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Menstrual Hygiene Management Among Refugee Women at Kabazana Reception Centre, Nakivale Refugee Settlement, Isingiro District, Uganda

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Abstract

Background: Menstrual hygiene management (MHM) remains a critical challenge for approximately 500 million women and girls globally, exacerbated by inadequate water, sanitation, and hygiene infrastructure, particularly in public spaces like schools and refugee settlements. Uganda is the largest refugee-hosting country, with Nakivale Refugee Settlement sheltering 145,689 refugees, 52% of whom are women. New arrivals face heightened MHM challenges due to limited access to sanitary products, private facilities, and proper disposal methods. Poor MHM impacts education, health, and dignity, with crisis settings further worsening disparities.

Aim: This study aimed to assess menstrual hygiene management among refugee women at the Kabazana Reception CentreCentre, Nakivale Refugee Settlement, Isingiro District, Uganda.

Methods: This was a cross-sectional mixed-methods design, incorporating both quantitative and qualitative approaches. Data collection instruments such as questionnaires and interview guides (Key Informant Interview Guide and the In-depth Interview Guide) were employed. Data was analyzed using Stata Version 16/MP software. The qualitative data analysis encompassed a comprehensive approach, utilizing thematic analysis.

Results: Only 32.4% of respondents had adequate materials, and many relied on improvised items like used clothes and tissue paper. There was widespread embarrassment and isolation due to menstrual leaks, and privacy concerns were prevalent. Humanitarian workers were found to provide minimal support. Factors associated with better access to MHM products included being younger (ages 18-25), divorced or single, and spending more than a year at the reception Centre. Receiving regular MHM products from NGOs, access to designated latrines, and proximity to clean water were also positively associated with sufficient MHM products.

Conclusion: The findings underscore the critical need for improved MHM at Kabazana Reception Centre, highlighting insufficient access to menstrual products, limited support from humanitarian workers, and inadequate facilities. To address these issues, it is essential to establish a dedicated MHM team to provide consistent and reliable supplies, along with educational programs for both women and men to reduce stigma and promote awareness.

1. Introduction

This section presents the study's background, statement of the research problem, purpose, objectives, research questions, scope, significance, and Conceptual Framework.

1.1 Background of the Study

Approximately 500 million women and girls worldwide struggle with inadequate facilities for managing menstrual hygiene (MHM) (World Bank, 2022). This challenge is further exacerbated by insufficient water, sanitation, and hygiene (WASH) infrastructure, particularly in public spaces such as schools, markets, workplaces, and health Centres. The absence of private, secure toilets with lockable doors, a lack of proper disposal options for used sanitary products, and limited access to water for hand washing create significant barriers for women and girls in maintaining their menstrual hygiene safely, privately, and with dignity (Kaur et al., 2018; Ssemata et al., 2023).

Sub-Saharan Africa is home to nearly eight million refugees, reflecting a substantial increase over the past decade (Statistica, 2024). Uganda, the largest refugee-hosting country in Africa, currently ranks third globally, sheltering 1,693,311 refugees. Women make up 52% of this population, while girls aged 12 to 18 account for 8% of the total refugee population in the country (OPM, 2025; Statistica, 2024). Nakivale refugee settlement was established in 1958 and was officially recognized as a settlement in 1960 through the Uganda Gazette General Notice No 19. It is the 8th largest refugee camp in the World and it currently hosts 145,689 refugees from DRC, Burundi, Somalia, Rwanda, Ethiopia, and Eritrea. Although many refugees in the area have been residing there for several years, the recent conflicts in neighboring countries have increased the population (UN, 2020; UNHCR, 2019b).

Kabazana Reception Centre (KRC) is the first point of entry for people who have just arrived in Nakivale Refugee settlement, they include; those brought in convoys, referrals from other settlements or transit Centres, walk in, and asylum seekers. Many have moved distances far and wide after fleeing a situation or crisis. The reception Centre receives an average of 200 new asylum seekers each month, who await decisions on their refugee status from the Uganda Government Refugee Eligibility Committee (REC). The REC visits the settlement at least once every three months to process applications and determine refugee status (UNHCR, 2019b).

Menstruation is an essential component of Sexual Reproductive Health (SRH), and inadequate menstrual care can negatively impact girls' education, health, and overall well-being (Phillips-Howard et al., 2016). In crisis situations, girls often encounter difficulties in accessing menstrual hygiene products and proper sanitation facilities (Manolakos, 2021; Sommer, 2019). According to the World Health Organization (WHO) and the United Nations Children's Fund (UNICEF), effective MHM involves using clean menstrual materials that can be changed privately as needed throughout the menstrual period. It also includes access to soap and water for personal hygiene, safe and convenient disposal options for used

materials, and a fundamental understanding of the menstrual cycle, enabling girls and women to manage menstruation with dignity, confidence, and without distress (UNICEF, 2020; WHO, 2022).

Recent findings from the WASH poverty diagnostics highlight MHM challenges across various countries and their impact on human development. In Nigeria, 25% of women do not have sufficient privacy for defecation or managing menstruation. In Bangladesh, only 6% of schools offer MHM education, leading to limited awareness about menstruation. More than one-third of surveyed girls in Bangladesh report that menstrual-related issues negatively affect their academic performance. Similarly, in Panama, inadequate MHM facilities impact school attendance, with sixth-grade girls being 6–10 percentage points more likely to have missed at least one school day in the past six months compared to boys in the same grade or younger girls (WBG, 2019).

Around the world, countries are implementing various strategies to address menstrual hygiene management challenges. In Ghana, for instance, the World Bank is supporting sanitation infrastructure and hygiene education in more than 260 schools. This initiative was developed through focus group discussions involving over 160 girls, which revealed that poor water, sanitation, and hygiene facilities, limited access to sanitary products, and harmful cultural practices were contributing to lower school attendance among girls (World Bank, 2022). Qualitative research on MHM has also influenced the design of several projects, including an education program in Haiti that integrated MHM components based on findings from a qualitative survey. Additionally, MHM has been incorporated into large-scale programs. For example, India's Swachh Bharat Mission, a sanitation campaign backed by the World Bank Group (WBG), includes provisions for building girl-friendly sanitation facilities and promoting community awareness by engaging boys and men to help dismantle menstruation-related taboos (WBG, 2016; World Bank, 2022).

Similarly, Liberia's new education sector plan includes measures to integrate MHM and disability-friendly infrastructure into WASH programs (Sommer et al., 2022). In Ethiopia, a school WASH initiative prioritizes MHM to boost girls' enrollment and attendance. These collaborations between the World Bank and national governments have significantly advanced MHM efforts at the policy level. Beyond government partnerships, the World Bank also works with NGOs and advocacy groups. For example, in the Kyrgyz Republic, a rural water supply and sanitation project is helping the government expand UNICEF and Save the Children's MHM program to 100 more schools. This program includes upgrades to WASH facilities ensuring privacy and convenience for menstruating girls (WBG, 2019).

Displacement exacerbates gender inequalities and reinforces patriarchal norms, leaving women disproportionately affected when WASH services are limited (Sommer, 2019). Their specific needs such as access to menstrual hygiene products are often overlooked, making it especially difficult for refugee women to manage their periods with dignity and privacy (Manolakos, 2021). With significant reductions in humanitarian WASH funding, these challenges become even more severe (WHO, 2022). Addressing MHM is not just a sanitation issue, it is a critical step in protecting the dignity and bodily autonomy of women and girls (Schmitt et al., 2017; Sommer et al., 2022). In alignment with its broader commitment to gender equality, the World Bank is advancing the MHM agenda through technical and analytical efforts aimed at deepening understanding of MHM challenges thereby raising awareness of its importance (WBG, 2019).

East African countries have made notable progress in promoting menstrual hygiene management. For instance, Kenya has led efforts by integrating MHM across multiple sectors, including WASH, education, health, protection, and socio-economic development. Key policies such as the Kenya Health Policy (2012–2030), the Kenya Environmental Sanitation and Hygiene Policy Strategy (2016–2030), the National Reproductive Health Policy (2007), the Gender Policy in Education (2007), and the National Adolescent Sexual and Reproductive Health Policy (2015) all incorporate MHM measures, demonstrating a strong commitment to addressing menstrual health at a national level (Kariuki et al., 2023; RKMH, 2016; Wambui, 2018).

There remains a significant scarcity of research on the accessibility and lived experiences of refugee and displaced women and girls concerning menstruation and MHM, particularly in reception Centres. Existing studies in Uganda highlight challenges such as embarrassment, fear of stigma, and difficulties in managing menstruation due to inadequate resources and information (Beeman et al., 2023; Ivanova et al., 2019). Quantitative findings from a study conducted in Nakivale Refugee Settlement revealed that, out of 260 surveyed girls, 78% had access to disposable pads, while 18% relied on cloth made from rags (Ivanova et al., 2019). However, this study focused exclusively on school-going girls, omitting women without livelihood opportunities to afford menstrual products. These challenges are likely exacerbated in reception Centres, where constrained humanitarian conditions may further limit access to adequate MHM support.

Progress in WASH must be closely monitored to achieve the Sustainable Development Goal (SDG) of ensuring equitable access to sanitation for all. A recent World Bank and Inter-American Development Bank report, Innovation in WASH Impact Measures, highlights advancements in monitoring WASH equity, including assessing whether menstruating women and girls can wash and change in privacy at home (Thomas et al., 2018). However, similar monitoring mechanisms are critically lacking in humanitarian settings. With increasing global attention on girls' empowerment under the SDGs, there is an urgent need for more evidence on menstruation and MHM in humanitarian contexts. This study aimed to bridge existing knowledge gaps by examining the accessibility, experiences, resource availability, and role of humanitarian workers in supporting MHM for refugee women at Kabazana Reception Centre.

1.2 Statement of the Problem

Menstrual Hygiene Management has often been overlooked in acute relief responses due to the perception that it is not a life-saving necessity (Sommer, 2019). Refugees and other persons of concern (POCs) typically reside in Reception Centres (RCs) for periods ranging from one to six months before being allocated land, depending on the prevailing conditions. Many have endured long and arduous journeys, fleeing crisis situations, and arrive with limited resources to meet their basic needs, including menstrual hygiene (Bardsley, 2020; OPM, 2025). Despite the vulnerability of these individuals, their menstrual hygiene needs are frequently neglected. Failing to address MHM can have serious consequences, including loss of dignity, psychological distress, and increased vulnerability to infections.

The UNHCR WASH Manual highlights the importance of providing sanitary materials to women and girls of reproductive age, emphasizing the critical role of MHM in ensuring their health and dignity (UNHCR, 2020). However, this commitment is not consistently applied to women and girls in RCs. Furthermore, inadequate access to private and appropriate sanitation facilities exposes menstruating girls and women to significant risks, including waiting until nightfall to find a secluded place to manage their

hygiene, which heightens their exposure to sexual and gender-based violence (Beeman et al., 2023; Caruso et al., 2017; Miiro et al., 2018).

There is growing recognition that MHM is not only a matter of personal hygiene but also a critical factor for the well-being and livelihood of refugee women and girls. Inadequate access to menstrual hygiene products can prevent women from fulfilling household duties or accessing essential services, such as food and water distribution points (Grasser, 2022; Pandit et al., 2022; Sommer, 2019). Additionally, lack of menstrual products can result in girls missing school and women missing work, which has long-term negative effects on their education, economic opportunities, and overall well-being (Baker et al., 2018; Ivanova et al., 2019).

Effective MHM requires the availability of materials for absorbing menstrual blood, ensuring personal hygiene, and disposing of waste with dignity and privacy (Kaur et al., 2018). These essential components are often ignored in Reception Centres, where women and girls are left without proper facilities or support, forcing them to fend for themselves. It is against this background that this study aimed to investigate the accessibility and availability of menstrual hygiene materials, the experiences of women and girls during menstruation, and contribution of humanitarian workers towards menstrual hygiene management among refugee women while staying at the Kabazana Reception Centre in Nakivale Refugee Settlement, Isingiro District.

1.3 Objectives of the Study

1.3.1 General Objective

To assess menstrual hygiene management among refugee women while staying at the Kabazana Reception Centre in Nakivale Refugee Settlement, Isingiro District, Uganda.

1.3.2 Specific Objectives

i. To examine the accessibility to sufficient menstrual hygiene products among refugee women while staying at Kabazana Reception Centre in Nakivale Refugee Settlement, Isingiro district.
ii. To determine the availability of menstrual hygiene materials and facilities among refugee women while staying at Kabazana Reception Centre in Nakivale Refugee Settlement, Isingiro district.
iii. To evaluate the experience of refugee women while staying at Kabazana Reception Centre in Nakivale Refugee Settlement-Isingiro district towards menstrual hygiene management.
iv. To explore the contribution of humanitarian workers towards menstrual hygiene management among refugee women while staying at Kabazana Reception Centre in Nakivale Refugee Settlement, Isingiro district.

1.4 Research Questions

i. What is the level of accessibility to sufficient menstrual hygiene products among refugee women while staying at Kabazana Reception Centre in Nakivale Refugee Settlement, Isingiro district?
ii. What menstrual hygiene materials and facilities are available for refugee women while staying at Kabazana Reception Centre in Nakivale Refugee Settlement, Isingiro district?
iii. What are the experience of refugee women while staying at Kabazana Reception Centre in Nakivale Refugee Settlement-Isingiro district towards menstrual hygiene management?

iv. What is the contribution of humanitarian workers towards menstrual hygiene management among refugee women while staying at Kabazana Reception Centre in Nakivale Refugee Settlement, Isingiro district?

1.5 Significance of the Study

This study has highlighted systemic gaps which can be used to inform targeted interventions to improve MHM services. The findings can guide policymakers, NGOs, and aid agencies in designing culturally sensitive, sustainable solutions that uphold the rights and well-being of refugee women, ultimately contributing to broader goals of gender equity, public health, and inclusive humanitarian response. The study findings will also add to the existing body of knowledge regarding MHM for other scholars to build on for further research studies.

1.6 Rationale for the Study

Menstrual hygiene management is a critical yet often neglected determinant of women's health, dignity, and well-being, particularly in humanitarian settings (Hirani, 2024; Schmitt et al., 2017). Poor MHM can lead to infections, reproductive health complications, and psychosocial distress, disproportionately affecting refugee women who already face systemic barriers such as limited access to sanitary products, inadequate water and sanitation facilities, and socio-cultural stigma (WBG, 2019). This study aimed to generate evidence-based insights that can inform targeted humanitarian interventions ensuring they are not only practical and sustainable but also culturally sensitive. Addressing these gaps is essential for safeguarding women's health, upholding their rights, and advancing gender equity in displacement contexts, aligning with global commitments to inclusive health and dignity for all.

