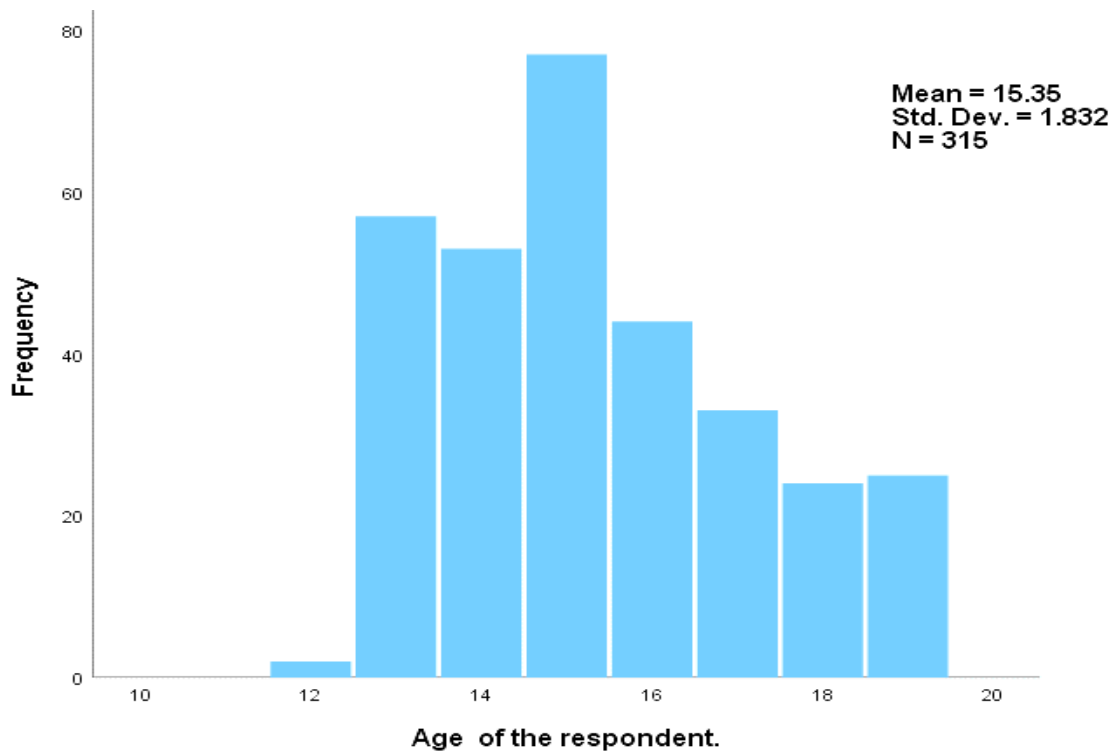


Figure 2 Age of the teenage girls among teenage girls in Mukono municipality

Source: Field data

A total of 315 teenage girls with an average age of the girls is 15 years with a standard deviation of 1.832 participated.

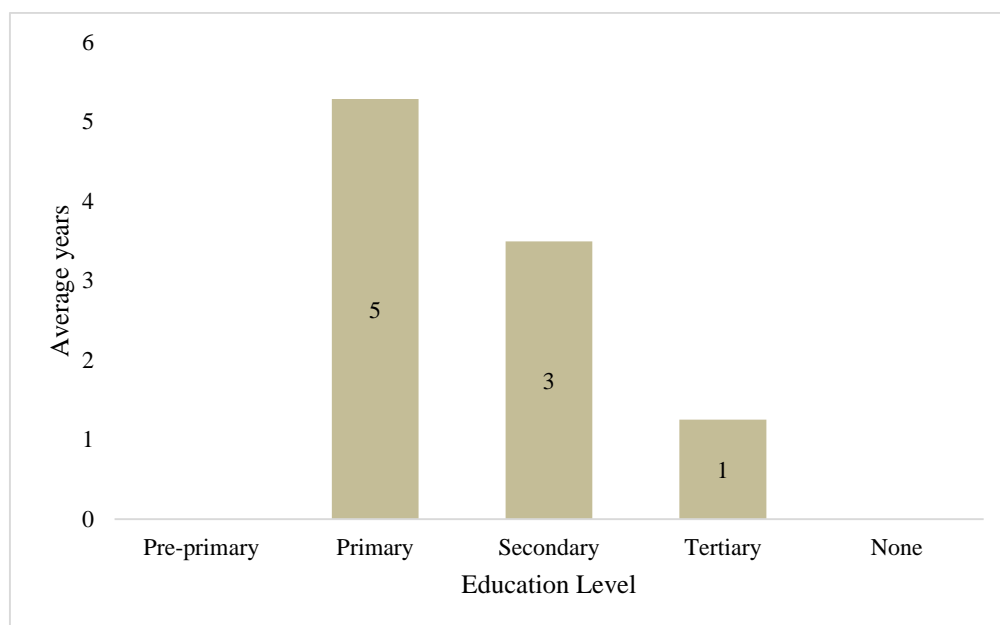


Figure 3 Distribution of years completed in the education level among teenage girls

Source: Field data

On average, the teenager girls have completed 5 years of primary schooling, 3 years of secondary school and 1 year of Tertiary schooling.

Table 3 Family size and days taken in periods among teenage girls in Mukono Municipality

Variables (n = 315)	Minimum	Maximum	Mean	Std. Deviation
Family size	2	18	6.31	2.354
Days taken in periods	2	7	3.79	1.126

Source: Field data

The average family size of the teenage girls is 6 members with a standard deviation of 2.35 and the teenage girls take on average 3 days in periods with a standard deviation of 1.13.

Bivariate Analysis

Demographic factors and menstrual Education among teenage girls

Table 10 presents a statistically significant association between menstrual education attainment and the age of the girls ($X^2 = 8.013$, P-Value = 0.005) with majority 129 (55.4%) aged between 12 to 15, the education level of the girls ($X^2 = 28.749$, P-Value = 0.000) with majority have a primary level of education, family type ($X^2 = 13.891$, P-Value = 0.003) with the highest proportion 135 (57.9%) living in nuclear families, living arrangement ($X^2 = 16.806$, P-Value = 0.001) with most of them living with both parents, and parent`s level of education ($X^2 = 10.421$, P-Value = 0.001) with majority 92 (39.5%) of the girls who reported to have received menstrual education having at least a parent/guardian with a secondary level of education. Worthy to note was that the higher the level of education, the more the unwillingness of the respondents to give their honest opinions. This was observed during the interview sessions because they felt uneasy and shy off to talk about their personal hygiene management practices.