1.7.1 Conceptual Framework

1.7.2

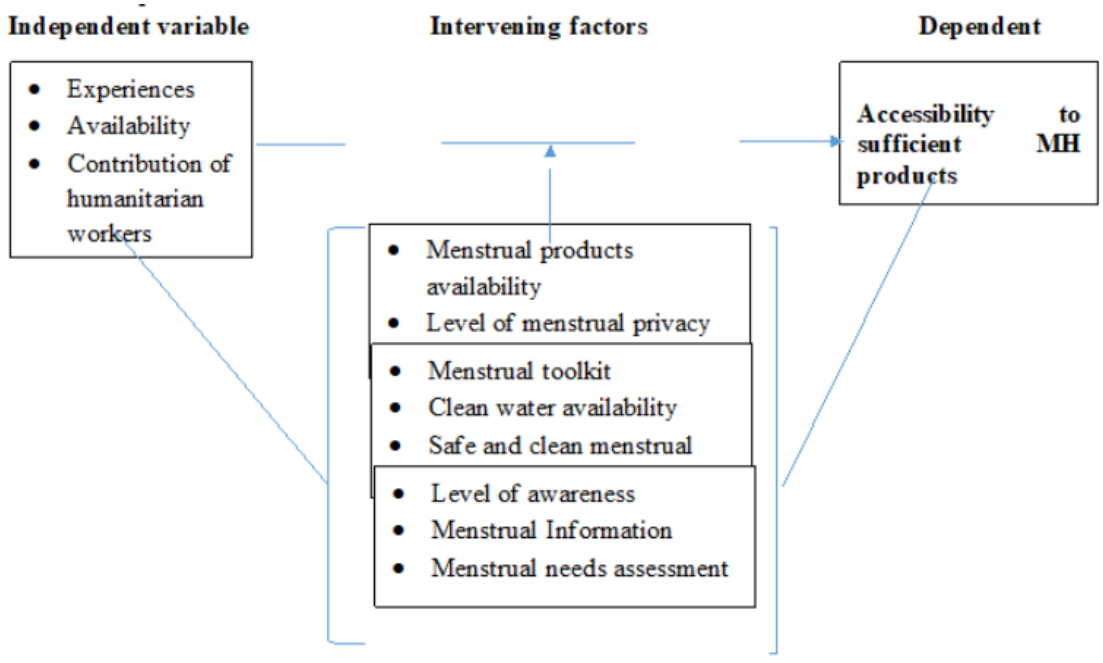


Figure 1: Conceptual Framework

Source: Formulated by the research using previous literature (2025)

1.7.2 Narrative of the Conceptual Framework

The conceptual framework for this study explores the interplay between various factors influencing MHM among refugees. The dependent variables; availability, refugee experiences regarding MHM, and humanitarian contributions shape the menstrual health landscape in humanitarian settings. Availability refers to the presence and distribution of menstrual products and facilities, while refugee experiences capture personal challenges, stigma, and coping mechanisms. Humanitarian contributions encompass the efforts of organizations in providing resources, policy support, and advocacy for improved menstrual health. These factors collectively influence the overall effectiveness of MHM interventions in refugee settlements.

Intervening variables mediate the relationship between the dependent and outcome variables, highlighting essential elements that shape MHM accessibility. These include the availability of menstrual products, the level of menstrual privacy, the extent of needs assessment conducted, the presence of a menstrual toolkit, and access to clean water and safe menstrual facilities. The adequacy of these factors determines whether refugees can manage their menstruation with dignity and comfort. For instance, the presence of clean water and private spaces for changing directly affects personal hygiene and overall menstrual well-being. Similarly, needs assessments ensure that interventions align with the actual requirements of the refugee population.

These interconnected factors influence the accessibility to sufficient menstrual health products. When the intervening variables are adequately addressed, accessibility to menstrual products improves, ensuring that refugee women and girls can manage their menstruation without barriers. Conversely, inadequacies in these areas result in limited access, exacerbating menstrual health challenges. This framework underscores the importance of a comprehensive approach to MHM in humanitarian settings.

1.8 Scope of the Study

1.8.1 Content Scope

The study covered MHM among refugee women while staying at the reception Centre, exploring the accessibility to sufficient products, availability of MHM materials and facilities, experiences in regard to managing menstruation, and the contribution of humanitarian workers to MHM among refugee women while residing at Kabazana Reception Centre.

1.8.2 Geographical Scope

The study was conducted at Kabazana Reception Centre in Nakivale Refugee Settlement, located in south-western Uganda in Isingiro District. This approach minimized costs that would otherwise have been incurred by the researcher, and it also enabled the researcher to conduct one-on-one interviews with respondents in a cost-effective way.

1.8.3 Time Scope

The study took approximately one month, which enabled the researcher to collect necessary data from study participants.

2. LITERATURE REVIEW

2.0 Introduction

This section provides a comprehensive review of existing scholarly literature on Menstrual Hygiene Management among refugee women. It synthesizes findings from various authors, publications, websites, and other relevant sources, establishing a solid foundation for this research. Additionally, this chapter critically examines the available evidence and existing information related to MHM, highlighting key insights and gaps in the literature.

2.1 Accessibility to Sufficient Menstrual Hygiene Materials

Menstrual Health and Hygiene plays a crucial role in the well-being and empowerment of women and adolescent girls (UNHCR, 2020). At any given time, over 300 million women around the world are menstruating. However, an estimated 500 million lack access to essential menstrual products and proper facilities for managing their menstrual hygiene (WBG, 2019). To manage their periods effectively, girls and women need access to WASH facilities, affordable and suitable menstrual hygiene products, accurate information on best practices, and a supportive environment free from shame or stigma (Manolakos, 2021; Patel et al., 2022). With the current geopolitical shifts and reductions in foreign aid, support for menstrual hygiene products for refugee girls and women is likely to decline further, exacerbating existing challenges (OCHA, 2025).

According to the World Health Organization, accessibility to proper menstrual hygiene facilities, including free access to hygiene products, along with timely education on menstrual health for both boys and girls, is essential for promoting health, well-being, and equal learning opportunities for displaced and refugee populations (WHO, 2022). A global systematic review on menstrual hygiene management MHM during humanitarian crises reported that the pooled proportion of individuals with adequate access to sanitary materials was 34% (95% CI: 0.24–0.45) (Patel et al., 2022).

Poor menstrual hygiene management disproportionately impacts girls and women in developing nations (Anbesu & Asgedom, 2023; Sommer et al., 2016). Between 12.3% and 75% of girls in these regions lack access to or cannot afford proper sanitary products, forcing them to rely on inadequate alternatives like cloth (new or reused), cotton, toilet paper, underwear without protection, or sponges (Kuhlmann et al., 2017; Miiro et al., 2018; Mudey et al., 2010; Schmitt et al., 2017).

Another systematic review and meta-analysis on menstrual hygiene practices and associated factors among adolescent girls reported a pooled prevalence of access to good menstrual hygiene at 55% (95% CI: 47–83) (Anbesu & Asgedom, 2023). A related study conducted in the Bidi Bidi refugee settlement revealed that 95% (104 out of 109) of menstruating individuals had access to improved and sufficient access to menstrual hygiene services (Beeman et al., 2023).

2.2 The Availability of MHM items/ facilities at the Reception Centre.

According to World Bank (2022), Menstrual Hygiene Management (MHM) refers to the practices and facilities needed for women and girls to manage their menstruation with dignity, privacy, and hygiene, including access to clean materials, facilities for changing and disposal, and soap and water for washing (World Bank, 2022). Thus the definition of MHM indicates that a holistic approach that covers both

'hardware' and 'software' (material supplies, supportive infrastructure, and MHM health education) required in order to ensure an effective and appropriate MHM response. This means that not only menstrual products are needed to ensure effective MHM, but also appropriate and gender-friendly sanitation infrastructure, soap, water, waste disposal system, knowledge of menstruation, support systems, among others (Kuhlmann et al., 2017; Panda et al., 2024).

The 2030 Agenda for Sustainable Development, adopted by UN Member States, is a global commitment to achieving the 17 Sustainable Development Goals (SDGs) with the principle of "leaving no one behind." This principle ensures that service provision at all levels is inclusive of everyone's needs and rights throughout their lives (UNDP, 2024). MHM is widely recognized in academic literature as a critical factor in achieving multiple SDGs and advancing human rights (Plesons et al., 2021; Schmitt et al., 2017; Ssemata et al., 2023).

One key SDG related to MHM is the right to water and sanitation, reflected in SDG 6, which aims to ensure universal access to sustainable water and sanitation services. The UN urges all Member States to take transformative action to provide water and sanitation services that are adequate, accessible, affordable, safe, and culturally appropriate, particularly for vulnerable populations (UNDP, 2024). While MHM is not explicitly mentioned in the SDGs, targets 6.1 (equitable access to water) and 6.2 (equitable access to sanitation and hygiene, with a focus on women and girls) highlight its importance for advancing gender equality (SDG 5). The connection between SDGs 5 and 6 is crucial for ensuring healthy livelihoods and maintaining human dignity. Additionally, MHM is linked to other SDGs, including SDG 3 (good health and well-being), SDG 4 (quality education), and SDG 12 (responsible production and consumption), reinforcing its role in sustainable development (Loughnan et al., 2020; WBG, 2019).

Ensuring adequate MHM remains a critical challenge for humanitarian actors during periods of displacement. In emergency relief efforts, the need for safe menstrual health and hygiene is often overlooked, making it difficult for many displaced women and girls to manage their menstruation safely, comfortably, and with dignity (Bardsley, 2020; Sommer, 2019). One of the primary challenges in refugee settings is the lack of access to safe, clean, and private sanitation and washing facilities (Schmitt et al., 2017). Privacy is particularly inadequate, as many toilets lack proper locks, doors, lighting, and gender segregation (Prabhakar et al., 2025; Schmitt et al., 2017). This lack of secure facilities can lead to heightened stress, physical discomfort, and an increased risk of gender-based violence (Anbesu & Asgedom, 2023; Hasan et al., 2025; Kolińska et al., 2023).

Monitoring and evaluation (M&E) activities in emergency responses remain inadequate, resulting in limited data on the effectiveness of interventions (Sommer et al., 2016). Furthermore, the absence of initial assessments to determine the menstrual needs and preferences of affected populations hinders the overall success of MHM efforts during emergencies (Schmitt et al., 2017).

2.3 The Experience of Refugee women during Menstrual Periods.

Globally, inadequate menstrual hygiene management disproportionately affects girls and women in developing countries (Kaur et al., 2018; Sommer, 2019). Many lack access to affordable sanitary products, forcing them to use improvised materials such as old cloth, cotton wool, toilet paper, or even newspaper (WBG, 2019). These alternatives often prove ineffective, uncomfortable, and unhygienic, increasing the risk of infections and leakage. However, due to financial constraints and limited availability, women have

little choice but to rely on these inadequate solutions (Phillips-Howard et al., 2016; Sommer, 2019; UNICEF, 2020).

In humanitarian settings, the challenges intensify. Beeman et al. (2023) found that displaced women in Uganda primarily used rags from old clothes, despite recognizing their shortcomings. While NGOs occasionally distribute cotton cloths, these efforts fall short without complementary resources like soap, clean water, or underwear to secure the cloths. Moreover, one-time distributions are unsustainable once supplies run out, and women revert to previous unhygienic practices. UNICEF (2020) in their report, they highlighted that humanitarian agencies often assume women will resume traditional methods post-distribution, yet prolonged displacement necessitates long-term MHM solutions.

Effective MHM extends beyond materials; it requires education on menstrual health, proper product use, hygiene practices, and safe disposal (Ssemata et al., 2023). Many girls remain uninformed about menstruation until menarche, leaving them frightened and unprepared (Anbesu & Asgedom, 2023; Bardsley, 2020) Misconceptions about fertility linked to poor menstrual education may also contribute to unplanned pregnancies (Hasan et al., 2025). School-based education is critical not only for girls but also for boys, as inclusive programs reduce stigma and teasing (Mahon et al., 2015; Mudey et al., 2010). Previous research has emphasized that menstrual education enhances girls' preparedness, mental well-being, and societal awareness, given its role in reproductive health (Baker et al., 2018; Phillips-Howard et al., 2016).

Kemigisha et al. (2020) in their study about the experience adolescent girls go through found out that; “Adolescent girls reported varied experiences regarding menstruation that included being unprepared for menarche, receiving social support on how to handle menstruation and menstrual hygiene, limited exercise or physical activities, school absences, psychological distress and physical pain. First menstrual experience girls indicated a lack of knowledge about menstruation and its management prior to menarche. Some girls reported myths regarding the cause of bleeding in the Reception Centre experiencing their menstrual periods for the first time.

The absence of private washing and changing spaces exacerbates MHM challenges. Displaced women in India’s Assam floods (Krishnan & Twigg, 2016) and Uganda (H. Parker et al., 2014) often wait until nightfall to manage menstruation in secluded areas, risking their safety. Conversely, gender-segregated facilities in Nepal post-earthquake significantly improved women’s ability to maintain hygiene (Tearne et al., 2021). Inadequate sanitation infrastructure heightens vulnerability to gender-based violence, while improper disposal of menstrual waste can clog systems or pollute environments (Bardsley, 2020; Hirani, 2024; Kaur et al., 2018).

Previous studies in various contexts reveal that women and girls frequently resort to unhygienic materials like used clothes, newspapers, or grass due to the lack of affordable and appropriate menstrual products (Anand et al., 2015; Kuhlmann et al., 2017). Similarly, in Ukraine, refugee women and girls face barriers to accessing sanitary products and clean facilities, leading to health risks and social discomfort (Kolińska et al., 2023). Displacement strips women of their usual MHM resources sanitary products, underwear, and soap, while overcrowding erodes privacy (Kolińska et al., 2023). Adolescent girls, particularly in crisis

settings, report distress, school absenteeism, and physical pain during menstruation, compounded by myths and misinformation (Ivanova et al., 2019).

2.4 The Contribution of Humanitarian Workers on MHM.

Despite growing recognition of the menstrual hygiene management (MHM) needs of adolescent girls and women, particularly about dignity, gender-based violence, education, and overall health, MHM remains insufficiently addressed in post-conflict and disaster settings.

- Hygiene kits are typically distributed at the household level without consideration for the number of menstruating individuals in each home.
- Personal dignity kits often contain only sanitary pads, failing to reflect the diverse materials used for menstrual management across different cultures and lacking provisions for safe disposal or the hygienic care of reusable products.
- In the absence of alternatives, some women resort to using old and unclean cloth, increasing the risk of irritation and infections such as urinary tract or vaginal infections.