Table 4: Results for the effect of menstrual education on demographic factors

Variable (n=315)	Menstrual Education		Pearson Chi-square	P-Value
	Yes	No		
Age (Years) 12 to 15 16 to 19	129 (55.4%) 104 (44.6%)	60 (73.2%) 22 (26.8%)	8.013	0.005*
Education None Pre-primary Primary Secondary Tertiary	0 (0.0%) 2 (0.9%) 127 (54.5%) 96 (41.2%) 8 (3.4%)	4 (4.9%) 4 (4.9%) 57 (69.5%) 17 (20.7%) 0 (0.0%)	28.749	0.000*
Family Size 1 to 6 7 to 12 13 to 18	136 (58.4%) 95 (40.8%) 2 (0.9%)	38 (46.3%) 42 (51.2%) 2 (2.4%)	4.304	0.116
Village Buwanyi Degeya Kolo Nantabilirwa Others	27 (11.6%) 38 (16.3%) 60 (25.8%) 104 (44.6%) 4 (1.7%)	2 (2.4%) 13 (15.9%) 22 (26.8%) 42 (51.2%) 3 (3.7%)	7.146	0.128
Family type Nuclear Extended Blended Not defined/foster	135 (57.9%) 61 (26.2%) 12 (5.2%) 25 (10.7%)	36 (43.9%) 30 (36.6%) 12 (14.6%) 4 (4.9%)	13.891	0.003*
Living arrangement None Father Mother Both	33 (14.2%) 14 (6.0%) 37 (15.9%)	19 (23.2%) 15 (18.3%)	16.806	0.001*

	149 (63.9%)	11 (13.4%) 37 (45.1%)		
Parent/Guardians level of Education			10.421	0.015*
No formal education	38 (16.3%)	27 (32.9%)		
Primary	43 (18.5%)	13 (15.9%)		
Secondary	92 (39.5%)	24 (29.3%)		
Tertiary	60 (25.8%)	18 (22.0%)		
Parent/Guardian occupation			4.795	0.187
Business/sales	102 (43.8%)	31 (37.8%)		
Collar job/Private/Public Sector	68 (29.2%)	20 (24.4%)		
Farmer/Agriculture	21 (9.0%)	14 (17.1%)		
Others	42 (18.0%)	17 (20.7%)		
*Significant at p < 0.05				

Source: Field data

4.2 Knowledge about menstruation

4.2.1 Level of Knowledge about menstruation

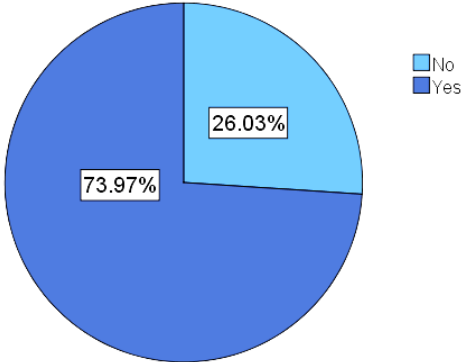


Figure 4 level of Knowledge about menstruation among teenage girls

Source: Field data

From the total of 315 teenage girls included in the study, Majority 73.97% of the teenage girls had knowledge about menstruation while 26.03% were lacking knowledge about menstruation. Majority 237 (75.2%) of the teenage girls receive their periods monthly, most 214 (67.9%) reporting that their friends/parents always get to know when they are in periods with majority 88 (41.3%) of the girls telling them about the periods and majority 255 (81.0%) agreeing to have been taught on how to take care of themselves during periods as indicated in table 4.

Table 5 Menstrual knowledge among teenage girls on menstruation health management in Mukono Municipality

Variables (n = 315)	Frequency	Percent
Periods Intervals		
Monthly	237	75.2
Don` t know	58	18.4
Others	20	6.3
Do your friends/ parents get to know when you are in your periods?	214	67.9
Yes	101	32.1
No		
How Friends/ Parents get to know		
She tells them	88	41.3
See her unwell	68	31.9
When they request for pads	48	22.5
Other ways	9	4.2
Has anyone ever taught you on how to take care of yourself during periods	255	81.0
Yes	60	19.0
No		

Source: Field data

Regarding knowledge, the key informants in this study have adequate knowledge related to menstruation, as they knew menstruation. They attributed their knowledge from their personal experiences and various sources.

She said:

“I can briefly describe it as a monthly tax. Every woman or girl who is in a youth stage must go through the menstruation periods, therefore my thought is menstruations means that she has grown.” (KI#2, Female)

Another KI said:

“This is the period when a girl or a woman experiences ovulation. We tell girls that it’s when they see blood coming out of them through their private part. Naturally, it is brought up in us as women that if we see blood coming out, and you are not sick of anything, then you are menstruating. Its normal for any woman or girl to go through that.”

She then added:

“I think I was thirteen years in primary seven, but I had not started.” (KI#3, Female).

4.2.2 Menstruation education

Participants indicated the different education sources from which they heard and obtained knowledge about menstruation. They attributed their adequate knowledge and information about menstruation from different sources ranging from media, schools, community, and health talks as shown in Table 5. Most 164 (70.4%) of the respondents reported to have received menstrual education from school as shown in table 5. Then, from friends 68 (29.2%), parents 64 (27.5%), media 31 (13.3%), community 7 (3.0%) and the least from other sources at 6 (2.6%).

Table 6 Sources of teenage girls` menstruation education

Menstrual education sources	Had Menstruation education
	Yes (n =233)
From Media (radio, TV, newspaper, internet, and social media)	31 (13.3%)
From School	164 (70.4%)
From Parents	64 (27.5%)
From Friends	68 (29.2%)
From Community	7 (3.0%)
From Others	6 (2.6%)

Source: Field data

Regarding menstruation sources, the key informants had diverse responses. They adequately had knowledge on menstruation and stated their sources clearly.

One KI said:

“Menstruation is a period of ovulation, those days that the girls go through every month.” He further explained having heard it first from his primary school teachers may years back during one of the health talks in the class. He said:

“Actually, first heard it menstruation from my teachers of primary then after primary even heard it from the secondary teachers and in peer education also, we read it, as well as from my students.” (KI#4, Male).

Another participant explained from her personal experiences:

“I first heard of that when I was in Primary seven (P7) very many years ago, but I started mine when I was in Senior one. Having heard of it before in P7 when it started, though I wondered what was happening to me; I remembered what was my P7 teacher had taught me about menstruation.” (KI#3, Female).

4.3 Attitudes of teenage girls on menstruation health management

From the results in the table above, out of the 315 teenage girls who participated in the study. The majority 247 (78.4%) agree on parents/ Guardians knowing about their menstrual periods, most 190 (60.3) do not think girls should be given time-off from school during their periods and the highest number of the girls 228 (72.4%) not wanting men/boys involvement in menstrual education.

The results also indicate that majority 261 (83.7%) of the girls mostly used disposable pads than other menstrual linen with most 149 (47.3) using the menstrual linen because of its comfort as shown in Table 6.

Table 7 Attitudes of teenage girls on menstruation health management

Variables (n = 315)	Frequency	Percent
Parent or Guardian should know your period		
Yes	247	78.4
No	68	21.6
Give girls time-off from school during their periods	125	39.7
Yes	190	60.3
No		
Involve men/boys in menstrual education		
Yes	87	27.6
No	228	72.4
Menstrual practice		
Cloth	135	43.3
Disposable pads	261	83.7
Tampon	3	1.0
Cotton	29	9.3
Pant liners	72	23.1
Re-usable pads	29	9.3
Others	5	1.6
Influence of choice of menstrual linen		

	Price	54	17.1
	Availability	112	35.6
	Comfort	149	47.3

Source: Field data

Regarding attitudes about menstruation were of mixed views and of diverse nature. For example, men and boy's attitude in this study were positive.

One participant said:

“Basically, being a man sometimes it would be not very easy for these girls to open up to me and how they do it but I always interact with the matron and senior woman, the teacher then our nurse to handle such.”

Then continued to narrate: “ Our girls always put sanitary pads among their school requirements. For those who cannot afford we have the reusable ones, we have the students making them. We also buy and we have an organization called New Hope for Africa.... they also provide. So, with menstrual hygiene, am sure it is handled very well.” (KI#4, Male).

4.3.1 Cultural beliefs attached to menstruation

Table 7 Cultural beliefs attached to menstruation among teenage girls

Variable (n=315)	Cultural beliefs attached to menstruation	
	Yes (n=26)	No (n=289)
Tribe		
Luo/Ateso	0 (0)	44 (15.2%)
Banyakole/Bakiga	2 (7.7%)	31 (10.7%)
Baganda	21 (80.8%)	114 (39.4%)
Bagisu/Bagwere	0 (0)	37 (12.8%)
Basoga	1 (3.8%)	41 (14.2%)
Others	2 (7.7%)	22 (7.6%)

Source: Field data

From table 7, it`s noticed that cultural belief attached to menstruation is most common among the Baganda tribe that is 21 (80.8%) of girls. Then the Banyakore/Bakiga at 2(7.7%), and Basoga at 1(3.8%). In this study the participants from Bagisu /Bagwere expressed no cultural attachment to menstruation.

4.3.2 Reactions during menstruation

Reactions during menstruation are expressed as discomfort and or and or anxiety during periods in this study. The findings of the teenage girls’ reactions are demonstrated in Table 8.

Table 8 Discomfort or anxiety during periods among teenage girl

Discomforts or Anxiety during periods	Yes (n =234)	Total
Fear of leaking	62 (26.5%)	62
Cramps	135 (57.7%)	135
Not enough pads	82 (35.0%)	82
Other body pain	100 (42.7%)	100
Total	234	234

Source: Field data

Out of the 234 girls who get discomforts or anxiety during periods, most of them report that they majorly experienced cramps, 135 (57.7%) of the girls.

One said:

“Given that I am dealing with teenage girls with different health problems and all that, they have different experiences with menstruation. Some have normal menstruation, no pain, no cramps, just the normal passing of blood. Others are having painful menstruation periods, others are having moderately manageable pains that would be called cramps, others even get so sick. So, we have different experiences.” (KI#3 Female)

4.4 Menstrual practices among teenage girls

Majority 248 (78.7%) have access to water, 150 (47.6%) bathe twice a day during their periods, More than 150 (47.6%) girls change their towels after every 5-8 hours, 265 (84.1%) have access to latrine or bathroom, 187 (59.4%) experience leakage during periods, 211 (67%) dispose their menstrual towels in the pit latrine, 256 (81.3%) have access to soap and water as in table 9 below.

Table 8 Menstrual practices among teenage girls in Mukono Municipality

Variables (n = 315)	Frequency	Percent
Have access to water		
Yes	248	78.7
No	67	21.3
Number of times girls bathe during periods		
Once	16	5.1
Twice	124	39.4
Thrice	150	47.6
Four plus	25	7.9
Number of times a girl changes towels during periods		
After every 3-4 hours	100	31.7
After every 5-8 hours	150	47.6
After every 12 hours	58	18.4
Don` t know	7	2.2
Access to latrine or bathroom		
Yes	265	84.1
No	50	15.9
Leakage during periods		
Yes	187	59.4
No	128	40.6
Place of disposal of menstrual towels		
Pit Latrine	211	67.0
Pad bin	32	10.2
With rubbish	55	17.5

Burrry them in fields	14	4.4
Don` t know	3	1.0
Access to soap and water		
Yes	256	81.3
No	59	18.7

Source: Field data

Regarding practices, some participants in this study shared evidence of menstruation practices in their communities. One participant said:

“We have a disposable areas, that is the incinerator, the girls are always given menstrual hygiene management lessons or sessions, where we talk about the management and how to deal with it when it comes, we also give emergency pads, so our status is not so bad, because we also have a changing room that is near the sick bay where they go in case of emergencies for the day scholars and for the boarding students, we let them go into the dormitories.” (KI#1, Female).

Majority of participants confirmed that their practice of providing sanitary pads for the girls from schools. It’s a practice they narrated to promote hygiene and comes with positive health outcomes.

A participant explained: “We are teaching the girls to do reusables, because not so many of them can afford to buy the disposable pads, so we encourage them for those that can make the reusable the one that we can wash and reuse.” (KI#2, Female).

And another reported:

“In the school we have managed to handle our girls in such a way that we have sanitary pads for the girls, we have knickers for them provided by the headteacher, in case a girl starts menstruating minus the parents’ knowledge some begin in Primary

three”. The schools have put up infrastructure as a practice of menstrual hygiene management. She said:

“.....We have a few girls in P3 who have started menstruating, so we have basins for washing we have clothes that they wrap around themselves, we have dressing they put on as they are washing. ” (KI#3 Female). However, in some instances the hygiene is lacking. this narrative was shared by KI#3 Female:

“The urinals are not so good for them, the places for them to clean themselves is being worked on by the headteacher.”

Bivariate analysis

Effect of Socio-economic factors on menstrual education

The study findings showed that majority 171 (73.4%) of the girls who reported to have received menstrual education said their parents/friends got to know when they were in their periods, showing a statistically significant association ($X^2 = 12.223$, P-Value = 0.000), also majority of the girls 192 (82.4%) agreed that parents/guardians should know when they are in periods and it`s statistically significant ($X^2 = 8.421$, P-Value = 0.004). There is also a statistically significant association between the girls` menstrual education attainment and whether men/boys to be involved in menstrual education ($X^2 = 13.192$, P-Value = 0.000) with most 156 (67.0%) of the girls indicating men/boys shouldn`t be involved. The results also indicate that most 131 (56.2%) who reported to have attained menstrual education changed their towels in intervals of between 5 to 8 hours during menstruation showing a statistically significant association ($X^2 = 27.947$, P-Value = 0.000) with majority 163 (70.0%) disposing their menstrual used towels in pit

latrines and it's also statistically significant at ($X^2 = 13.999$, P-Value = 0.007). Most 121 (51.9%) of the girls with menstrual education are influenced by comfort of the pads when choosing and its statistically significant ($X^2 = 9.377$, P-Value = 0.009) (Table 10).

Table 9: Effect of menstrual education on socio-economic factors and

Variable (n=315)	Menstrual Education		Pearson Chi-square	P-Value
	Yes	No		
Friends/Parents get to know when the girl is in periods Yes No	171 (73.4%) 62 (26.6%)	43 (52.4%) 39 (47.6%)	12.223	0.000*
Parent or Guardian should know your period Yes No	192 (82.4%) 41 (17.6%)	55 (67.1%) 27 (32.9%)	8.421	0.004*
Men/boys to be involved in menstrual education Yes No	77 (33.0%) 156 (67.0%)	10 (12.2%) 72 (87.8%)	13.192	0.000*
Girls be given time off school during periods. Yes No	93 (39.9%) 140 (60.1%)	32 (39.0%) 50 (61.0%)	0.020	0.887
Number of baths during periods Once Twice Thrice Four and above	19 (8.2%) 110 (47.2%) 94 (40.3%) 10 (4.3%)	6 (7.3%) 30 (36.6%) 40 (48.8%) 6 (7.3%)	1.395	0.707
Interval of towel change during periods After every 3-4 hours After every 5-8 hours After every 12 hours Not Sure	63 (27.0%) 131 (56.2%) 36 (15.5%) 3 (1.3%)	37 (45.1%) 19 (23.2%) 22 (26.8%) 4 (4.9%)	27.947	0.000*

Menstrual pad choice influencer				
Price	33	21	9.377	0.009*
Availability	(14.2%)	(25.6%)		
Comfort	79	33		
	(33.9%)	(40.2%)		
	121	28		
	(51.9%)	(34.1%)		
Used towels disposal place				
Pit latrine	163	48	13.999	0.007*
Pad bin	(70.0%)	(58.5%)		
With rubbish	23 (9.9%)	9		
Bury them in field	40	(11.0%)		
Not sure	(17.2%)	15		
	7 (3.0%)	(18.3%)		
	0 (0.0%)	7 (8.5%)		
		3 (3.7%)		
*Significant at p<0.05				

Source: Field data

Cultural factors

The majority 120 (51.5%) of the girls who reported to have received menstrual education belong to the Baganda tribe, showing a statistically significant association ($X^2 = 40.005$, P-Value = 0.000) (Table 12).