Over the past two decades, humanitarian organizations have increasingly focused on addressing MHM in post-disaster and post-conflict situations. Key documents, including the United Nations High Commissioner for Refugees (UNHCR) Commitments to Refugee Women and Sphere's Humanitarian Charter, emphasize the importance of menstrual health provisions in ensuring women's dignity and agency (Sphere, 2018). The 2011 UNHCR report advocated for the distribution of "dignity kits" containing sanitary materials, soap, and underwear, tailored to the local context (Loescher, 2014; UNHCR, 2020). As a result, many aid organizations now include MHM supplies in their relief efforts, and dedicated organizations specifically provide MHM support during humanitarian crises (UNHCR, 2020; UNICEF, 2020; WHO, 2022). However, most interventions focus solely on providing materials and supplies, while MHM should be approached through three key pillars: materials and supplies, supportive infrastructure, and health education (Bardsley, 2020; UNHCR, 2020). Addressing all three components is essential for achieving effective MHM in emergency settings.

The internationally recognized Sphere Project (2018), which sets global emergency response standards, has highlighted MHM as a crucial element of hygiene promotion within the Water, Sanitation, and Hygiene (WASH) sector (Sphere, 2018). Consequently, WASH initiatives are responsible for ensuring the availability of safe, private, and accessible sanitation and washing facilities for menstruating individuals. Furthermore, effective MHM involves raising awareness, providing culturally appropriate disposal solutions, and integrating menstrual hygiene education into hygiene promotion strategies (Prabhakar et al., 2025; Sommer, 2019).

Hirani (2024) stress the need for humanitarian agencies to incorporate MHM into education, health, protection, and WASH sector guidelines. This includes designing female-friendly sanitation facilities, supplying appropriate menstrual materials (such as pads, cloths, and underwear), and providing essential support items (soap, buckets, torches, and pain relief medication). Additionally, agencies should offer menstrual health education in adolescent and women-friendly spaces, train school staff to support menstruating girls, and create safe environments for MHM education (Kolińska et al., 2023; Krishnan & Twigg, 2016). Proper MHM distribution should be conducted in private, secure settings led by female

staff, with demonstrations on product usage and direct feedback from beneficiaries to ensure appropriateness and effectiveness (Camp et al., 2017; Schmitt et al., 2017).

Scientific evaluations of humanitarian MHM interventions are limited, largely due to the challenges of conducting comprehensive research in crisis situations. However, pilot testing of the "Menstrual Hygiene Management in Emergencies Toolkit" in three refugee camps in northwest Tanzania demonstrated positive results. The toolkit helped identify content gaps, develop training approaches for integrating MHM into ongoing programs, and assess the relevance of recommended practices. Implemented by the International Rescue Committee and Columbia University's Mailman School of Public Health, the program provided reusable menstrual materials, education, and improved facilities. Women reported that the reusable pads reduced the risk of leaks, enabling greater mobility in daily activities (Sommer et al., 2018).

Nevertheless, some MHM interventions face significant challenges. For instance, in Burmese displacement camps, the infrequent distribution of laundry soap hindered the sustainable use of reusable pads (Schmitt et al., 2017). Research calls for enhanced monitoring and evaluation of MHM programs, emphasizing direct input from women and girls to ensure their needs are met (Bardsley, 2020; Sommer, 2019). A study by Hirani (2024) found that displaced women often lacked access to medical treatment for health issues arising from poor menstrual hygiene due to inadequate healthcare services in camps and limited awareness among humanitarian workers. Studies have reported that men's involvement in MHM education is often overlooked in refugee settings, reinforcing stigma and leaving women without necessary support (Mahon et al., 2015; Schmitt et al., 2017).

2.5 Conclusion

The literature review highlights the critical challenges refugee women face in managing menstrual hygiene, emphasizing inadequate access to sanitary products, poor WASH facilities, and lack of education, which exacerbate health risks, stigma, and gender inequality. Despite global recognition of MHM as essential for dignity and human rights, humanitarian responses often fall short. Studies reveal that refugee women frequently resort to unhygienic alternatives due to financial constraints, while insufficient sanitation facilities increase vulnerability to infections and gender-based violence. However, most existing research focuses on other countries, leaving a gap in Uganda-specific data, particularly concerning reception Centres. This study therefore aimed to assess menstrual hygiene management among refugee women at the Kabazana Reception Centre in Nakivale Refugee Settlement, Isingiro District, Uganda, to address this critical knowledge gap.

3. METHODOLOGY

3.0 Introduction

This section outlines the methodology that will be utilized in the study. It includes the research design, study area, target population, sampling techniques, data collection methods, data quality assurance, data analysis procedures, ethical considerations, potential limitations or anticipated challenges, and delimitation's.

3.1 Research Design

The study employed a cross-sectional mixed-methods design, incorporating both quantitative and qualitative approaches to comprehensively explore the research problem. The cross-sectional mixed-methods design was selected because it allows for the simultaneous examination of study ideas at a single point in time (Almeida, 2018). According to Guetterman and Fetters (2018), this dual approach overcomes the limitations of single-method studies that quantitative data alone may miss like deeper behavioral drivers, while purely qualitative findings lack measurable aspects. By integrating both approaches, the study efficiently balanced breadth and depth, aligning with best practices in public health research.

3.2 Area of the Study

The study was conducted in Nakivale Refugee Settlement, located in Isingiro District in southern Uganda, because it is a receiving settlement for new arrivals year after year. The settlement has a well-established reception Centre (Kabazana) that can accommodate more than 1,500 individuals, providing a good sample representation. The settlement is comprised of three Sub-zones namely, Base Camp Zone, Juru Sub Zone, and Rubondo Sub-Zone but the study concentrated on two zones, namely, Base Camp and Rubondo zones, where the target population resides (after being given land or settled after vacating the reception Centre).

3.3 Population

The study population included refugee women aged 18–40 years because they could give informed consent to participate. The study targeted refugee women staying in Nakivale Refugee Settlement, specifically in the Base Camp and Rubondo zones, who were of different nationalities (Congolese, Burundians, Rwandese, Somalis, among others). The targeted population was women who had stayed at the Reception Centre. Additionally, humanitarian staff from different organizations working at the Reception Centre were included in the study as key informants.

3.4 Sampling Strategies

3.4.1. Sample Size Determination

Quantitative data

According to Das et al. (2016), sample size primarily depends on three factors (time, cost, and desired precision (accuracy)). Given the three factors, the study used a selected sample of 10% of respondents who had stayed at the reception Centre. Using the mathematical formula of estimating the sample size;

Sample size n = $\frac{Z2\ X\ p(1-p)/e2}{1+(Z2\ X\ P(1-P)/e2N}$

Where:

Z is the Z score, which is equivalent to 1.96 at a 95% confidence interval level

P is the proportion of the population that has been affected by MHM at 10%

e is the coefficient error

n = $\frac{1.96\ X\ 1.96\ (0.1(1-0.1)}{0.05X0.05}$

n = $\frac{3.8416\ X\ 0.09}{0.0025}$

n = $\frac{0.345744}{0.0025}$

n = 138.297

A sample size of 139 respondents was obtained.

Qualitative data

For further exploration key themes relating to MHM among refugee women, key informant interviews with humanitarian staff, and in-depth interviews with refugee women were conducted. In this exploratory research, the sample size depended on data saturation, which was attained when the researcher obtained the main themes of the research (Guest et al., 2006). Therefore, the principle of data saturation was used to determine the maximum number of interviews to be considered. Interviews were conducted, and recruitment was stopped at the point where no new themes or information emerged from each successive interview. A total of 14 interviewees (7 female refugees and 7 humanitarian staff) were recruited.

3.4.2 Sampling Technique

For quantitative data, systematic random sampling was used to minimize bias, with participants randomly selected from different villages in Base Camp and Rubondo, where refugees from the Reception Centre had been settled or allocated land, under the guidance of the Refugee Welfare Committee (RWC) leaders. Every woman within the target age bracket (18-40) who met the inclusion criteria was included in the study and was provided with an explanation of its purpose by the researcher and research assistants. They were then asked to confirm their participation by signing a consent form.

For qualitative data, purposive sampling was employed to select interviewees. The researcher first identified key characteristics relevant to the study, including having stayed at Kabazana reception Centre for refugee women and being a current humanitarian worker or staff.

3.5 Eligibility Criteria

3.5.1 Inclusion Criteria

Participants who met the following criteria were included in the study;

- Women aged 18-40 years residing in Base Camp and Rubondo.
- Refugees who had been settled or allocated land after leaving the Reception Centre.
- Those who provided informed consent to participate in the study.
- Humanitarian staff who were current humanitarian workers.

3.5.2 Exclusion Criteria

All refugee women aged 18–40 years who had ever stayed at Kabazana Reception Centre and refused to consent, were sick, or had psychological dysfunction were excluded from the study. Staff who worked at the Reception Centre and did not consent, were sick, or had psychological dysfunction were also excluded from the study.

3.6 Data Collection Instruments/Methods

The study was both qualitative and quantitative; therefore, the methods used included surveys, primary data collection, and interviews. Data collection instruments such as questionnaires and interview guides (Key Informant Interview Guide and the In-depth Interview Guide) were employed.

3.6.1 Questionnaire

Data was collected by the researcher and research assistants, who administered a questionnaire using Kobo Toolbox Collect, which had been installed on their Android phones for data collection. The collected data was then sent to the server, where only the researcher had access rights and a password to retrieve it. The questionnaire comprised various sections, including sociodemographic information, accessibility and availability of menstrual hygiene materials, the experiences of women and girls during menstruation, and the contribution of humanitarian workers towards menstrual hygiene management.

3.6.2 Interviews

A one-on-one interview using an In-depth Interview (IDI) guide was conducted, targeting seven refugee women from the Base Camp Zone and Rubondo Zone. The structured open-ended questions allowed the researcher to probe into the menstrual experiences of women while at the Reception Centre. With the assistance of the research assistant, questions were asked in English and then translated into the respondent's preferred language. The researcher used notebooks and a voice recorder to ensure all details were captured for accurate data compilation.

Additionally, self-administered interviews using a Key Informant Interview (KII) guide were conducted to minimize discrepancies that could arise from other data collection methods. This method was used among the seven staff members working at the Reception Centre. Since all staff understood and could read English, they were provided with the KII guide to fill out at their convenience within the timeframe specified by the researcher. No recordings were done.

3.7 Data Quality Control

3.7.1 Reliability

Reliability was measured to ensure the research tools used in the study were consistent. Cronbach's alpha was used to evaluate the internal consistency of the questionnaire items. According to Amin (2005), a Cronbach's alpha of 0.6 or above is considered acceptable. Stata Version 16/MP software was used to compute Cronbach's alpha, which reflected how well responses to the questionnaire items were correlated. A score higher than 0.72 was obtained, indicating that the instrument was reliable and suitable for the study. The questionnaires were pretested with 10 respondents from Rwamwanja Refugee Settlement, and adjustments were made based on the reliability scores obtained.

3.7.2 Validity

To ensure the validity of research instruments the research supervisors reviewed them adequately to make sure they covered all relevant content. The instruments were pretested for both face and content validity. Face validity was determined by presenting the data collection tools to the supervisor for feedback on clarity and eliminating any ambiguity. Content validity was assessed by reviewing the extent to which the instruments encompassed all relevant variables related to MHM. The study also used triangulation to further strengthen the validity of the findings before the instruments were administered. The final version of the instruments was reviewed and approved by the research supervisor to ensure they met the study's objectives.

3.8 Data Analysis

3.8.1 Quantitative

Data was analysed using Stata Version 16/MP software. Descriptive statistics were used to describe the study sample. Variables were summarized using frequencies and percentages and displayed in tables or graphs. Factors associated with accessibility to sufficient MH products were determined using bivariate and multivariate logistic regression. Factors that achieved a p-value of <0.2 at bivariate analysis were considered for multivariable analysis. Confounding and interaction were assessed at multivariable analysis. Factors with p-values less than 5% at multivariable analysis were considered statistically significant.

3.8.2 Qualitative

Digital recordings from refugee women were transcribed verbatim, summarized, and thematically analyzed using an inductive and exploratory approach. The transcripts were read and re-read by the principal investigator to identify and discuss emerging themes, thereby enhancing the validity of the findings. Coded data were analyzed both manually and with the assistance of Atlas.ti software to reveal patterns that describe how participants narrated their experiences regarding menstrual hygiene management among refugee women while staying. The findings were presented as themes and narrative quotes.

Analysis of completed KIIs from the humanitarian staff encompassed a comprehensive approach, utilizing thematic analysis methodologies. Thematic analysis involved the identification and categorization of recurring patterns, concepts, and meanings within the scripts of data. Coded data were analyzed both manually and with the assistance of Atlas.ti software to reveal patterns that describe staff perspective on menstrual hygiene management among refugee women while staying at Kabazana Reception Centre and organizational contribution. The findings were presented as themes without narrative quotes.

3.9 Ethical Consideration

To uphold ethical considerations during the study, the researcher obtained permission from the Bishop Stuart University Research Ethical Committee (REC) to conduct the study. An introduction letter from the Department of Public Health at Bishop Stuart University was provided to the researcher to facilitate the study.

Additionally, the researcher sought permission from the administration and leadership of Nakivale Refugee Settlement (Office of the Prime Minister - OPM) to conduct the study within their premises. Privacy and confidentiality were strictly maintained, and all respondents had the right to provide informed consent and remain anonymous throughout the study.

3.10 Community Engagement Plan

The community engagement plan for the study on menstrual hygiene management among refugee women at Kabazana Reception Centre in Nakivale Refugee Settlement, Isingiro District, was designed to foster a collaborative and respectful partnership between the researcher and the refugee community. Before initiating the study, the researcher engaged with community leaders and stakeholders, conducting sensitization sessions to communicate the purpose, significance, and potential benefits of the research. Community liaisons, fluent in the local language and culturally aware, served as intermediaries, facilitating communication and addressing concerns.

Ethical considerations, including obtaining informed consent, were paramount, with translated consent forms and information sessions ensuring participants fully understood the study. A feedback mechanism was established to maintain ongoing transparency, including regular sessions to share preliminary findings and validate information with the community.

4. RESULTS

4.0 Introduction

This chapter contains the results of data collected, which were analyzed and presented in tables and pie charts. The study's sample size was 139, with a 100% response rate. The Key informant interviews (KIIs) and In-depth Interviews (IDIs) were also conducted among 7 female refugees and 7 humanitarian staff, respectively.

4.1 Socio-demographic Characteristics of Respondents

The table below shows the univariate analysis of demographic characteristics of study respondents.