Table 10: Effect of menstrual education on cultural factors

Variable (n=325)	Menstrual Education		Pearson Chi-square	P-Value
	Yes	No		
Tribe			40.005	0.000*
Luo/Ateso	30 (56%)	24 (44%)		
Banyakole/Bakiga	24 (73%)	9 (27%)		
Baganda	120 (89%)	15 (11%)		
Bagisu/Bagwere	22 (59%)	15 (41%)		
Basoga	32 (76%)	10 (24%)		
Others	15 (63%)	9 (37%)		
Religion			5.866	0.209
Catholic	79 (33.9%)	31 (37.8%)		
Anglican	45 (19.3%)	17 (20.7%)		
Muslim	47 (20.2%)	10 (12.2%)		
Pentecostals	50 (21.5%)	23 (28.0%)		
SDA	12 (5.2%)	1 (1.2%)		
Cultural beliefs attached to menstruation.			0.128	0.720
Yes	20 (8.6%)	6 (7.3%)		
		76 (92.7%)		

No	213 (91.4%)			
<i>*Significant at p<0.05</i>				

Multivariate analysis

All variables significant at the bivariate analysis level were taken to the logistic regression model to determine the strength of association with the menstrual education. Logistic regression was used because our dependent variables have only two outcomes (yes/no) and as such binary. The results in table 13 show that the Adolescent girls aged between 16 to 19 years showed a statistically significant association (AOR 4.85; 95% CI 1.61 - 14.57; P = 0.005) indicating that the older girls were more likely to attain menstrual education. The girls who live with both parents and mothers only are 4.40 and 5.60 times more likely to attain menstrual education as compared to those who live without their parents and it`s statistically significate (AOR 4.40; 95% CI 1.56 - 12.46; P = 0.005) and (AOR 5.60; 95% CI 1.48 - 21.17; P = 0.011).

The results also show that the girls who want men/boys to be involved in menstrual education were more likely to receive menstrual education, showing a statistically significant association (AOR 3.69; 95% CI 1.31 - 10.43; P = 0.014) with those who indicated that men/boys be involved 3.69 more likely to have attained menstrual education as compared to those who didn`t want men/boys to be involved. There is also a statistically significant association between menstrual education and the girls who change their towels after 5 to 8 hours during periods (AOR 5.57; 95% CI 2.32 - 13.35; P = 0.000) with those who changed their towels 5 to 8 hours during periods 5.57 times more likely to have attained menstrual education as compared to those who changed after 3 to 4 hours, also the results showed that the girls who dispose their

towels in the pad bin and “with rubbish” were less likely to have attained menstrual education as compared to those who dispose in the pit latrine indicating a statistically significant association with menstrual education (AOR 0.16; 95% CI 0.03 - 0.78; P = 0.023) and (AOR 0.32; 95% CI 0.11 - 9.96; P = 0.042) respectively. There is also a statistically significant association between menstrual education and the girls who choose their menstrual linen due to its availability (AOR 3.61; 95% CI 1.22 - 10.69; P = 0.020) with those who were influenced by the menstrual linen availability 3.61 more times likely to have attained menstrual education as compared to those who choose their menstrual linen due to its price. The findings show that the respondents who are of the Baganda and Basoga tribes were 16 and 4 times more likely to have received menstruation education, respectively, compared to their counterparts of Luo/ Ateso.

Table 14: Analysis of menstrual education among teenage girls

Menstrual Education	Adjusted Odds Ratio	P-Value	95% Confidence Interval	
			Lower	Upper
Age				
12 to 15	1			
16 to 19	4.85	0.005**	1.61	14.57
Education				
None	1			
Pre-primary	1			
Primary	0.60	0.707	0.04	8.80
Secondary	1.16	0.917	0.08	17.60
Tertiary	1			
Family type				
Nuclear	1			
Extended	0.72	0.470	0.29	1.77
Blended	1.55	0.632	0.26	9.29
Not defined/foster	0.97	0.976	0.18	5.21

Living arrangement				
None	1			
Father	1.68	0.467	0.42	6.76
Mother	5.60	0.011**	1.48	21.17
Both	4.40	0.005**	1.56	12.46
Parent/Guardian level of education				
No formal education	1			
Primary	3.39	0.070	0.90	12.74
Secondary	1.62	0.368	0.57	4.60
Tertiary	1.94	0.249	0.63	6.02
How Friends/ Parents get to know				
No	1			
Yes	1.93	0.138	0.81	4.58
Parent or Guardian should know your period				
No	1			
Yes	2.20	0.098	0.86	5.63
Involve men/boys in menstrual education				
No	1			
Yes	3.69	0.014**	1.31	10.43
Number of times a girl changes towels during periods				
After every 3-4 hours	1			
After every 5-8 hours	5.57	0.000**	2.32	13.35
After every 12 hours	1.08	0.893	0.34	3.46
Don `t know	0.47	0.550	0.04	5.49
Place of disposal of menstrual towels				
Pit latrine	1			
Pad bin	0.16	0.023**	0.03	0.78
With rubbish	0.32	0.042**	0.11	9.96
Burly them in fields	0.42	0.403	0.07	3.17
Don `t know	1			
Influence of choice of menstrual linen				
Price	1			
Availability	3.61	0.020**	1.22	10.69
Comfort	2.51	0.094	0.86	7.38
Tribe				
Luo/Ateso	1			
Banyakole	1.49	0.570	0.38	5.81
Baganda	15.90	0.000**	5.21	48.55
Bagisu	3.06	0.097	0.81	11.45

Basoga	4.30	0.024**	1.21	15.24
Others	7.93	0.007**	1.78	35.58

AOR - Adjusted Odds Ratio

Source: Field data

Summary of the key findings

Regarding knowledge, out of total of 315 teenage girls included in the study, the majority (73.97%) of the teenage girls had knowledge about menstruation. A slightly higher percentage 237 (75.2%) of the girls knew correctly that menstruation is a physiological process. Though majority of students know about menstruation still misperceptions exist. Most teenage girls reported receiving menstrual education from friends at school. The highest prevalence of menstrual education was 56 % among teenage girls who live with both parents and mothers.

Regarding practices, sanitary pad usage during menstruation was 83.7%. The influence of choice for the menstruation material was based on comfort followed by availability. The affordability of the pads was the least factor influencing usage of pads for proper hygiene.

CHAPTER FIVE: DISCUSSION

5.1 Introduction

This chapter presents the analyzed results in relation to the specific objectives which guided the study to assess the knowledge, attitude, and practices on menstrual hygiene management among teenage girls in Nantabulirwa Ward, Goma Division, Mukono Municipality. The discussion shall also include the effect of menstrual education on menstrual hygiene management among teenage girls in Nantabulirwa.

5.2 Knowledge on menstrual hygiene management among teenage girls

Regarding, knowledge, from the total of 315 teenage girls included in the study, the majority (73.97%) of the teenage girls had knowledge about menstruation. This finding is significantly higher than a study done in Kampala district at 69% (Nakaye Z,2018) and 64.9% at Ethiopia (Shumie & Mengie, 2022). But less than 83% of girls have knowledge of MHM in Nepal (Yadav, Joshi., Poudel 2018). This could be the easy access to knowledge from friends and high levels of knowledge on menstruation in Mukono than Kampala.

A slightly higher percentage 237(75.2%) of the girls knew correctly that menstruation is a physiological process. The explanation of this observation could be since the girls get timely information on menstruation, with majority schools being their informants; This could be attributed to the study settings which are good information sources on menstruation. Contrary to Jisha (2021) in North Bangalore India, 59% gained information from their mothers regarding menstruation, and 13% from their schools.

Though majority of students know about menstruation which might be attributed to the inclusion of reproductive and sexual health education in school still misperceptions persist in this matter. Many girls and women close to 65% are unable to adequately meet their MHM needs (Menstrual Health Uganda, 2022). Nonetheless, Uganda ratified MHM international treaties, it has not done much in promoting menstrual hygiene management (Elzy, Atuhairwe, Alege., 2017; Kalembe & Emojong, 2020). This could be that the MHM policy has not been operationalized by the line Ministries.

5.3 Attitudes of teenage girls on menstruation health management

Regarding attitude, findings of this study showed that cultural beliefs attached to menstruation were highest at 80.8% among the Baganda tribe. To the contrary, in Moroto district of Uganda 48.1% of the girls agreed that there are cultural factors attached to menstrual hygiene management (Elzy 2017) and 36.4% Mohammed & Larsen-Reindorf (2020) in a cross-sectional study done in Ghana. It could be that respondents from Baganda tribe could be having a more positive attitude towards menstruation hygiene and are more exposed to WASH practices than their counterparts from the studies done in Moroto and Ghana.

With respect to menstrual education findings of this study show 70.4% of the respondents had learnt about periods before their menarche. This is closely similar to a study done in Entebbe sub district in Uganda which indicated 77% (Miro, 2018) and 83% in Nepal (Yadav, Joshi., Poudel 2018). had received education on menstruation before menarche. However, the finding of this study is slightly higher compared to the 55.5% of the of adolescent girls who were aware of menstruation before menarche in a

study done in India (Santhanakrishnan & Athipathy, 2018). This was due to lack of menstrual knowledge particularly from mothers with low levels of menstrual education and a non-facilitating school environment making it difficult for girls to learn about menstruation.

In a randomized controlled study done in Mukono district, Uganda in 3 schools among 66 adolescent girls for 5 weeks it was found out that menstrual health strongly improved Menstrual hygiene management through reusable pads. (Yang & Chen, 2023). However, a study done in Nepal showed that in spite the girls being educated and having knowledge on menstruation this did not clearly translate into the right attitude and practice, hence, behavior change programs are required (Yadav, Joshi., Poudel 2018). This show that reproductive health education program coupled with a behavior change program on may have an impact on menstrual hygiene.

5.4 Menstrual practices among teenage girls

Regarding practices, Sanitary pad usage during menstruation was 83.7% in the present study. A study conducted in Tanzania in 2019 showed that 18% used sanitary napkins when they were menstruating (Baisley 2009)., and a study in Pakistan in 2022 about 25 305 teenagers indicated using inappropriately MHM material 61.9%, used old cloth 12.6%, using old cloth with sanitary pads 0.5%. And Nigerian study among schoolgirls found between 31% and 56 % using toilet tissue or cloth to absorb their menstrual blood as opposed to menstrual pads. (Wasan, 2022). To the contrary, in Ethiopia 54.6% used disposable sanitary pads (Shumie & Mengie, 2022). This study was done from an urban setting and mostly likely respondents are from affluent communities so can afford the sanitary pads than their counterparts.

However, in this study the influence of choice for the menstruation material was based on comfort followed by availability. The affordability of the pads was the least factor influencing usage of pads for proper hygiene. This could be attributed to the study settings in schools and being urban where even those who cannot afford sanitary pads are provided with at the time of need. More so, the administration being knowledgeable of menstrual hygiene needs of the girls.

5.2 Limitations of the study

There might have been recall and social desirability biases due to the sensitivity of menstrual issues. The research team gave assurance to the respondents and time to recall and give a response. The adequacy of the slum's infrastructure to practice good menstrual hygiene and the slum programs that may impact the teenager's knowledge of menstrual hygiene management weren't addressed extensively. This implies the findings may not be generalized. However, the strength of the study is that the study findings could provide lessons for similar settings.

CHAPTER SIX: CONCLUSION AND RECOMMENDATIONS

6.0 Introduction

This chapter presents the conclusion drawn from the study findings and gives recommendations as to the way forward on how the problem of menstrual hygiene among teenage girls can be managed.

6.1 Conclusion

Findings of the current study indicate that menstrual hygiene among adolescent girls is a common challenge. The respondents still do not exercise proper hygiene throughout their periods. The study establishes that the overall level of knowledge of the adolescent girls on menstrual hygiene management was good due to the menstrual education they received before menarche, although unsatisfactory.

Overall, the study findings show teenage girls have negative attitudes towards menstrual hygiene management. The attitudes of the girls were influenced by cultural beliefs, stigma from boys/men, and perceptions on menstruation.

Practices of the teenage girls towards menstrual hygiene management was mostly good. During menstruation it was manifested that majority of the teenage girls practiced safe practices.

Menstrual education was relatively high. This may be attributed to living arrangement of the parents with girls especially those who live with both parents and an enabling school environment on menstruation involving men and boys in context to menstruation hygiene management.

6.2 Recommendations

Menstruation is sensitive marker of reproductive health and development; thus, menstrual hygiene management is of great importance. It can be recommended from the study that: Given that school settings are the main source of MHM; there is need to improve the MHM infrastructure in schools to serve as models for change in communities including integrating reproductive health and sexual health in the teacher's continuous professional development programme. Schools need to embrace both reproductive health and behavior change programs to achieve proper Menstrual hygiene management among girls and women.

The Ministry of Education and Sports and Ministry of Health should put up MHM friendly and supportive policies including free sanitary pad distribution to the girls.

6.3 Areas of further research

Poor menstrual hygiene management (MHM) is linked to adverse health, and quality of life so there is need to advocate for further research around specific areas linked to menstrual hygiene management on the suitability of sanitary pads. Additional critical gaps in the existing evidence in quantitative approaches that are of relevance to the menstrual hygiene management research agenda include assessing the impact of multi-level interventions for menstruating girls, measuring the potentially synergistic effect of combined girl-friendly interventions through well designed process and outcome evaluations. Other aspects that would be of interest include a study on estimating the costs of menstrual management facilities, both in software (such as vocational skills in making reusable pads) and hardware (such as collecting bins for pads in washrooms).

6.4 Dissemination Plan

The findings obtained from this study will be disseminated to the different stakeholders in a number of different ways;

- Presenting findings to Nantabulirwa local councils, community groups and other local state holders
- Sharing information through community medias, radios and forums
- Conducting a menstrual hygiene promotion fair in schools and other health fair gatherings
- Presenting in meetings of professional associations
- Creating and distributing program materials, such as flyers, guides, and videos.
- Creating tool kits for trainings
- Working with others to Publish the finding in a scholarly journal website

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APPENDICES

APPENDIX 1: INFORMED CONSENT/ASSENT FORM

The title of the study

Knowledge, attitudes, and practices on menstrual hygiene management among teenage girls in Mukono Municipality slum- areas.