Table 1: Socio demographic characteristics of respondents

Variable	Frequency	Percentage (%)
Age		
18-25	42	30.2
26-33	46	33.1
34-40	51	36.7
Marital Status		
Married	64	46.0
Divorced	37	26.6
Single	28	20.1
Others	10	7.3
Country of Origin		
DRC	49	35.3
Rwanda	43	30.9
Burundi	38	27.3
Somalia	8	5.8
Ethiopia	1	0.7
Highest level of education		
None	78	56.1
Others	38	27.3
Certificate	23	16.6
Year of arrival in Nakivale		
2001-2005	29	20.9
2006-2010	23	16.5
2011-2015	20	14.4
2016-2020	44	31.7

2021-2025	23	16.5
Zone		
Basecamp	51	36.7
Rubondo	49	35.3
Kabazana A	19	13.7
Other	20	14.3
Time spent at the Reception Centre		
Less than 6 months	75	54.0
Above 1 year	37	26.6
Upto 1 year	27	19.4

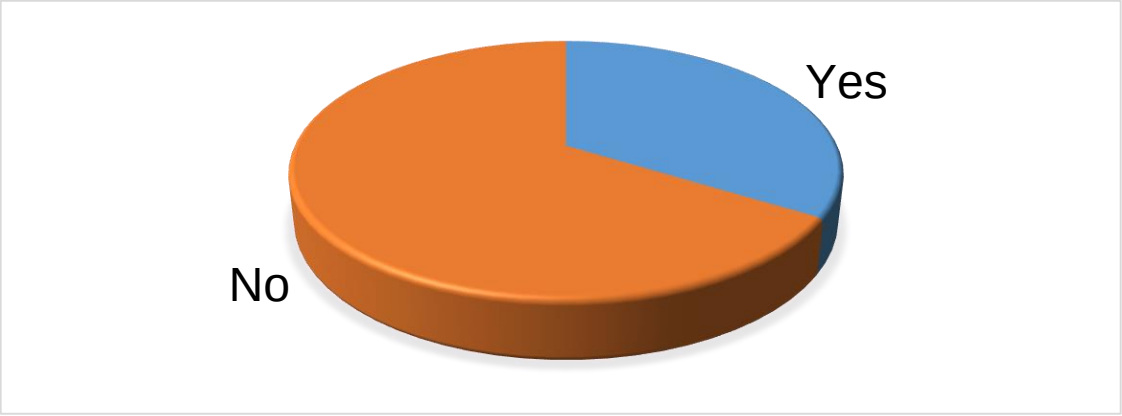
Source: Primary data, 2025

The majority of respondents were within the 34-40 age group (36.7%), followed closely by those aged 26-33 (33.1%). Most participants were married (46.0%). In terms of nationality, a significant proportion originates from the Democratic Republic of Congo (35.3%), with notable representation from Rwanda (30.9%). Educational attainment is generally low, as more than half (56.1%) of the respondents had no formal education. Regarding settlement history, the largest group of respondents arrived between 2016-2020 (31.7%). Most reside in Basecamp (36.7%) and Rubondo (35.3%) zones. Additionally, a majority (54.0%) spent less than six months at the reception Centre before integration/settling into the settlement.

4.1 Accessibility to Sufficient Menstrual Hygiene Materials at the Reception Centre

The data indicates that only 45 (32.4%) of the respondents had access to sufficient menstrual hygiene materials while staying at the reception Centre. Refer to figure 2.

Figure 2: Accessibility to sufficient menstrual hygiene materials while at the RC



Source: Primary data, 2025

4.3 Availability of Menstrual Hygiene Materials and Facilities at Kabazana RC

The table below shows the univariate analysis of the availability of menstrual hygiene materials and facilities at Kabazana reception center, as self-reported by study respondents.

Table 2: Availability of menstrual hygiene materials and facilities

Variable	Frequency	Percentage (%)
Menstrual hygiene products used while at RC		
Disposable sanitary pads	40	28.8
Reusable cloths	35	25.2
Tissue paper	5	3.6
Reusable pad	50	36.0
Others	9	6.4
Source of Menstrual hygiene materials		
Bought	38	27.3
Distributed by NGOs/humanitarian agencies	45	32.4
Borrowed from others	30	21.6
Others	26	18.7
Frequency of receiving menstrual hygiene products from NGOs		
Regularly	20	14.4
Occasionally	40	28.8
Rarely	45	32.4
Never	34	24.4
Presence of designated latrines for women at the RC		
Yes	58	41.7
No	81	58.3
Availability of water near the latrines		
Yes	44	31.7
No	95	68.3
Mode of disposal of used menstrual hygiene products		
In designated bins	17	12.2
In Latrines	60	43.2
In open areas	45	32.4
Burn them	17	12.2
Availability of menstrual change rooms		
Yes	39	28.1
No	100	71.9
Availability of separate bathrooms for women and men		
Yes	85	61.2
No	54	38.8
Provision of soap for cleaning during menstruation		
Yes	90	64.7
No	49	35.3
Provision of nickers for girls and women		
Yes	70	50.4

No	69	49.6
Provision of basins/buckets for bathing and/or washing		
Yes	95	68.3
No	44	31.7

Source: Primary data, 2025

The findings indicate that most respondents (36%) relied on reusable pads as their primary menstrual hygiene product. Regarding the source of menstrual hygiene materials, the majority (32.4%) got them from NGOs/humanitarian agencies. Access to menstrual hygiene products remains inconsistent, as 32.4% of respondents rarely received supplies from NGOs, while 24.4% reported never receiving any assistance. Furthermore, inadequate sanitation facilities pose significant challenges, with 58.3% of respondents reporting the absence of designated latrines for women, and 68.3% lacking access to water near latrines.

Disposal of used menstrual products remains a concern, as 43.2% of respondents discarded them in latrines. Additionally, 71.9% of respondents reported not having access to menstrual change rooms. Access to other essential hygiene facilities also varies, with 61.2% of respondents reporting the availability of separate bathrooms for women and men, and 64.7% confirming the provision of soap for cleaning during menstruation. Half of the respondents (50.4%) received nickers, and 68.3% had access to basins or buckets for bathing and washing.

4.4 Experience of Refugee Women while Staying at Kabazana RC

Most respondents (62.6%) strongly agreed that they primarily relied on materials like used clothes, tissue paper, newspapers, grass, and mattresses during menstruation. Menstrual leaks were also a common concern, as 57.6% strongly agreed and 28.8% agreed that their clothes were often stained with blood. Furthermore, shame and embarrassment around menstruation were prevalent, with 60.4% strongly agreeing. Most women and girls engaged in discreet hygiene practices, as 65.5% strongly agreed that they washed their undergarments at night out of fear of being seen. Nearly half (46.0%) strongly disagreed that they were given enough privacy at the reception Centre (RC), and 20.9% disagreed. Additionally, 34.5% strongly disagreed that they could comfortably go out to fetch water, food, or visit public places during their periods. Isolation was also common, with 39.6% strongly agreeing that they would withdraw during menstruation. Nearly half (49.6%) of respondents strongly agreed that their garments were regularly stolen.

Table 3: Experience of refugee women while staying at Kabazana Reception Centre

Variable	SA n (%)	A n (%)	DA n (%)	SDA n (%)	NS n (%)
I use materials like cloths, tissue paper, newspapers, grass, and mattresses during menstruation.	87 (62.6)	41 (29.5)	6 (4.3)	4 (2.9)	1 (0.7)
My clothes were often stained with menstrual blood every time I would go in my periods.	80 (57.6)	40 (28.8)	9 (6.5)	3 (2.2)	7 (5.0)

Shame and embarrassment around menstruation are often experienced for displaced women and girls.	84 (60.4)	46 (33.1)	6 (4.3)	2 (1.4)	1 (0.7)
I would comfortably go alone to fetch water, food, go in public places while in my periods.	34 (24.5)	24 (17.3)	30 (21.6)	48 (34.5)	3 (2.2)
I would isolate myself each time I went in my periods.	55 (39.6)	61 (43.9)	12 (8.6)	6 (4.3)	5 (3.6)
I would wash my undergarments at night in fear of being seen.	91 (65.5)	32 (23.0)	6 (4.3)	4 (2.9)	6 (4.3)
My undergarments were regularly stolen.	69 (49.6)	46 (33.1)	6 (4.3)	10 (7.2)	8 (5.8)
Women and girls were given enough privacy at the RC during their menstrual periods.	10 (7.2)	29 (20.9)	29 (20.9)	64 (46.0)	7 (5.0)

Source: Primary data, 2025; strongly agree (SA), Agree (A), Not sure (NS), Disagree (DA), Strongly Disagree (SDA)

4.5 Contribution of Humanitarian Workers toward MHM

The findings indicate a majority (52.5%) of respondents strongly disagreed that humanitarian workers provided treatment for infections related to poor MHM. Additionally, 52.5% strongly disagreed that men at the reception Centre were educated on how to support women during menstruation. Monitoring and evaluation of MHM services were inadequate, with 44.6% strongly disagreeing that timely assessments were conducted. Similarly, 46.8% strongly disagreed that humanitarian workers provided the necessary support for MHM. Sensitization efforts were also lacking, as 45.3% strongly disagreed that humanitarian workers regularly provided MHM awareness messages. The absence of a dedicated MHM team was evident, with 44.6% strongly disagreeing that such a team existed at the Centre. Furthermore, 43.2% strongly disagreed that external partners occasionally supplied MHM items. These findings highlight the urgent need for improved MHM interventions, including increased awareness, monitoring, and consistent supply of essential items.

Table 4: Contribution of humanitarian workers towards MHM

Variable	SA n (%)	A n (%)	DA n (%)	SDA n (%)	NS n (%)
Humanitarian workers have provided the necessary support towards MHM while at the RC.	2 (1.4)	16 (11.5)	36 (25.9)	65 (46.8)	20 (14.2)
Humanitarian workers tend to give more food relief compared to menstrual hygiene management relief at the RC.	48 (34.5)	11 (7.9)	30 (21.6)	28 (20.1)	22 (15.8)

There is a timely monitoring and evaluation of the items and services offered in regards to MHM on women and girls at RC.	2 (1.4)	15 (10.8)	41 (29.5)	62 (44.6)	19 (13.7)
Humanitarian workers have provided us with treatment of infections related to diseases caused by poor MHM at RC.	3 (2.2)	14 (10.1)	37 (26.6)	73 (52.5)	12 (8.6)
Humanitarian workers have done a good job regarding menstrual hygiene management at the RC.	2 (1.4)	12 (8.6)	48 (34.5)	59 (42.5)	18 (13.0)
Humanitarian workers provide you with sensitization messages about MHM from time to time at the Reception Centre.	1 (0.7)	16 (11.5)	41 (29.5)	63 (45.3)	18 (13.0)
The workers at the Reception Centre are sometimes unaware of the lack of menstrual hygiene management items for the women and girls.	12 (8.6)	32 (23.0)	19 (13.7)	50 (36.0)	26 (18.7)
The men at the Reception Centre are also educated on how to support women during their menstrual periods.	1 (0.7)	7 (5.0)	45 (32.4)	73 (52.5)	13 (9.4)
Partners sometimes visit RC and supply MHM items once in a while.	10 (7.2)	21 (15.1)	30 (21.6)	60 (43.2)	18 (13.0)
Humanitarian workers always sensitize girls about any forthcoming menstrual period instances as they grow.	9 (6.5)	23 (16.6)	32 (23.0)	62 (44.6)	13 (9.4)
RC has a dedicated individual or team that orients the women and girls on menstrual hygiene.	1 (0.7)	10 (7.2)	40 (28.8)	62 (44.6)	26 (18.7)

Source: Primary data, 2025; Strongly Agree (SA), Agree (A), Not sure (NS), Disagree (DA), Strongly Disagree (SDA)

4.6 Bivariate and Multivariate Analysis of Socio-demographic Characteristics of Respondents

At bivariate analysis, age (18–25 and 26–33 years), marital status (divorced), and time spent at the reception centre (>1 year) were significantly associated with accessibility to sufficient menstrual hygiene products ($p < 0.05$). Following bivariate analysis, variables that achieved a p-value of 0.2 were further analyzed at multivariate analysis using a logistic regression model.

Table 5: Socio demographic factors associated with accessibility to sufficient MH products

Variable	Accessibility to sufficient MH products		OR (95%CI)	P-value	AOR (95%CI)	P-value
	Yes 45 (32.4%)	No 94 (67.6%)				
Age						
18-25	20 (47.6%)	22 (52.4%)	4.25 (1.75–10.30)	**0.017**	3.80 (1.50–9.60)	**0.002**
26-33	16 (34.8%)	30 (65.2%)	2.13 (1.10–4.15)	**0.033**	1.95 (0.95–4.00)	0.070
34-40	9 (17.6%)	42 (82.4%)	1.00	-	1.00	-
Marital Status						
Married	7 (18.9%)	30 (81.1%)	1.00	-	1.00	-
Divorced	23 (35.9%)	41 (64.1%)	2.36 (1.20–4.65)	**0.044**	2.10 (1.05–4.20)	**0.035**
Single	2 (20.0%)	8 (80.0%)	1.67 (0.40–2.85)	0.051	1.12 (1.01–2.60)	**0.010**
Others	13 (46.4%)	15 (53.6%)	3.71 (1.50–9.20)	0.112	3.20 (1.25–8.15)	0.125
Country of Origin						
Burundi	1 (100.0%)	0 (0.0%)	1.00	-	1.00	-
DRC	9 (23.7%)	29 (76.3%)	2.07 (0.56–4.13)	0.224	1.97 (0.45–4.10)	0.220
Rwanda	17 (34.7%)	32 (65.3%)	1.72 (0.80–3.70)	0.707	1.60 (0.75–3.45)	0.220
Somalia	11 (25.6%)	32 (74.4%)	1.12 (0.50–2.50)	0.327	1.05 (0.45–2.40)	0.900
Ethiopia	7 (87.5%)	1 (12.5%)	12.75 (2.50–27.50)	0.051	7.50 (2.20–19.00)	0.108
Highest level of education						
None	8 (34.8%)	15 (65.2%)	1.00	-	1.00	-
Others	8 (21.1%)	30 (78.9%)	0.50 (0.20–1.25)	0.101	0.45 (0.18–1.15)	0.095
Certificate	29 (37.2%)	49 (62.8%)	1.12 (0.60–2.10)	0.203	1.05 (0.55–2.00)	0.870
Year of arrival in Nakivale						
2001-2005	9 (31.0%)	20 (69.0%)	1.00	-	1.00	-
2006-2010	7 (30.4%)	16 (69.6%)	1.03 (0.50–2.10)	1.000	0.95 (0.45–2.00)	0.890
2011-2015	6 (30.0%)	14 (70.0%)	1.07 (0.55–2.10)	1.001	1.00 (0.50–2.00)	0.990
2016-2020	14 (31.8%)	30 (68.2%)	0.95 (0.50–1.80)	0.925	0.90 (0.45–1.75)	0.750
2021-2025	9 (39.1%)	14 (60.9%)	0.70 (0.30–1.60)	0.142	0.65 (0.28–1.50)	0.310
Zone						
Basecamp	16 (31.4%)	35 (68.6%)	1.00	-	1.00	-
Rubondo	16 (32.7%)	33 (67.3%)	1.04 (0.50–2.15)	0.188	1.00 (0.48–2.10)	0.990
Kabazana A	6 (31.6%)	13 (68.4%)	0.89 (0.40–2.00)	0.127	0.85 (0.38–1.90)	0.690
Other	7 (35.0%)	13 (65.0%)	1.04 (0.50–2.15)	1.000	1.00 (0.48–2.10)	0.990
Time spent at RC						
< 6 months	5 (13.5%)	32 (86.5%)	1.00	-	1.00	-
>1 year	34 (45.3%)	41 (54.7%)	5.29 (2.50–11.20)	**0.004**	4.80 (2.20–10.50)	**<0.001**
Upto 1 year	6 (22.2%)	21 (77.8%)	1.83 (0.80–4.20)	0.256	1.70 (0.75–3.90)	0.200

OR (Odds ratio), AOR (Adjusted odds ratio), CI (Confidence interval), P<0.05 (statistically significant)

At multivariate analysis, age, marital status, and time spent at the reception Centre were strongly associated with accessibility to sufficient MH products. For age, individuals aged 18-25 were 3.8 times more likely to have access to sufficient MH products compared to those aged 34-40 (AOR = 3.8, 95%CI [1.50–9.60]). Similarly, those who are divorced were 2.2 times more likely to have access to sufficient MH products compared to married individuals (AOR= 2.10, 95%CI [1.05–4.20]). Those who were single were 1.12 times more likely to have access to sufficient MH products compared to married individuals (AOR= 1.12, 95%CI [1.01–2.60]). Women who had spent more than 1 year at the reception Centre were also 4.8 times more likely to have access to sufficient MH products compared to those who had spent less than 6 months (AOR= 4.80, 95%CI [2.20–10.50]).