Investigators

Nayebale faith, student at Uganda Christian university, Faculty of Nursing and Midwifery,
Department of Public Health Save the Mother program.

Contact:

Background and rationale of the study.

In Uganda menstruation is a natural physiological process and is still dealt with in secrecy. Menstruation is considered a disease, curse, or sin by teenage girls in Uganda. The teenagers in Uganda prefer reusable pads but, in areas where there are no support structures, menstruating girls' resort to unhygienic practices. A large number of teenage girls are raised in families that believe in taboos, superstitions and indulge in stigmas relating to menstruation. Some of them use improvised materials including old pieces of mattresses, cotton wool, cloth, newspapers, and leaves as absorbents. The Forum of African Women Educationists (FAWE - Uganda) reported that among 3 girls 1 missed a school day throughout their menstrual cycle and 61.7% of teenagers' miss school in rural Uganda.

Purpose of the study

The main aim of this study is for academic purpose, we want to find out the Knowledge, Practices, and management of menstruation among the teenage girls in slums Goma division in Mukono Municipality.

Procedures

I would like to speak to about various things to do with menstrual hygiene and management. I shall start with asking you some personal questions about yourself, like your age, your education level, religion and your parents/guardian occupation. Then we shall discuss about what know about menstrual hygiene, practices, knowledge and management. This interview is expected to last for about 20 minutes.

Who will participate?

You are part of 315 teenagers we are speaking to and once your interview ends, we shall not ask you for more of your time for any activity.

Risks/discomforts

We do not expect any risk or challenges you shall face during this discussion.

Benefits

No personal benefit to taking part in the interview but by answering our questions you inform our understanding of menstrual hygiene and management.

Confidentiality

We shall ensure that the interview take place in privately, where nobody can hear our discussion. For key informant interviews, we ask you to record the discussion so that we can later find it easier to write down what happened. However, your name will not be written on the document or in our report.

Reimbursement

There will be no reimbursement for your participation in this study.

Questions about participant the rights:

If you have any questions about your rights as a participant, you can reach to Uganda Christian university accredited research ethics committee Administrator: Mr. Osborn Ahimbisibwe 0704482044 /0775737627, email: oahimbisibwe@ucu.ac.ug

Ethical approval

This study has been approved by an accredited 'Research Ethics Committee' (REC) based at Uganda Christian university.

Statement of consent /assent

I have read/ someone has read for me the above information and I have understood it.

I hereby, do agree to participate in this study.

Name Signature/thumb print of participants Date.....

Interviewer/person obtaining informed consent

Name Signature..... Date.....

Introduction

Good morning/afternoon. I am and we are assessing the knowledge, attitude and practices on menstrual hygiene among teenage girls in slum areas of Mukono Municipality. I would like to discuss matters concerning health with you.

Procedures for the study:

We shall identify a private place for the discussion to avoid distractions. Your responses will be noted, and your name will not be recorded. I will use a number which will be used to identify you.

Confidentiality:

Your responses will be presented as a contribution from one of the teenagers in the district. Your responses will be treated with a high level of confidentiality and only used for purposes of this study.

Voluntary consent:

You are free to choose to take part in this study or not, and you are free to withdraw at any time at your own discretion. Feel free to ask any questions before or after the discussion.

Statement of Informed Consent:

I have read/ someone has read for me the above information and I have understood it. I hereby, do agree to participate in this study.

Respondent's signature..... Date.....

Names of researcher prompting consent..... Signature.....

APPENDIX 2: RESEARCH QUESTIONNAIRE

KNOWLEDGE, ATTITUDES, AND PRACTICES OF MHM AMONG TEENAGE GIRLS IN MUKONO MUNICIPALITY SLUM AREAS.

Dear respondent,

I am Faith Nayebale, a student of Uganda Christian University carrying out Research study, you have been selected as one of the respondents and you are kindly requested to assist and answer the questions given below to the knowledge of your understanding. Please tick the most appropriate answer and where necessary fill in the spaces provided. The information will be kept confidential for academic purposes only.

Village.....Zone.....Date.....

Demographic characteristics

ITEM	VARIABLES	S/N	RESPONSE	TICK WHERE APPROPRIATE
1	Age	A		
2	Education	A	None	
		B	Primary	
		C	Secondary	
		D	Tertiary	
3	Relig\n	A	Catholic	
		B	Anglican	
		C	Muslim	
		D	Pentecostals	
		E	Others.....	
4	Family type	A	Nuclear	
		B	Extended	
		C	Blended	
		D	Not defined/ foster	

ITEM	VARIABLES	S/N	RESPONSE	TICK WHERE APPROPRIATE
5	Family size			
6	Living with a parent/ Parent alive	a	Both	
		b	Father	
		c	Mother	
		d	None	
7	Parent/guardian level of education.	a	No formal education	
		b	Primary	
		c	Secondary	
		d	Tertiary	
8	Parent/guardian occupation	a	Self-employed	
		b	Employed in public sector	
		c		
		d	None	
9	House type	a	Temporal	
		b	Semi-permeant	
		c	Permanent	
SOCIAL ECONOMIC FACTORS KNOWLEDGE				TICK WHERE APPROPRIATE
1	Have you ever had any education on menstruation?	a	Yes	
		b	No	
2	If yes (1 above) from where?	a	School	
		b	Media	
		c	Parents/guardian	
		d	Friends	
		e	Community	

ITEM	VARIABLES	S/N	RESPONSE	TICK WHERE APPROPRIATE	
		f	Other.....		
3	Do you have any discomfort or anxiety during your periods?	a	Yes		
		b	No		
5	If yes, (3 above) what are they?	a	Fear of leaking		
		b	Cramps		
		c	Not enough pads		
		d	Other body pains		
6	After, how often do you get their periods?	a	Monthly		
		b	Don't know		
7	Do your friends/ parents get to know when you are in your periods?	a	Yes		
		b	No		
8	If ys, (7 above) how do they know?			
9	Has anyone ever taught you on how to take care of yourself during periods	a	Yes		
		b	No		
	ATTITUDES			YES	NO
1	Do you think your parent or guardian should know when your period				

ITEM	VARIABLES	S/N	RESPONSE	TICK WHERE APPROPRIATE	
2	Should girls be given time off from school during their periods?				
3	Should men/boys be involved in menstrual education?				
4	Should menstruation information should be everywhere and anywhere?				
	MENSTRUAL PRACTICES			YES	NO
1	Have you used any of the following?	a	Cloth		
		b	Disposable pads		
		c	Reusable pads		
		d	Tampon		
		e	cotton		
		f	Pant liners		
		g	Any other.....		
2	What influenced your choice?	a	Price		
		b	Availability		
		c	Comfort		
3	Do you have access to water any time you need it	a	Yes		
		b	No		
4	How many times do you bathe when in your periods in a day?	a	Once		
		b	Twice		
		c	Thrice		
		d	Four plus		
5	How often do you change your towels while in your periods?	a	After every 3-4 hours		
		b	After every 5- 8 hours		
		c	After every 12 hours		

ITEM	VARIABLES	S/N	RESPONSE	TICK WHERE APPROPRIATE
6	Do you have access to the latrine or bathroom anytime you need it?	a	Yes	
		b	No	
7	Have you ever leaked during your periods?	a	Yes	
		b	No	
8	Have you ever felt stigmatized about your periods?	a	Yes	
		b	No	
9	Where do you dispose your used towels?	a	Pit latrine	
		b	Pad bin	
		c	With rubbish	
		d	Burry them in field	
10	Do you have access to soap and water every time you need it	a	Yes	
		b	No	
11.	How many days do you take in your periods?	a	Yes	
		b	No	
	CULTURAL FACTORS			Tick where appropriate
1	Which tribe do you belong			
2	Are there cultural beliefs attached to menstruation?	a	Yes	
		b	No	
3	If Yes, Mention them		
4	What is your		

ITEM	VARIABLES	S/N	RESPONSE	TICK WHERE APPROPRIATE
	perception towards the cultural beliefs mentioned?			