4.6 Bivariate and Multivariate Analysis of the Accessibility to Sufficient MH Products with their Availability

At bivariate analysis, use of disposable sanitary pads, purchasing menstrual hygiene products, receiving products regularly from NGOs, presence of designated latrines for women, availability of clean latrines nearby, disposal of used products in designated bins, and availability of menstrual change rooms were all significantly associated with accessibility to sufficient menstrual hygiene products ($p < 0.05$). Following bivariate analysis, variables that achieved a p-value of 0.2 were further analyzed at multivariate analysis using a logistic regression model.

Table 6: Bivariate and Multivariate analysis of the accessibility to sufficient MH products with their availability

Variable	Accessibility to Sufficient MH products		OR (95% CI)	P-value	AOR (95% CI)	P-value
	Yes 45 (32.4%)	No 94 (67.6%)				
Menstrual Hygiene Products Used at RC						
Disposable sanitary pads	22 (55.0%)	18 (45.0%)	2.49 (1.40–6.30)	**0.012**	2.25 (1.20–5.90)	0.074
Reusable cloths	12 (34.3%)	23 (65.7%)	1.10 (0.50–2.30)	0.836	1.00 (0.45–2.20)	0.800
Tissue paper	3 (60.0%)	2 (40.0%)	5.00 (0.90–28.00)	0.329	4.50 (0.80–25.00)	0.080
Reusable pad	8 (16.0%)	42 (84.0%)	1.00	-	1.00	-
Others	0 (0.0%)	8 (100.0%)	-	-	-	-
Source of Menstrual Hygiene Materials						
Bought	18 (47.4%)	20 (52.6%)	2.50 (1.10–5.60)	**0.026**	2.20 (0.95–5.10)	0.065
Distributed by NGOs/humanitarian agencies	15 (33.3%)	30 (66.7%)	1.30 (0.60–2.70)	0.367	1.20 (0.55–2.60)	0.620

Borrowed from others	7 (23.3%)	23 (76.7%)	0.70 (0.30–1.70)	0.276	0.65 (0.25–1.60)	0.350
Others	5 (19.2%)	21 (80.8%)	1.00	-	1.00	-
Frequency of Receiving MH Products from NGOs						
Regularly	12 (60.0%)	8 (40.0%)	4.00 (1.30–12.50)	**0.008**	3.50 (1.10–11.00)	**0.035**
Occasionally	24 (60.0%)	16 (40.0%)	1.80 (0.80–4.00)	0.114	1.60 (0.70–3.70)	0.250
Rarely	6 (13.3%)	39 (86.7%)	0.50 (0.20–1.30)	0.074	0.45 (0.18–1.20)	0.110
Never	3 (8.8%)	31 (91.2%)	1.00	-	1.00	-
Presence of Designated Latrines for Women						
Yes	28 (48.3%)	30 (51.7%)	2.20 (1.10–4.40)	**0.049**	2.00 (1.95–4.20)	**0.041**
No	17 (21.0%)	64 (79.0%)	1.00	-	1.00	-
Availability of Clean near Latrines						
Yes	18 (40.9%)	26 (59.1%)	2.50 (1.20–5.20)	**0.034**	2.20 (1.00–4.80)	**0.045**
No	27 (28.4%)	68 (71.6%)	1.00	-	1.00	-
Mode of Disposal of Used MH Products						
In designated bins	10 (58.8%)	7 (41.2%)	3.80 (1.20–12.00)	**0.025**	3.50 (1.10–11.50)	0.065
In Latrines	22 (36.7%)	38 (63.3%)	0.70 (0.30–1.60)	0.366	0.65 (0.28–1.50)	0.320
In open areas	7 (15.6%)	38 (84.4%)	0.50 (0.20–1.30)	0.108	0.45 (0.18–1.20)	0.120
Burn them	6 (35.3%)	11 (64.7%)	1.00	-	1.00	-
Availability of menstrual change rooms during menstruation						
Yes	20 (51.3%)	19 (48.7%)	2.80 (1.30–6.00)	**0.004**	2.50 (1.10–5.60)	0.062
No	15 (15.0%)	85 (85.0%)	1.00	-	1.00	-
Availability of separate bathrooms for women and men						
Yes	25 (55.6%)	60 (63.8%)	0.70 (0.35–1.40)	0.159	0.65 (0.30–1.29)	0.371
No	20 (44.4%)	34 (36.2%)	1.00	-	1.00	-
Provision of soap for cleaning during menstruation						
Yes	30 (66.7%)	60 (63.8%)	1.15 (0.55–2.40)	0.163	1.10 (0.50–2.32)	0.750
No	15 (33.3%)	34 (36.2%)	1.00	-	1.00	-

Provision of nickers for girls and women						
Yes	20 (44.4%)	50 (53.2%)	0.70 (0.35–1.40)	0.127	0.65 (0.30–1.30)	0.300
No	25 (55.6%)	44 (46.8%)	1.00	-	1.00	-
Provision of basins/buckets for bathing and/or washing						
Yes	35 (77.8%)	60 (63.8%)	1.50 (0.70–4.20)	0.199	1.40 (0.65–4.00)	0.400
No	10 (22.2%)	34 (36.2%)	1.00	-	1.00	-

OR (Odds ratio), AOR (Adjusted odds ratio), CI (Confidence interval), P<0.05 (statistically significant)

Results from the multivariate analysis indicated that individuals who received MH products regularly from NGOs were 3.5 times more likely to have access to sufficient MH products compared to those who never received them (AOR = 3.50, 95% CI [1.10–11.00]). Women who had access to designated latrines were 2.0 times more likely to have sufficient MH products compared to those without designated latrines (AOR = 2.00, 95% CI [1.95–4.20]). Those with water near latrines were 2.2 times more likely to have access to sufficient MH products compared to those without clean water (AOR = 2.20, 95% CI [1.00–4.80]).

4.7 Qualitative Data

Thematic summary of menstrual hygiene management among refugee women while staying at Kabazana Reception Centre in Nakivale Refugee Settlement, among respondents (women).

Table 7: Key Informant Interviews and Themes that Emerged.

Question	Responses
1. What were humanitarian workers or staff doing at the Reception Centre regarding MHM?	**Major Theme:** Limited Involvement in MHM • Minimal support provided for MHM • No dedicated MHM team or specific programs • Occasional distribution of sanitary pads, but inconsistent • Lack of education or sensitization for men on supporting women during menstruation
2. Were there any orientation or sensitization services offered by humanitarian workers regarding MHM at the RC?	**Major Theme:** Lack of Sensitization • No formal orientation or sensitization on MHM • Minimal awareness campaigns or education on menstrual hygiene • Women and girls lacked knowledge about proper MHM practices
3. Would you feel free to openly reach out to any humanitarian worker at the RC regarding any MHM issue?	**Major Theme:** Reluctance to Seek Help • Women felt uncomfortable discussing MHM issues with humanitarian workers • Lack of trust in staff due to minimal support and engagement

	• Fear of stigma and embarrassment when discussing menstruation
4. Were there any IEC materials or items concerning MHM distributed among the girls?	**Major Theme:** Absence of IEC Materials • No informational, educational, or communication (IEC) materials on MHM • No distribution of pamphlets, posters, or other educational resources • Women and girls lacked access to information on proper MHM practices
5. Do you feel the humanitarian workers did their best to support and promote best MHM practices at the RC?	**Major Theme:** Insufficient Support • Humanitarian workers did not prioritize MHM • Lack of consistent provision of menstrual hygiene materials • No dedicated efforts to improve MHM facilities or education

R (Respondent)

Major Theme: Limited Involvement in MHM

Respondents consistently reported that humanitarian staff provided only minimal support for menstrual hygiene management. There was no dedicated MHM team or structured programs specifically addressing the needs of women and girls during menstruation. *"Sometimes they give pads, but not always."* (**Respondent-03**). *"……..even I didn't see people from the organizations coming to talk to us about menstruation. It's like they forget it's something we face every month."* (**Respondent-01**). The lack of engagement in MHM was also evident among reception staffs: *"Our reception, no no no, the staff are in charge but show us support. They just keep quiet and focus on accommodation and feeding services and maybe sanitation"* (**Respondent-04**).

Major Theme: Lack of Sensitization

There was a consensus that no formal orientation or awareness-raising sessions were conducted on MHM. This lack of education contributed to poor practices and misinformation among adolescent girls and women. *"I only learned about menstruation from my friend. No one here ever explained to me how to manage it well."* (**Respondent-06**). *"There was no teaching, no meeting about periods. We just handled it the way we know."* (**Respondent-07**).

Major Theme: Reluctance to Seek Help

Women and girls expressed deep discomfort and fear of embarrassment when it came to discussing menstruation with staff. This was mainly attributed to a lack of trust and engagement from humanitarian workers on the topic. *"You feel shy... and you fear what they will think if you tell them you need pads or have a problem."* (**Respondent-05**). *"They don't seem friendly about such things. So we just keep quiet."* (**Respondents-07**). The stigma surrounding menstruation further discouraged open communication. *"If you say you have a menstrual issue, they look at you like you're being a problem."* (**Respondents-06**).

Major Theme: Absence of IEC Materials

There was a clear absence of educational materials such as leaflets, posters, or other communication tools about MHM. Respondents indicated that such materials could have helped reduce shame and improve hygiene practices.*"I have never seen any papers or posters about menstruation here. Not even once."* (**Respondents-03**). *"Even if you don't have someone to talk to, if there were materials to read, it would help us learn."* (**Respondents-05**).

Major Theme: Insufficient Support

Across all interviews, respondents strongly felt that humanitarian workers did not prioritize MHM. There were frequent shortages of sanitary materials, and no infrastructure or consistent programs to address MHM comprehensively. *"If they cared enough, they would provide us with pads every month, teach us, and even build better places for us to change."* (**Respondents-02**). Another added:

"Menstrual hygiene is not important to them. We survive on our own." (**Respondents-01**)

Thematic summary of menstrual hygiene management among refugee women while staying at Kabazana Reception Centre in Nakivale Refugee Settlement among staff.

Table 8: Key Informant Interviews and Themes that Emerged.

Question	Responses	KIIs
1. Which services/projects does your organization offer to refugees at the Reception Centre (RC) under MHM?	**Major Theme:** Limited MHM Services • No dedicated MHM projects or services • Minimal provision of sanitary pads • Lack of emergency MHM toolkits • No specific programs for MH education	KII-01, KII-02, KII-04
2. How do women manage their menstrual periods while at the Reception Centre?	**Major Theme:** • Inadequate Menstrual Management • Use of improvised materials (used clothes, tissue paper, mattresses) • Frequent menstrual leaks and stained clothing	KII-01, KII-03
3. Are there guidelines for menstrual hygiene management at the Reception Centre? If yes, please mention them. If no, what are your interventions on MHM?	Major Theme: **Absence of Guidelines** • No formal guidelines for MHM at the Centre • Ad-hoc interventions such as occasional distribution of sanitary pads • No structured plan for menstrual waste disposal or hygiene education	KII-01 to KII-04
4. Do you provide menstrual items at the Reception Centre? If yes, what do you specifically provide? If no,	Major Theme: **Insufficient Provision of Menstrual Items** • Occasional provision of sanitary pads, but not consistently • No emergency MHM toolkits	KII-03, KII-4 KII-06

what do you do to cater for this need?		
5. How often do you provide these menstrual items?	**Major Theme:** Irregular Provision • Menstrual items are provided irregularly and inconsistently • No fixed schedule for distribution	KII-03 to KII-07
6. Are there clean, safe, and private washrooms for women and girls at the Reception Centre?	**Major Theme:** Poor Washroom Facilities • Lack of clean and private bathing facilities • Inconsistent supply of clean water • No designated menstrual waste disposal systems (e.g., incinerators)	KII-05, KII-07
7. What measures do you think can be put in place to improve menstrual hygiene management at the Reception Centre?	**Major Theme:** Recommendations for Improvement • Increase provision of MHM materials • Establish proper menstrual waste disposal systems (e.g., incinerators) • Provide education and sensitization on MHM	KII-01, KII-05, KII-6

KII (Key Informant Interview)

From the perspective of humanitarian workers, there were no dedicated MHM services or structured programs in place at the reception Centre. The provision of sanitary pads was minimal and inconsistent, and no emergency MHM toolkits were available. Many women resorted to using improvised materials like used clothes, tissue paper, or mattress pieces, leading to frequent menstrual leaks and embarrassment. Moreover, the reception Centre lacked formal guidelines on MHM, and interventions were often ad hoc, with no structured plan for menstrual waste disposal or hygiene education.