RESEARCH QUESTIONNAIRE (IN LUGANDA)

OLUKANGAGA LW'EBIBUZO EBY'OKUDDAMU.

OKUMANYI, ENDOWOOZA N'ENNEEYISA NGA BWERI MU BAWALA ABAVUBUKA (ABATIINI) ABAWANGALIRA MU BIFO EBY'OMUGOTTEKO MU KIBUGA KY'E MUKONO.

Omwagalwa omwanukuzi w'ebibuuzo,
Nze Nayebale Faith, omuyizi mu ssettendekero wa Uganda Christian University nga ndi ku mulimu gwa kunoonyereza. Olondeddwa okubeera kw'abo abagenda okuddamu ebibuuzo bino wammanga, era n'obuwombeefu, nkusaba okuddamu ebibuuzo ebyo ng'osinziira ku kutegeerako. Nsaba oteeke akakumbi (tick) ku nsonga gy'olaba nti ye ntuufu, era wekyetaagisa okuwandiika mu mabanga agalekeddwawo, oli waddembe okukikola. Ebiddibwamu byonna bigenda kukuumbwa nga byakyama, okujjako okubeera nti bigenda kweyambisibwa kulwa byanjigiriza byokka.

Ekyalo.....Zzooni.....Ennaku z'omwezi.....

Demographic characteristics

OM UW EN DO	EBIBUUZIBWA/ ENSONGA	S/N	EBIDDIBWAMU/ EKY'OKUDDAMU	TEKAWO AKAKUMBI (TICK) WEKYETAAGISA
1	Emyaka	A		
		B		
		C		
2	Obuyigirize	A	Teyasoma	
		B	pulayimale	
		C	Siniya/ssekendule	
		D	Amatendekero	
3	Eddiini	A	Mukatuliki	
		B	mukulisitaayo	
		C	Muyisiraamu	
		D	Mulokole	

OM UW EN DO	EBIBUUZIBWA/ ENSONGA	S/N	EBIDDIBWAMU/ EKY'OKUDDAMU	TEKAWO AKAKUMBI (TICK) WEKYETAAGISA
		E	Endala.....	
4	Ekika ky'amaka	A	Amaboozi	

		B	Amakungaanya	
		C	Ag'ekintabuli	
		D	Tegamanyikiddwa/gakulemberwa muzadde omu	
5	Obungi bw'abantu ababeera mu maka			
6	Abazadde boobeera nabo	a	Bombi	
		b	Taata	
		c	Maama	
		d	Tewali	
7	Obuyigirize bw'omuzadde	a	Teyasoma	
		b	Yakoma mu pulayimale	
		c	Yakoma mu Ssekendule	
		d	Yakoma mu ttendekero	
8	Omulimu gw'omuzadde/ gw'obeera naye	a	Yekozesa	
		b	Mukozi wa gavumenti	
		c	Talina	
9	Ekika ky'ennyumba	a	Ya kaseera katono	
		b	Siyabuwangaazi	
		c	Yabuwangaazi	

EBIKWATA KU MBEERA ZA BULIJJO WAMU N'EBYEENFUNA				TEKAWO AKAKUMBI (TICK) WEKYETAAGISA
1	Wali osomeseddwako ku by'ensonga zekikyala?	a	Ye	
		b	Nedda	
2	Bwekiba nti ye okusenziira ku kibuuzo ekisooka waggulu, wa?	a	Ku Ssomero	
		b	Mu mawulire	
		c	Bazadde	
		d	Mikwano	
		e	Abantu b'ekitundu	

		f	Ewalala.....	
3	Olina obuzibu bw'ofuna ng'oli mu nsonga zekikyala?	a	Ye	
		b	Nedda	
5	Bwekiba nti "ye" okusenziira ku kibuuzo eky'okusatu waggulu, bizibu ki?	a	Okutya omusaayi okukuyitamu	
		b	Okulumizibwa mu ndira	
		c	Butaba na paadi zimala	
		d	Ebitundu by'omubiri ebirala okuluma	
6	Nga ovuude mu nsonga zekikyala, Ddi lwoziddamu?	a	Buli mwezi	
		b	Simanyi	
7	Mikwano gyo oba bazadde bo bakimanya ng'oli mu nsonga zekikyala?	a	Ye	
		b	Nedda	

8	Bwekiba nti “ye” okusenziira ku kibuzo eky’omusanvu, bakimanya batya?	
9	Waliwo eyali okusomesezaako engeri yokwerabiriramu ng’oli mu nsonga zekikyala?	a	Ye
		b	Nedda
	ENDOWOOZA		YE NEDDA
1	Olowooza muzadde wo oba gw’obeera naye atekeddwa okumanya ng’oli mu nsonga z’ekikyala?		
2	Abawala batekeddwa okuweebwa akadde kubutaba ku ssomero nga bali mu nsonga zaabwe ez’ekikyala?		
3	Abasajja/Abalenzi batekeddwa okwenyigira mu kusomesa ku by’ensonga z’abkyala?		

4	Obubaka obukwata ku nsonga zabakyala, butekeddwa okubeera buli wamu?		
	EBIKOLEBWA OBA ENEEYISA NGA OLI MU NSONGA Z’EKIKYALA		YE NEDDA
1	Wali okozesezaako bino wammanga?	a	Olugoye
		b	Paadi zebakozesa omulundi ogumu
		c	Paadi zebakozesa emirundi egiwera
		d	Obuwero
		e	Ppamba
		f	Empale z’omunda
		g	Ebirala.....
2	Kiki ekyasikiriza okwagala ko?	a	Bbeeyi
		b	Okubeerawo

		c	Bulungi	
3	Olina obusobozi bw'okufuna amazzi mu kiseera kyogetaagiddemu?	a	Ye	
		b	Nedda	
4	Onaaba emirundi emmeke ng'oli mu nsonga z'ekikyala?	a	Gumu	
		b	Ebiri	
		c	Essatu	
		d	Enna n'okusuukawo.	
5	Butya wokyusa paadi ng'oli mu nsonga?	a	Buli luvannyuma lwa ssaawa 3 ku 4	
		b	Buli luvannyuma lwa ssaawa 5 ku 8	
		c	Buli luvannyuma lwa ssaawa 12	
6	Olina obusobozi wokugenda mu ttooyi oba ekiyigo buli lwobyetaaze?	a	Ye	
		b	Nedda	
7	Omusaayi gwali gukuyiseemuko ng'oli mu nsonga z'ekikyala?	a	Ye	
		b	Nedda	
8	Wali oboleddwako ng'oli mu nsonga z'ekikyala?	a	Ye	
		b	Nedda	
9	Paadi ozisuula wa ng'omaze okuzikozesa?	a	Mu ttooyi	
		b	Bwebasuula paadi	
		c	Mu kasasiro	
		d	Nziika mu ttaka	
10	Olina obusobozi wokufuna sabbuni n'amazzi buli kiseera lyobyetagiddemu?	a	Ye	
		b	Nedda	

1 0	Omala ennaku mmeka ng'oli mu nsonga zekikyala?			
	EBIKWATA KU BUWANGWA			TEKAWO AKAKUMBI (TICK) WEKYETAAGISA
1	Oli w'eggwanga ki?			
2	Waliwoy'ebyobuwa ngwa ebiwanzibwa ebyekuusa ku nsonga z'ekikyala?	a	Ye	
		b	Nedda	
3	Bwekiba nti "ye" mennyanya enzikiriza eyo.		
4	Ndwooza ki ku by'obuwangwa ebyo by'oyogeddeko?		

KEY INFORMANT INTERVIEW GUIDE

Key Informant Interview guide for Parents, Municipal Health officers, Senior women teachers

Position of the Key Informant: Tick appropriately

1, Parent, -----Head/Senior Woman Teacher, -----Health officer-----Other.....

Dear respondent,

I am Faith Nayebale, a student at Uganda Christian University carrying out Research study, you have been selected as one of the respondents and you are kindly requested to assist and answer the questions given below to the knowledge of your understanding. Please tick the most appropriate answer and where necessary fill in the spaces provided. The information will be kept confidential for academic purposes only.

Questions

1. When did you hear about menstruation?
2. Whom did you hear from?
3. Share with us the status Menstrual hygiene in this community/district?
4. Is there programme /project for menstrual hygiene, this community, who are the key stakeholders and what are activities they do?
5. What are the cultural and traditional factors influencing menstrual hygiene practices?
6. What other major factor do you think influence menstrual hygiene practices?

Thank you

APPENDIX 3:
REC Approval Notice



UGANDA CHRISTIAN UNIVERSITY
A Centre of Excellence in the Heart of Africa

UG-REC-026 Approval Version 4.0

31st October, 2023

31st October, 2023

Nayebale Faith
Uganda Christian University
+256 700134392
Email: nayebalef@gmail.com

UG-REC-026 APPROVAL NOTICE

To: Nayebale Faith, Principal Investigator

Re: UCU-REC Application titled: Knowledge, Attitudes and Practices on Menstrual Hygiene Management among Teenage Girls in Nantabulirirwa Ward, Goma Division, Mukono Municipality

Application Number: UCUREC-2023-691

Version: 4.0

Type: Initial Review
 Protocol Amendment
 Letter of Amendment (LOA)
 Continuing Review
 Material Transfer Agreement
 Other, Specify:



I am pleased to inform you that the UG-REC-026; UCUREC approved the above referenced application.

Approval of the research is for the period from 31st October, 2023, to 31st October, 2024.

This research is considered minimal risk category.

As Principal Investigator of the research, you are responsible for fulfilling the following requirements of approval:

1. All co-investigators must be kept informed of the status of the research.
2. Changes, amendments, and additions to the protocol or the consent form must be submitted to the REC for re-review and approval prior to the activation of the changes. The REC application number assigned to the research should be cited in any correspondence.
3. Reports of unanticipated problems involving risks to participants or other must be submitted to the REC. New information that becomes available which could change the risk: benefit ratio must be submitted promptly for REC review.

1 of 2

LOCAL AREA ADMINISTRATION



UGANDA CHRISTIAN UNIVERSITY

A Centre of Excellence in the Heart of Africa

UG-REC 026 Approval Version 4.0

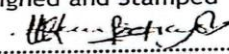
31st October, 2023

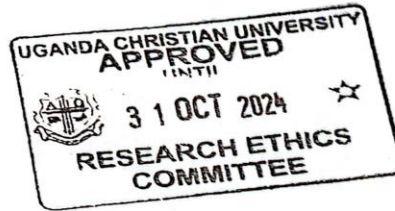
4. Only approved consent forms are to be used in the enrollment of participants. All consent forms signed by subjects and/or witnesses should be retained on file. The REC may conduct audits of all study records, and consent documentation may be part of such audits.
5. Regulations require review of an approved study not less than once per 12-month period. Therefore, a continuing review application must be submitted to the REC eight weeks prior to the above expiration date of 31st October, 2024 in order to continue the study beyond the approved period. Failure to submit a continuing review application in a timely fashion may result in suspension or termination of the study, at which point new participants may not be enrolled and currently enrolled participants must be taken off the study.
6. The REC application number assigned to the research should be cited in any correspondence with the REC of record.
7. Your research details have been shared with the Executive secretary of Uganda National Council for Science and Technology (UNCST) and you are not required to get clearance since you are a Bachelors Degree research. Refer to UNCST Research registration and clearance Policy and guidelines (July 2016) in Uganda section 6(e).

The following is the list of all documents approved in this application by UG-REC _026:

Document Title	Language	Version	Version Date
1. Protocol	English	1.0	2023-10-11
2. Data collection tools	English	1.0	2023-10-11
3. Informed Consent forms	English	1.0	2023-10-11

Signed and Stamped


 Prof. Peter Waiswa,
 UCUREC Chairperson,
 pwaiswa@musph.ac.ug



*Received by secretary
 on 7/11/2023
 0706378301*



LOCAL AREA ADMINISTRATION



THE OFFICE OF THE CHAIRPERSON
L.C.I KOLO - BUWANYI
GOMA DIVISION - MUKONO MUNICIPALITY

610

Date: 2nd 11 / 2023

TEL: 0751 431 810 / 0774 463 527

TO: WHOM IT MAY CONCERN.

RE: NATEBALE FAITH (0700 134392)

Dear sir/madam, The is to confirm that the above mentioned person as reached to our office, talked to us about her research that she wants to carry out in the community. And I therefore Authorise her to do it.

Any assistance rendered to her through your office will be highly appreciated.

Thank you!



YOURS IN SERVICE

Atwomo Elizabeth

DESIGNATION

Secretary

SIGNATURE: [Signature]

DISTRICT HEALTH OFFICER



UGANDA CHRISTIAN UNIVERSITY

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31st October, 2023

Nayebale Faith
Uganda Christian University
+256 700134392
Email: nayebalef@gmail.com

UG-REC-026 APPROVAL NOTICE

31st October, 2023

*Please key stakeholder
Kindly accord necessary
assistance*

To: Nayebale Faith, Principal Investigator

Re: UCU-REC Application titled: Knowledge, Attitudes and Practices on Menstrual Hygiene Management among Teenage Girls in Nantabulirirwa Ward, Goma Division, Mukono Municipality

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31st October, 2023

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Email: nayebalef@gmail.com

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To: Nayebale Faith, Principal Investigator

Re: UCU-REC Application titled: Knowledge, Attitudes and Practices on Menstrual Hygiene Management among Teenage Girls in Nantabulirirwa Ward, Goma Division, Mukono Municipality

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Version: 4.0

- Type: [] Initial Review
 [] Protocol Amendment
 [] Letter of Amendment (LOA)
 [] Continuing Review
 [] Material Transfer Agreement
 [] Other, Specify:



Please you are allowed to start the study as per the request. 2/10/2023

31st October, 2023



I am pleased to inform you that the UG-REC-026; UCUREC approved the above referenced application.

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