The challenges were further compounded by poor washroom facilities, inconsistent access to clean water, and the absence of proper menstrual waste disposal systems. Humanitarian workers acknowledged the need for improvements, suggesting increased provision of sanitary pads, and the establishment of waste disposal systems. Additionally, they emphasized the importance of sensitization programs for both women and men to create awareness and reduce stigma.

5. DISCUSSION

5.0 Introduction

The study explored the menstrual hygiene management among refugee women while staying at Kabazana Reception Centre in Nakivale Refugee Settlement, Isingiro district. This chapter discusses the findings per study objectives and relevant literature.

5.1 Accessibility to Sufficient Menstrual Hygiene Materials while at the Reception Centre

According to the World Health Organization, accessibility to proper menstrual hygiene facilities, including free access to hygiene products, along with timely education on menstrual health for both boys

and girls, is essential for promoting health, well-being, and equal learning opportunities for displaced and refugee populations (WHO, 2022). The current study found that only 32.4% of the respondents had access to sufficient menstrual hygiene materials while staying at the reception Centre. The findings of this study align with those of a systematic review on menstrual hygiene management (MHM) during humanitarian crises, which reported that the pooled proportion of individuals with adequate access to sanitary materials was 34% (95% CI: 0.24–0.45) (Patel et al., 2022).

However, accessibility to sufficient MHMs in this study is considerably lower than that reported by some previous studies. A systematic review and meta-analysis on menstrual hygiene practices and associated factors among adolescent girls reported a pooled prevalence of access to good menstrual hygiene at 55% (95% CI: 47–83) (Anbesu & Asgedom, 2023). Another study conducted in the Bidi Bidi refugee settlement revealed that 95% (104 out of 109) of menstruating individuals had access to improved and sufficient access to menstrual hygiene services (Beeman et al., 2023). The difference in access to sufficient menstrual hygiene materials between the current study and other previous studies could stem from variations in study context, population demographics, operational definitions of good menstrual hygiene, or methodological approaches.

The World Bank estimates show that about 500 million girls and women lack access to menstrual products and adequate facilities for menstrual hygiene management (World Bank, 2022). According to the WHO/UNICEF Joint Monitoring Programme for Water Supply, Sanitation, and Hygiene, women and adolescent girls should have access to sufficient hygienic menstrual management products (Phillips-Howard et al., 2016). Given the current geopolitical shifts and reductions in foreign aid, support for menstrual hygiene products for refugee girls and women is likely to decline further, exacerbating existing challenges (OCHA, 2025). To address this, sustainable solutions such as local production of affordable menstrual products, community-based education programs, and partnerships with NGOs and governments must be prioritized to ensure long-term access and improve menstrual health outcomes for vulnerable populations.

5.2 Socio-demographic Characteristics Associated with Accessibility to Sufficient Menstrual Hygiene Materials

The present study revealed that women aged 18-25 were 3.8 times more likely to have access to sufficient MH products compared to those aged 34-40. This could be explained by the fact that younger individuals may be more proactive in seeking out and utilizing available resources, such as MH products, due to greater engagement with peer networks, or participation in youth-focused programs that specifically target their demographic. In line with this, a study conducted in Odisha, India found that respondents aged 10–19 years were 5.31 times more likely to practice proper menstrual hygiene compared to those aged 40–49 years and those aged 20–29 group had 2.83 times higher odds of maintaining good menstrual hygiene than those in the older age group (Panda et al., 2024). Similarly, a study conducted in India found that older women were 1.72 times more likely to have poor MHM than younger women (OR=1.72; 95% CI: 1.08–2.72) (Prabhakar et al., 2025).

This study also found that women who had spent more than 1 year at the reception Centre were 4.8 times more likely to have access to sufficient MH products compared to those who had spent less than 6 months. This could be attributed to the increased familiarity with the distribution system, established social

networks, and better knowledge of where and how to access these resources over time. Longer stays may allow women to build relationships with aid providers, learn about distribution schedules, or gain access to community-based programs that supply MH products. Studies indicate that prolonged stays allow for better integration of menstrual hygiene management into water, sanitation, and hygiene (WASH) programs, ensuring the provision of essential products like sanitary pads, underwear, and reusable menstrual items (Gruer et al., 2021; Manolakos, 2021). Kolińska et al. (2023) asserted that in reception Centres, longer stays facilitate the establishment of gender-segregated and private WASH facilities, which are critical for managing menstruation safely and with dignity.

Furthermore, this study found that individuals who had divorced were 2.2 times more likely to have access to sufficient MH products compared to married individuals and those who were single were 1.12 times more likely to have access to sufficient MH products compared to married individuals. This is because divorced and single individuals may have greater independence in seeking out and utilizing available MH products as they might not be tied to the same familial or spousal responsibilities that married individuals face. Similarly, a study conducted in India found that access to menstrual products was associated with women's marital status, with married women reporting lower usage of sanitary pads compared to their unmarried counterparts (Anand et al., 2015). A 2022 Nepal demographic health survey found that the likelihood of exclusively using hygienic methods was 45% greater among never-married women (AOR = 1.45, CI 1.22–1.73) than among married women (Hasan et al., 2025).

5.3 Availability of Menstrual Hygiene Materials and Facilities among Refugee Women while Staying at KRC in Nakivale Refugee Settlement

This study revealed that individuals who received MH products regularly from NGOs were 3.5 times more likely to have access to sufficient MH products compared to those who never received them. This highlights the critical role of consistent and reliable external support in meeting menstrual health needs, particularly in resource-constrained settings like refugee reception Centres. Regular distribution by NGOs ensures a steady supply of MH products, reducing the uncertainty and stress associated with securing these essential items (Bardsley, 2020). A cross-sectional mixed-methods study conducted in the Nakivale refugee settlement found that 78% of menstruating girls had access to disposable pads provided by the UNHCR (Ivanova et al., 2019). Similarly, the present study found that the majority of refugee women at the reception Centre got MH products from NGOs/humanitarian agencies.

It was also found that women who had access to designated latrines were 2.0 times more likely to have sufficient MH products compared to those without designated latrines. This suggests a strong link between adequate sanitation infrastructure and the ability to manage menstrual health effectively. The current study also revealed that most respondents reported the absence of separate latrines for women and men. Qualitative findings further highlighted inadequate washroom facilities and a lack of clean and private bathing spaces. Worku et al. (2024) asserted that maintaining menstrual hygiene often requires women to find a private place to squat or wake up early to wait in line at public toilets and for those living in camps, long waits at shared facilities can lead to unattended children or delayed household responsibilities. Unhygienic public latrines pose significant health risks, particularly for menstruating women, as they increase the likelihood of reproductive tract infections so access to clean and safe sanitation is especially critical to ensure proper hygiene and health (Bardsley, 2020; Miiro et al., 2018; Worku et al., 2024).

Additionally, it was found that those with water near latrines were 2.2 times more likely to have access to sufficient MH products compared to those without. The current study also revealed that most respondents (68.3%) lacked access to water near latrines. Qualitative findings further highlighted an inconsistent water supply at the reception Centre. A related study by Pandit et al. (2022) revealed that half of the women lacked access to a consistent water supply hence poor menstrual hygiene management. Previous research has shown that women and girls are more severely impacted by the lack of access to water especially near water, sanitation, and hygiene facilities, as their needs become more critical during times of heightened vulnerability to infections, particularly during menstruation (Baker et al., 2018; Caruso et al., 2017).

5.4 Experience of Refugee Women while Staying at KRC in Nakivale Refugee Settlement.

In the current study, the majority of respondents strongly agreed that they primarily relied on materials like used clothes, tissue paper, newspapers, grass, and mattresses during menstruation. Menstrual leaks were also a common concern, with over half of respondents strongly agreeing and a significant portion agreeing that their clothes were often stained with blood. Furthermore, shame and embarrassment around menstruation were widespread, with more than three in five respondents strongly agreeing. Previous studies in various contexts reveal that women and girls frequently resort to unhygienic materials like used clothes, newspapers, or grass due to the lack of affordable and appropriate menstrual products (Anand et al., 2015; Kuhlmann et al., 2017). Similarly, in Ukraine, refugee women and girls face barriers to accessing sanitary products and clean facilities, leading to health risks and social discomfort (Kolińska et al., 2023).

Furthermore, about half of respondents strongly disagreed that they were given enough privacy at the reception Centre, while a smaller but notable number also disagreed. Many also strongly disagreed that they could comfortably leave to fetch water, collect food, or visit public places during their periods. Qualitative findings demonstrated that women at the RC hesitated to approach humanitarian workers for MHM-related issues due to discomfort, mistrust, and fear of stigma. This reluctance stemmed from the workers' insufficient engagement and failure to prioritize menstrual health. Many respondents felt that humanitarian staff did not advocate for best practices, leaving women to manage menstruation in secrecy and shame. Several studies have reported similar findings regarding the challenges faced by refugees in accessing privacy and mobility, particularly for women and girls. For instance, a study by Sommer (2019) on menstrual hygiene management in humanitarian settings found that many displaced women lacked adequate privacy and safe spaces to manage their menstrual health, leading to restrictions on their movement and participation in daily activities. Similarly, a UNHCR (2019a) report highlighted that overcrowding and inadequate infrastructure in refugee reception Centres often result in limited personal space, making it difficult for refugees to maintain their dignity and privacy.

5.5 Contribution of Humanitarian Workers towards Menstrual Hygiene Management among Refugee Women while staying at KRC in Nakivale Refugee Settlement.

This study revealed that the majority (52.5%) of respondents strongly disagreed that humanitarian workers provided treatment for infections related to poor MHM. Additionally, 52.5% strongly disagreed that men at the reception Centre were educated on how to support women during menstruation. Sensitization efforts were also lacking, as 45.3% strongly disagreed that humanitarian workers regularly provided MHM awareness messages. Qualitative findings further revealed a significant gap in menstrual hygiene management support at the Reception Centre (RC). Humanitarian workers provided minimal assistance, with no dedicated MHM programs or consistent distribution of sanitary products. Respondents also

expressed a lack of education extended to men, who were not engaged in supporting menstrual health, further isolating women.

Several studies have documented similar gaps in MHM support within humanitarian settings. For instance, a study by Hirani (2024) found that displaced women often lacked access to medical treatment for health issues arising from poor menstrual hygiene due to inadequate healthcare services and limited awareness among humanitarian workers. Studies have reported that men's involvement in MHM education is often overlooked in refugee settings, reinforcing stigma and leaving women without necessary support (Mahon et al., 2015; Schmitt et al., 2017). The UNHCR (2019a) report emphasized that MHM awareness campaigns for men and women are deprioritized.

5.6 Study Strengths and Weaknesses

Strengths: This study employed a mixed-methods approach, combining both quantitative and qualitative data collection methods, which enhances the depth and breadth of understanding menstrual hygiene management (MHM) among refugee women. The use of systematic random sampling for quantitative data minimizes selection bias, while purposive sampling for qualitative interviews ensures in-depth insights from key informants. Additionally, pretesting the research instruments in a different refugee settlement (Rwamwanja) enhances the reliability and validity of the tools. The study also ensures rigorous data quality control through supervisor-reviewed instruments, increasing the credibility of the findings.

Weaknesses: Despite its strengths, the study is limited by its cross-sectional design, which captures data at a single point in time and may not reflect seasonal or long-term changes in MHM among refugee women. The reliance on self-reported data introduces the possibility of recall bias and social desirability bias, where participants may provide responses they perceive as acceptable rather than truthful. Additionally, while the study focuses on Kabazana Reception Centre in Nakivale Refugee Settlement, findings may not be generalizable to all refugee settlements in Uganda due to variations in infrastructure, cultural practices, and humanitarian interventions. Lastly, language barriers may have influenced the accuracy of responses, despite efforts to translate interview questions into preferred languages.

6. CONCLUSION AND RECOMMENDATION

6.1 Conclusion

The findings from the Nakivale Refugee Settlement showed that only 32.4% of respondents had access to sufficient menstrual hygiene materials. This highlights significant gaps in menstrual hygiene management MHM among refugee women while at the Reception Centre in Nakivale Refugee Settlement. Socio-demographic factors such as age, marital status, and duration of stay at the reception Centre played a crucial role in determining access to MHM products. Additionally, structural factors, including the availability of designated latrines, clean water near sanitation facilities, and menstrual change rooms, significantly influenced the accessibility of menstrual hygiene products. These findings underscore the urgent need for targeted interventions to improve the availability and accessibility of MHM materials and facilities for refugee women.

Furthermore, the experiences of refugee women reveal persistent challenges, including reliance on unhygienic alternatives, fear of stigma, lack of privacy, and isolation during menstruation. The limited role of humanitarian workers in addressing these issues, coupled with inadequate monitoring and sensitization efforts, exacerbates the situation. Addressing these gaps requires a multifaceted approach that includes strengthening MHM education, increasing the regular supply of menstrual hygiene materials, engaging men in supportive roles, and ensuring the provision of safe, private, and well-equipped sanitation facilities.

6.2 Recommendations

Increase regular supply of menstrual hygiene products: Humanitarian organizations and stakeholders should ensure a consistent and adequate supply of menstrual hygiene materials, including sanitary pads, to refugee women at the reception Centre. Partnerships with NGOs and donors should be strengthened to maintain sustainable distribution.

Improve access to safe and private sanitation facilities: Designated latrines, menstrual change rooms, and clean water sources near sanitation facilities should be prioritized to enhance menstrual hygiene management and protect the dignity of refugee women.

Enhance community sensitization and male engagement: Awareness campaigns should be conducted to educate both men and women on menstrual health, reduce stigma, and encourage male involvement in supporting MHM. Training sessions should be organized for men at the reception Centre to foster inclusivity and understanding.

Establish a dedicated MHM team: Humanitarian agencies should create a specialized team responsible for monitoring and addressing menstrual hygiene management challenges. This team should ensure timely assessments, provide health education, and facilitate the distribution of MHM materials.

Integrate MHM support into healthcare services: Medical teams at the reception Centre should provide treatment for infections related to poor menstrual hygiene and offer guidance on proper menstrual health practices. Free healthcare services related to MHM should be made accessible.

Strengthen monitoring and evaluation of MHM programs: A robust monitoring system should be implemented to assess the effectiveness of MHM interventions. Regular assessments should be conducted to identify gaps and improve service delivery in menstrual hygiene management.

6.3 Recommendation for Further Research

Further research should investigate the long-term physical and mental health effects of inadequate menstrual hygiene management among refugee women to guide policy interventions. More research should be conducted to evaluate the impact of community-driven MHM programs, including training and peer-led initiatives, in improving menstrual health outcomes for displaced women and girls.

References

1. Almeida, F. (2018). Strategies to perform a mixed methods study. *European Journal of Education Studies*. https://oapub.org/edu/index.php/ejes/article/viewFile/1902/4540
2. Amin, M. E. (2005). *Social science research: Conception, methodology and analysis*. Makerere University. https://www.scirp.org/reference/referencespapers?referenceid=2568178

3. Anand, E., Singh, J., & Unisa, S. (2015). Menstrual hygiene practices and its association with reproductive tract infections and abnormal vaginal discharge among women in India. *Sexual & Reproductive Healthcare*, *6*(4), 249-254. https://www.sciencedirect.com/science/article/abs/pii/S1877575615000476
4. Anbesu, E. W., & Asgedom, D. K. (2023). Menstrual hygiene practice and associated factors among adolescent girls in sub-Saharan Africa: a systematic review and meta-analysis. *BMC Public Health*, *23*(1), 33. https://doi.org/10.1186/s12889-022-14942-8
5. Baker, K. K., Story, W. T., Walser-Kuntz, E., & Zimmerman, M. B. (2018). Impact of social capital, harassment of women and girls, and water and sanitation access on premature birth and low infant birth weight in India. *PLoS One*, *13*(10), e0205345. https://doi.org/10.1371/journal.pone.0205345
6. Bardsley, T. (2020). *Understanding the impacts of humanitarian Menstrual Health Management for women's confidence and agency: A case study on the Thai/Burma border* Open Access Te Herenga Waka-Victoria University of Wellington]. https://openaccess.wgtn.ac.nz/articles/thesis/Understanding_the_impacts_of_humanitarian_Menstrual_Health_Management_for_women_s_confidence_and_agency_A_case_study_on_the_Thai_Burma_border/17147999/2/files/31708955.pdf
7. Beeman, A., Kwesiga, J., Ippoliti, N., Bhandari, T., Pandya, G., Acam, F. A., Lee, S., Hope, R., Gibbs, T., & Levine, J. (2023). Using human-centered design to co-design dedicated menstrual health spaces with people who menstruate in Bidi Bidi refugee settlement, Uganda: Learnings for further adaptation and scale in humanitarian settings. *BMC Women's Health*, *23*(1), 319. https://doi.org/10.1186/s12905-023-02421-0
8. Camp, C. C. C., Spaces, C. C. F., Mutilation, F. F. G., Person, I. I. D., Council, N. N. R., Monitoring, P. P. D., & Age, W. W. O. R. (2017). The development of this toolkit is supported by The Research for Health in Humanitarian Crises (R2HC) program. https://issuelab.org/resources/28431/28431.pdf
9. Caruso, B. A., Clasen, T. F., Hadley, C., Yount, K. M., Haardörfer, R., Rout, M., Dasmohapatra, M., & Cooper, H. L. (2017). Understanding and defining sanitation insecurity: women's gendered experiences of urination, defecation and menstruation in rural Odisha, India. *BMJ Glob Health*, *2*(4), e000414. https://doi.org/10.1136/bmjgh-2017-000414
10. Das, S., Mitra, K., & Mandal, M. (2016). Sample size calculation: Basic principles. *Indian J Anaesth*, *60*(9), 652-656. https://doi.org/10.4103/0019-5049.190621
11. Grasser, L. R. (2022). Addressing Mental Health Concerns in Refugees and Displaced Populations: Is Enough Being Done? *Risk Manag Healthc Policy*, *15*, 909-922. https://doi.org/10.2147/rmhp.S270233
12. Gruer, C., Hopper, K., Smith, R. C., Kelly, E., Maroko, A., & Sommer, M. (2021). Seeking menstrual products: a qualitative exploration of the unmet menstrual needs of individuals experiencing homelessness in New York City. *Reproductive Health*, *18*(1), 77. https://doi.org/10.1186/s12978-021-01133-8
13. Guest, G., Bunce, A., & Johnson, L. (2006). How many interviews are enough? An experiment with data saturation and variability. *Field methods*, *18*(1), 59-82. https://warwick.ac.uk/fac/cross_fac/q-step/currentstudents/qs103/readings/t1w3/how_many_interviews_are_enough.pdf

14. Guetterman, T. C., & Fetters, M. D. (2018). Two methodological approaches to the integration of mixed methods and case study designs: A systematic review. *American Behavioral Scientist*, *62*(7), 900-918. https://journals.sagepub.com/doi/abs/10.1177/0002764218772641
15. H. Parker, A., A. Smith, J., Verdemato, T., Cooke, J., Webster, J., & C. Carter, R. (2014). Menstrual management: a neglected aspect of hygiene interventions. *Disaster Prevention and Management*, *23*(4), 437-454. https://dspace.lib.cranfield.ac.uk/bitstreams/32ae6283-ac2a-4882-b6a7-f5002fa1eb93/download
16. Hasan, N., Kumar, P., & Rajak, R. (2025). Drivers of hygienic menstrual practices among reproductive-age women: evidence from Nepal demographic health survey-2022. *Reprod Health*, *22*(1), 38. https://doi.org/10.1186/s12978-025-01976-5
17. Hirani, S. A. A. (2024). Barriers to Women's Menstrual Hygiene Practices during Recurrent Disasters and Displacement: A Qualitative Study. *International Journal of Environmental Research and Public Health*, *21*(2), 153. https://www.mdpi.com/1660-4601/21/2/153
18. Ivanova, O., Rai, M., Mlahagwa, W., Tumuhairwe, J., Bakuli, A., Nyakato, V. N., & Kemigisha, E. (2019). A cross-sectional mixed-methods study of sexual and reproductive health knowledge, experiences and access to services among refugee adolescent girls in the Nakivale refugee settlement, Uganda. *Reproductive Health*, *16*(1), 35. https://doi.org/10.1186/s12978-019-0698-5
19. Kariuki, T. M., Kagendo, D., & Kaimuri, M. (2023). Influence of socio-economic factors on utilization of sanitation facilities by women In Mukuru Kwa Reuben informal settlement In Nairobi County. *African Journal of Science, Technology and Social Sciences*, *2*(2), 108-121. https://journals.must.ac.ke/index.php/AJSTSS/article/download/175/163
20. Kaur, R., Kaur, K., & Kaur, R. (2018). Menstrual Hygiene, Management, and Waste Disposal: Practices and Challenges Faced by Girls/Women of Developing Countries. *J Environ Public Health*, *2018*, 1730964. https://doi.org/10.1155/2018/1730964
21. Kemigisha, E., Rai, M., Mlahagwa, W., Nyakato, V. N., & Ivanova, O. (2020). A Qualitative Study Exploring Menstruation Experiences and Practices among Adolescent Girls Living in the Nakivale Refugee Settlement, Uganda. *International Journal of Environmental Research and Public Health*, *17*(18), 6613. https://www.mdpi.com/1660-4601/17/18/6613
22. Kolińska, K., Paprocka-Lipińska, A., & Koliński, M. (2023). The Ukrainian refugee crisis: its ethical aspects and the challenges for the Polish healthcare system–a descriptive review. https://open.icm.edu.pl/bitstreams/2bc3c71a-1a29-470e-977a-09038c3cbdce/download
23. Krishnan, S., & Twigg, J. (2016). Menstrual hygiene: a'silent'need during disaster recovery. *Waterlines*, 265-276. https://researchonline.lshtm.ac.uk/id/eprint/4575252/1/krishnan_twigg_waterlines.pdf
24. Kuhlmann, A. S., Henry, K., & Wall, L. L. (2017). Menstrual Hygiene Management in Resource-Poor Countries. *Obstet Gynecol Surv*, *72*(6), 356-376. https://doi.org/10.1097/ogx.0000000000000443
25. Loescher, G. (2014). UNHCR and forced migration. *The Oxford handbook of refugee & forced migration studies*, 215-226.
26. Loughnan, L., Mahon, T., Goddard, S., Bain, R., & Sommer, M. (2020). Monitoring menstrual health in the sustainable development goals. *The Palgrave handbook of critical menstruation studies*, 577-592.

https://library.oapen.org/bitstream/handle/20.500.12657/41299/2020_Book_ThePalgraveHandbookOfCriticalM.pdf#page=597

27. Mahon, T., Tripathy, A., & Singh, N. (2015). Putting the men into menstruation: the role of men and boys in community menstrual hygiene management. *Waterlines*, 7-14. https://practicalactionpublishing.com/article/2736/putting-the-men-into-menstruation-the-role-of-men-and-boys-in-community-menstrual-hygiene-management
28. Manolakos, D. A. (2021). Enhancing menstrual hygiene management (MHM) in refugee camps in Greece. http://efaidnbmnnnibpcajpcglclefindmkaj/https://stud.epsilon.slu.se/17183/1/manolakos_d_a_210827.pdf
29. Miiro, G., Rutakumwa, R., Nakiyingi-Miiro, J., Nakuya, K., Musoke, S., Namakula, J., Francis, S., Torondel, B., Gibson, L. J., Ross, D. A., & Weiss, H. A. (2018). Menstrual health and school absenteeism among adolescent girls in Uganda (MENISCUS): a feasibility study. *BMC Women's Health*, *18*(1), 4. https://doi.org/10.1186/s12905-017-0502-z
30. Mudey, A. B., Kesharwani, N., Mudey, G. A., & Goyal, R. C. (2010). A cross-sectional study on awareness regarding safe and hygienic practices amongst school going adolescent girls in rural area of Wardha District, India. *Global journal of health science*, *2*(2), 225. https://pdfs.semanticscholar.org/343c/7ebd747d76dcbd8ee8c8913c467858a3902d.pdf
31. OCHA. (2025). *Amid Aid Cuts, a Renewed U.S. Policy Increases Health Risks for Women and Girls in Conflict Areas*. https://reliefweb.int/report/world/amid-aid-cuts-renewed-us-policy-increases-health-risks-women-and-girls-conflict-areas
32. OPM. (2025). *Refugee Management*. https://opm.go.ug/refugees/
33. Panda, N., Desaraju, S., Panigrahy, R. P., Ghosh, U., Saxena, S., Singh, P., & Panda, B. (2024). Menstrual health and hygiene amongst adolescent girls and women of reproductive age: a study of practices and predictors, Odisha, India. *BMC Women's Health*, *24*(1), 144. https://doi.org/10.1186/s12905-024-02894-7
34. Pandit, K., Hasan, M. J., Islam, T., & Rakib, T. M. (2022). Constraints and current practices of menstrual hygiene among Rohingya adolescent girls. *Heliyon*, *8*(5). https://doi.org/10.1016/j.heliyon.2022.e09465
35. Patel, K., Panda, N., Sahoo, K. C., Saxena, S., Chouhan, N. S., Singh, P., Ghosh, U., & Panda, B. (2022). A systematic review of menstrual hygiene management (MHM) during humanitarian crises and/or emergencies in low- and middle-income countries [Systematic Review]. *Frontiers in Public Health*, *10*. https://doi.org/10.3389/fpubh.2022.1018092
36. Phillips-Howard, P. A., Caruso, B., Torondel, B., Zulaika, G., Sahin, M., & Sommer, M. (2016). Menstrual hygiene management among adolescent schoolgirls in low- and middle-income countries: research priorities. *Glob Health Action*, *9*, 33032. https://doi.org/10.3402/gha.v9.33032
37. Plesons, M., Patkar, A., Babb, J., Balapitiya, A., Carson, F., Caruso, B. A., Franco, M., Hansen, M. M., Haver, J., Jahangir, A., Kabiru, C. W., Kisangala, E., Phillips-Howard, P., Sharma, A., Sommer, M., & Chandra-Mouli, V. (2021). The state of adolescent menstrual health in low- and middle-income countries and suggestions for future action and research. *Reproductive Health*, *18*(1), 31. https://doi.org/10.1186/s12978-021-01082-2

38. Prabhakar, J., Mg, A., Nazar, A. F., Ms, A., Pj, J. J., Ap, N., Mj, K. P., & Gk, M. (2025). Exploring menstrual hygiene management practices among displaced coastal women in Kerala, India. *The Journal of Climate Change and Health*, *21*, 100375. https://doi.org/https://doi.org/10.1016/j.joclim.2024.100375
39. RKMH. (2016). Kenya Environmental Sanitation and Hygiene Policy 2016–2030. In: Ministry of Health of Kenya Nairobi, Kenya.
40. Schmitt, M. L., Clatworthy, D., Ratnayake, R., Klaesener-Metzner, N., Roesch, E., Wheeler, E., & Sommer, M. (2017). Understanding the menstrual hygiene management challenges facing displaced girls and women: findings from qualitative assessments in Myanmar and Lebanon. *Confl Health*, *11*, 19. https://doi.org/10.1186/s13031-017-0121-1
41. Sommer, M. (2019). Menstrual hygiene management in humanitarian emergencies: gaps and recommendations. *Waterlines*, 83-104. https://sswm.info/sites/default/files/reference_attachments/SOMMER%202012%20Menstrual%20hygiene%20management%20in%20humanitarian%20emergencies.pdf
42. Sommer, M., Caruso, B. A., Sahin, M., Calderon, T., Cavill, S., Mahon, T., & Phillips-Howard, P. A. (2016). A Time for Global Action: Addressing Girls' Menstrual Hygiene Management Needs in Schools. *PLoS Med*, *13*(2), e1001962. https://doi.org/10.1371/journal.pmed.1001962
43. Sommer, M., Schmitt, M. L., Ogello, T., Mathenge, P., Mark, M., Clatworthy, D., Khandakji, S., & Ratnayake, R. (2018). Pilot testing and evaluation of a toolkit for menstrual hygiene management in emergencies in three refugee camps in Northwest Tanzania. *Journal of International Humanitarian Action*, *3*, 1-14. https://link.springer.com/content/pdf/10.1186/s41018-018-0034-7.pdf
44. Sommer, M., Utami, D., & Gruer, C. (2022). Menstrual hygiene management considerations during Ebola response: a qualitative exploration. *Journal of International Humanitarian Action*, *7*(1), 19. https://link.springer.com/content/pdf/10.1186/s41018-022-00128-9.pdf
45. Sphere. (2018). *The Sphere Hand Book*. https://efaidnbmnnnibpcajpcglclefindmkaj/https://emergency.unhcr.org/sites/default/files/2024-01/Sphere-Handbook-2018-EN.pdf
46. Ssemata, A. S., Ndekezi, D., Kansiime, C., Bakanoma, R., Tanton, C., Nelson, K. A., Hytti, L., Neema, S., Torondel, B., Seeley, J., & Weiss, H. A. (2023). Understanding the social and physical menstrual health environment of secondary schools in Uganda: A qualitative methods study. *PLOS Glob Public Health*, *3*(11), e0002665. https://doi.org/10.1371/journal.pgph.0002665
47. Statistica. (2024). *Number of refugees living in Sub-Saharan Africa from 2010 to 2023*. https://www.statista.com/statistics/1321571/refugee-population-in-sub-saharan-africa/
48. Tearne, J. E., Guragain, B., Ghimire, L., Leaning, J., & Newnham, E. A. (2021). The health and security of women and girls following disaster: A qualitative investigation in post-earthquake Nepal. *International Journal of Disaster Risk Reduction*, *66*, 102622. https://www.sciencedirect.com/science/article/abs/pii/S2212420921005835
49. Thomas, E., Andrés, L. A., Borja-Vega, C., & Sturzenegger, G. (2018). *Innovations in WASH impact measures: water and sanitation measurement technologies and practices to inform the Sustainable Development Goals*. World Bank Publications. https://openknowledge.worldbank.org/entities/publication/d8942f0a-b86d-5e25-96ea-e63eaa3362fd

50. UN. (2020). *Nakivale Settlement Profile*. https://unhabitat.org/sites/default/files/2020/08/200720_nakivale_settlement_profile_web.pdf
51. UNDP. (2024). *What are the Sustainable Development Goals?* https://www.undp.org/sustainable-development-goals
52. UNHCR. (2019a). Global Report. https://reporting.unhcr.org/sites/default/files/gr2019/pdf/GR2019_English_Full_lowres.pdf
53. UNHCR. (2019b). *Nakivale Settlement HLP Factsheet* https://data.unhcr.org/en/documents/details/71918
54. UNHCR. (2020). *UNHCR WASH manual. Practical Guidance for Refugee Settings*. https://emergency.unhcr.org/sites/default/files/UNHCR%20WASH%20Manual%20-%207th%20Edition%20%28UNHCR%2C%202020%29%20%281%29_1.pdf
55. UNICEF. (2020). *Menstruating girls in Adjumani can now finish school as UNICEF community barazas yield fruit*. https://www.unicef.org/uganda/stories/menstruating-girls-adjumani-can-now-finish-school-unicef-community-barazas-yield-fruit
56. Wambui, J. (2018). Implementing reproductive health and abortion provisions in the Kenya constitution (2010). *IOSR Journal of Humanities and Social Science (IOSR–JHSS)*, *23*(6), 62-71. https://www.academia.edu/download/56779151/I2306016271.pdf
57. WBG. (2016). Government of India and World Bank Sign US$1.5 Billion Agreement to Support India's Universal Sanitation Initiative. https://www.worldbank.org/en/news/press-release/2016/03/30/government-of-india-and-world-bank-sign-usd1point5-billion-agreement-to-support-india-universal-sanitation-initiative
58. WBG. (2019). *Water Supply, Sanitation, and Hygiene (WASH) Poverty Diagnostic Initiative*. https://www.worldbank.org/en/topic/water/publication/wash-poverty-diagnostic
59. WHO. (2022). Education and provisions for adequate menstrual hygiene management at school can prevent adverse health consequences. https://www.who.int/europe/news-room/27-05-2022-education-and-provisions-for-adequate-menstrual-hygiene-management-at-school-can-prevent-adverse-health-consequences
60. Worku, Y., Kassa, G. M., Mekonen, B., Desta, M., Bishaw, K. A., Gedfaw, M., Tesfaw, E., Degu, G., & Shiferaw, A. (2024). Menstrual hygiene management practice and associated factors among high school and preparatory school adolescent students in Debre Markos town, Northwest, Ethiopia: a mixed-method study. *BMC Womens Health*, *24*(1), 420. https://doi.org/10.1186/s12905-024-03265-y
61. World Bank, B. (2022). *Menstrual Health and Hygiene.* https://www.worldbank.org/en/topic/water/brief/menstrual-health-and-hygiene

APPENDICES

APPENDIX 1: INTRODUCTION AND PARTICIPANT'S CONSENT FORM

Title of Study: Menstrual Hygiene Management among Refugee Women at Kabazana Reception Centre in Nakivale Refugee Settlement, Isingiro District, Uganda

Principal Investigator: Mbambu Gorret Institution: Bishop Stuart University
Contact: +256 779 482 805

Dear Participant,

My name is Mbambu Gorret, and I am a Master of Public Health student at Bishop Stuart University. As part of my degree requirements, I am conducting a study to understand menstrual hygiene management among refugee women at the Kabazana Reception Centre in Nakivale Refugee Settlement. I kindly invite you to participate in this study by completing a questionnaire. Your participation is entirely voluntary, and you may choose to withdraw at any time without any consequences.

Confidentiality & Benefits

Your responses will remain strictly confidential and will only be used for academic purposes. The findings may help organizations improve menstrual hygiene support for refugee women. No identifying information (such as your name) will be included in any report.

Voluntary Participation

There are no right or wrong answers—please be truthful and honest in your responses. Your participation is greatly valued and appreciated. If you have any questions or concerns, feel free to contact me at the number provided.

Consent Statement: I have read and understood the information above. I voluntarily agree to participate in this study.

Participant's Name: _____ **Interviewer's Name:** _____
Participant's Signature: _____ **Interviewer's Signature:**_____
Date: _____ **Date:** _____

APPENDIX II: QUESTIONNAIRE FOR REFUGEE WOMEN 18-40 YEARS

SECTION A: Socio-Demographic Information

(Please tick [✓] where appropriate)

1. Age ……. years

2. Marital Status:

A. [ ] Married
B. [ ] Divorced
C. [ ] Single
D. [ ] Other (Specify) _____

3. Country of Origin:

A. [ ] Democratic Republic of Congo (DRC)
B. [ ] Rwanda
C. [ ] Burundi
D. [ ] Somalia
E. [ ] Ethiopia
F. [ ] Other (Specify) _____

4. Highest Level of Education:

A. [ ] None
B. [ ] Certificate
C. [ ] Diploma
D. [ ] Degree
E. [ ] Other (Specify) _____

5. Year of Arrival in Nakivale Refugee Settlement: ……..

6. Zone of Residence:

A. [ ] Basecamp
B. [ ] Rubondo
C. [ ] Kabazana A
D. [ ] Other (Specify) _____

7. Time Spent at the Reception Centre:

A. [ ] Less than 6 months
B. [ ] Up to 1 year
C. [ ] More than 1 year

SECTION B: ACCESSIBILITY TO SUFFICIENT MHMs

8. Did you have access to sufficient menstrual hygiene materials while staying at the reception Centre?

A. [ ] Yes
B. [ ] No

SECTION C: AVAILABILITY OF MH MATERIALS AND FACILITIES WHILE STAYING AT RECEPTION CENTRE

1. What type of menstrual hygiene products did you use while staying at the reception Centre? (Tick all that apply)

A. [ ] Disposable sanitary pads
B. [ ] Reusable cloths
C. [ ] Tissue paper
D. [ ] Reusable pads
E. [ ] Others (Please specify): _____

2. What was your main source of menstrual hygiene materials? (Tick all that apply)

A. [ ] Bought
B. [ ] Distributed by NGOs/humanitarian agencies
C. [ ] Borrowed from others

D. [ ] Others (Please specify): _____

3. How often did you receive menstrual hygiene products from NGOs/humanitarian agencies?

A. [ ] Regularly
B. [ ] Occasionally
C. [ ] Rarely
D. [ ] Never

4. Were there designated latrines for women at the reception Centre?

A. [ ] Yes
B. [ ] No

5. Was water available near the latrines?

A. [ ] Yes
B. [ ] No

6. How did you dispose of used menstrual hygiene products? (Tick all that apply)

A. [ ] In designated bins
B. [ ] In latrines
C. [ ] In open areas
D. [ ] Burn them

7. Were there menstrual change rooms available at the reception Centre?

A. [ ] Yes
B. [ ] No

8. Were there separate bathrooms for women and men?

A. [ ] Yes
B. [ ] No

9. Were you provided with soap for cleaning during menstruation?

A. [ ] Yes
B. [ ] No

10. Were you provided with nickers (underwear) for girls and women?

A. [ ] Yes
B. [ ] No

11. Were you provided with basins/buckets for bathing and/or washing?

A. [ ] Yes
B. [ ] No

SECTION D: THE EXPERIENCE OF WOMEN DURING MENSTRUAL PERIODS WHILE AT THE RECEPTION CENTRE.

Instructions: Tick appropriately in the box with; 1-Strongly Agree (SA); 2-Agree (A); 3-Not sure (NS); 4-Disagree (DA); 5-Strongly Disagree (SDA).

Statement	SA	A	NS	DA	SDA
I used materials like cloths, tissue paper, newspapers, grass, and mattresses during menstruation.	☐	☐	☐	☐	☐
My clothes were often stained with menstrual blood every time I was on my period.	☐	☐	☐	☐	☐
Shame and embarrassment around menstruation were often experienced by displaced women and girls.	☐	☐	☐	☐	☐
I felt comfortable going outside to fetch water, get food, or be in public places while on my period.	☐	☐	☐	☐	☐
I isolated myself each time I was on my period.	☐	☐	☐	☐	☐
I washed my undergarments at night in fear of being seen.	☐	☐	☐	☐	☐
My undergarments were regularly stolen.	☐	☐	☐	☐	☐
Women and girls were given enough privacy at the reception Centre during their menstrual periods.	☐	☐	☐	☐	☐

SECTION D: THE CONTRIBUTION OF HUMANITARIAN WORKERS ON MHM.

Instructions: Tick appropriately in the box with; 1-Strongly Agree (SA); 2-Agree (A); 3-Not sure (NS); 4-Disagree (DA); 5-Strongly Disagree (SDA).

Statement	SA	A	NS	DA	SDA
Humanitarian workers have provided the necessary support towards MHM while at the RC.	☐	☐	☐	☐	☐
Humanitarian workers tend to give more food relief compared to menstrual hygiene management relief at the RC.	☐	☐	☐	☐	☐
There is timely monitoring and evaluation of the items and services offered in regards to MHM for women and girls at the RC.	☐	☐	☐	☐	☐
Humanitarian workers have provided us with treatment for infections related to diseases caused by poor MHM at the RC.	☐	☐	☐	☐	☐
Humanitarian workers have done a good job regarding menstrual hygiene management at the RC.	☐	☐	☐	☐	☐
Humanitarian workers provide sensitization messages about MHM from time to time at the Reception Centre.	☐	☐	☐	☐	☐
The workers at the Reception Centre are sometimes unaware of the lack of menstrual hygiene management items for women and girls.	☐	☐	☐	☐	☐
The men at the Reception Centre are also educated on how to support women during their menstrual periods.	☐	☐	☐	☐	☐
Partners sometimes visit the RC and supply MHM items once in a while.	☐	☐	☐	☐	☐
Humanitarian workers always sensitize girls about any forthcoming menstrual period instances as they grow.	☐	☐	☐	☐	☐
The RC has a dedicated individual or team that orients women and girls on menstrual hygiene.	☐	☐	☐	☐	☐

“THANK YOU FOR YOUR COOPERATION”

APPENDIX III: INDEPTH INTERVIEW GUIDE FOR REFUGEE WOMEN

1. What were humanitarian workers or staff doing at the Reception Centre regarding MHM?
   ……
   ……
   ……
2. Were there any orientation or sensitization services offered by humanitarian workers regarding MHM at the RC?
   ……
   ……
   ……

3. Would you feel free to openly reach out to any humanitarian worker at the RC regarding any MHM issue?
   ……
   ……
   ……

4. Were there any IEC materials or items concerning MHM distributed among the girls?
   ……
   ……
   ……
5. Do you feel the humanitarian workers did their best to support and promote best MHM practices at the RC?
   ……
   ……
   ……
6. Is there anything else you would like to share?
   ……
   ……
   ……

APENDIX IV: THE KEY INFORMANT'S INTERVIEW GUIDE FOR STAFF

1. Which services/projects does your organization offer to refugees at the Reception Centre (RC) under MHM?
   ……
   ……
   ……
2. How do women manage their menstrual periods while at the Reception Centre?
   ……
   ……
   ……
3. Are there guidelines for menstrual hygiene management at the Reception Centre? If yes, please mention them. If no, what are your interventions on MHM?
   ……
   ……
   ……
4. Do you provide menstrual items at the Reception Centre? If yes, what do you specifically provide? If no, what do you do to cater for this need?
   ……
   ……
   ……
5. How often do you provide these menstrual items?
   ……
   ……
6. Are there clean, safe, and private washrooms for women and girls at the Reception Centre?
   ……
   ……
   ……
7. What measures do you think can be put in place to improve menstrual hygiene management at the Reception Centre?
   ……
   ……
   ……
8. Is there anything else you would like to share?
   ……
   ……
   ……

"THANK YOU FOR YOUR COOPERATION AND TIME"

APPENDIX VI: WORK PLAN

Sn	Activity	Time frame									Outcome
		2022	2023		2024			2025			
		Dec	Jan-Mar	Oct-Sep	Oct	Nov	Dec	Feb	Mar-May	Jun	
1	Proposal development, presentation and defense	■	■								Approval of the proposal
2	Clearing with REC		■	■							Clearance for conducting the study
3	Recruitment and training of research assistants				■	■					Collecting accurate and valid data
4	Testing the study tools (questionnaires, interview guides)					■					Testing the accuracy of the study tools
5	Data collection						■				Improved statuesque
6	Data entry, analysis and interpretation							■			Mitigate bias
7	Thesis writing and presenting findings							■	■		Stake holder information
8	Thesis submission and publishing								■	■	Policy improvement

APPENDIX VII: BUDGET

s/n	Item	Description	Qty	Frq	Unit cost (UGX)	Amount (UGX)
1	Personal	Allowance for Research assistants	2	5	10,000	100,000
		Accommodation	1	5	30,000	150,000
2	Transport	Movements in different villages of Rubondo and Base camp zones	3	5	20,000	300,000
3	Services and stationery	ODK data collection installation	1	1	300,000	300,000
		Data analysis	1	1	300,000	300,000
		Stationary Reams of paper	2	1	20,000	40,000
		Secretariat	1	1	300,000	300,000
		Printing questionnaires and dissertation	500	1	200	100,000
		Spiral binding books	2	1	5000	10,000
		Hard binding books	4	1	20,000	80,000
		Pens and pencils	1	1	15,000	15,000
		Sharpeners	2	1	2000	4000
		Rubbers/ cleanser	2	1	1000	2000
4	Communication	Internet data for 5 months	20 GBs	1	Lampsum	200,000
		Airtime for 5 months	200mins	1	Lampsum	200,000
5	Dissemination	Publishing	1	1	700,000	700,000
		REC	1	1	200,000	200,000
6	Others	Emergency	1	1	200,000	200,000
	Grand total					**3,201,000**