UNIVERSITY OF
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EQUITY

Capstone Practicum Report

ASSESSING THE USAGE AND FACTORS AFFECTING USAGE OF SANITARY ROOMS (MENSTRUAL HYGIENE MANAGEMENT SERVICES) AMONG ADOLESCENT SCHOOL GIRLS IN FOUR DISTRICTS (RUTSIRO, KARONGI, NYAMAGABE, AND NYARUGURU) IN RWANDA.

By

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Declaration

We, Carolyn Aling and Bilquees Idrees, hereby declare that the practicum capstone thesis has been written by us without any external unauthorized help, that it has been neither presented to any institution for evaluation nor previously published in its entirety or in parts. Any parts, words or ideas, of the thesis, however limited, which are quoted from or based on other sources, have been acknowledged as such without exception.

Signature: _____ Date: _____

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Dedication

I dedicate this research to my beloved sons Enzi and Kai who are my true motivation for all I do in life.
Carolyn

I dedicate this research to my lovely daughters Waniya and Musfira, whose presence gives me the courage to pursue my Master's degree and who have loved me unconditionally.
Bilquees

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Acronyms

ALNAP:	Active Learning Network for Accountability and Performance
CI:	Confidence Interval
COVID-19:	Corona Virus Disease of 2019
DV:	Dependent Variable
HGSF:	Home Grown School Feeding
IRB:	Independent Review Board
ID:	Identification
IV:	Independent Variable
LMIC:	Low- Middle Income Countries
MINEDUC:	Ministry of Education
MBBS:	Bachelor of Medicine, Bachelor of Surgery
MGHD:	Masters of Science in Global Health Delivery
MHM:	Menstrual Hygiene Management
MOH:	Ministry of Health
NGOs:	Non-Governmental Organizations
NISR:	National Institute of Statistics of Rwanda
ODK:	Open Data Kit
OR:	Odds Ratio
PIs:	Principal Investigators
QoL:	Quality of life
RDHS	Rwanda Demographic and Health Survey
RPHC	Rwanda Population and Housing Census
SDGs:	Sustainable Development Goals
SHE:	Sustainable Health Enterprise
SNV:	Stichting Nederlandse Vrijwilligers ("Foundation of Netherlands Volunteers")
UDHR:	Universal Declaration of Human Rights
UGHE:	University of Global Health Equity
UN:	United Nations
UNICEF:	United Nations International Children's Emergency Fund
WASH:	Water Sanitation and Hygiene
WFP:	World Food Programme
WHO:	World Health Organization
WV:	World Vision

Definitions and operational terms

- **Menstruation/menses:** The natural body process of periodic blood and tissue discharged from the uterus. It occurs in approximately 3–4-weeks/ Normal vaginal bleeding that occurs cyclically, every 21-35 days. (RCOG)

- **Menarche:** The age at which a girl has her first menstrual period. (RCOG)

- **Menstrual hygiene management (MHM):** refers to the management of hygiene associated with the menstrual process. Women and adolescent girls using clean menstrual management material to absorb or collect menstrual blood, that can be changed in privacy as often as necessary for the duration of a menstrual period, using soap and water for washing the body as required, and having access to safe and convenient facilities to dispose of used menstrual management materials. (UNICEF)

- **Menstrual hygiene materials:** Products used to catch the menstrual flow, such as pads, cloths, tampons, or cups.

- **Period poverty:** defined as a lack of access to sanitary products due to financial constraints

- **Sanitary rooms:** These are rooms constructed as part of WASH intervention by WFP/WV to offer MHM services to school-going girls.

Abstract

Background

Rwanda is a low-middle income country and a majority of the population cannot afford the monthly expenditure of over 1 dollar to buy sanitary pads for good menstrual hygiene management (MHM). Schools in rural areas are often unable to provide safe and clean environments for MHM. This has translated to poor menstrual hygiene among other consequences such as missing school, poor concentration during lessons, and increased risk of infections. The Universal Declaration of Human Rights on gender equality highlighted the ability to manage menstruation with dignity as a human and woman's right. This led to the global community incorporating the provision of MHM services as part of WASH interventions since 2012. This study was conducted to identify the usage of availed MHM services in schools and factors that contribute to the uptake of the same.

Methods

The study used a cross-sectional quantitative design. A multi-cluster sampling technique was used to select study participants from government primary school girls in four rural districts of Rwanda. A total of 476 responses fulfilling selection criteria were analyzed. Data were analyzed using SPSS and logistic regression was used to analyze the association of utilization of sanitary rooms and independent variables. Variables of significance were reported with a 95% CI and P-value of < 0.05.

Results

The level of usage of sanitary rooms was high at 92% (n=437) and was determined if the participants used one or more services offered in the sanitary rooms. The service mostly used was privacy for changing sanitary material (n= 415, 87.2%) followed by receiving sanitary pads from school(n=312, 65.7%). The mean age of respondents was 14.6 (SD=1.378) years and those from the Rutsiro district were less likely to use the sanitary rooms compared to those from Nyaruguru (OR=0.273; 95%CI: 0.10-0.78, P=0.015). Moreover, we found that schoolgirls were more likely to use the sanitary rooms if mothers were a source of menstrual information (OR 3.6, 95%CI: 1.66-7.92, p=0.001) and if teachers were a source of menstrual information (OR 2.8, 95%CI: 1.22-6.78, p= 0.016). Furthermore, experiencing menses for the last 2-3 years lead to a higher likelihood of using the sanitary room compared to those that reported <1 year of menses (OR 3.36, 95%CI: 1.23-9.20, p= 0.016).

Conclusion

This study emphasized the importance of incorporating MHM interventions when designing WASH programs in schools as the high usage highlights the need for these services among adolescent girls. Furthermore, open discussions with teachers and parents about menses should be encouraged as the study shows the source of MHM information has an impact on the usage of sanitary rooms.

Moreover, there should be the continued provision of sanitary pads to the girls to optimize hygienic practices as it will ensure the frequency of changing pads and reduce the usage of pieces of cloth that can lead to increased risk of infections for girls.

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CHAPTER ONE: INTRODUCTION

1.1 Background

Adolescent girls from low-middle income countries (LMICs) experience many physical and sociocultural challenges associated with managing menstruation (Hennegan et al., 2019; P. Montgomery et al., 2012). This has had an impact on their physical and psychosocial well-being such as increased infections, fear, and embarrassment, missed school days, and poor concentration at school (Ndanyuzwe Aime, 2020; van Iersel et al., 2016; Steiner et al.,2011). Some have also experienced social and religious barriers that have an impact on obtaining proper knowledge of how to manage menses (Mason et al., 2015; McMahon et al., 2011).

In keeping with the Universal Declaration of Human Rights (UDHR) on gender equality, the ability to manage menstruation with dignity is a human and woman's right and the Sustainable Development Goals (SDGs) also aim to ensure that all girls complete equitable education. This is the background with which Menstrual Hygiene management (MHM) became a component of WASH to ensure girls' comfort and reduce gender disparities in health, education, and social participation.

Following this the Joint Monitoring Programme for Drinking Water, Sanitation, and Hygiene defined MHM in 2012 as: "Women and adolescent girls are using a clean menstrual management material to absorb or collect menstrual blood, that can be changed in privacy as often as necessary for the duration of a menstrual period, using soap and water for washing the body as required, and having access to facilities to dispose of used menstrual management materials."(UNICEF, 2019).

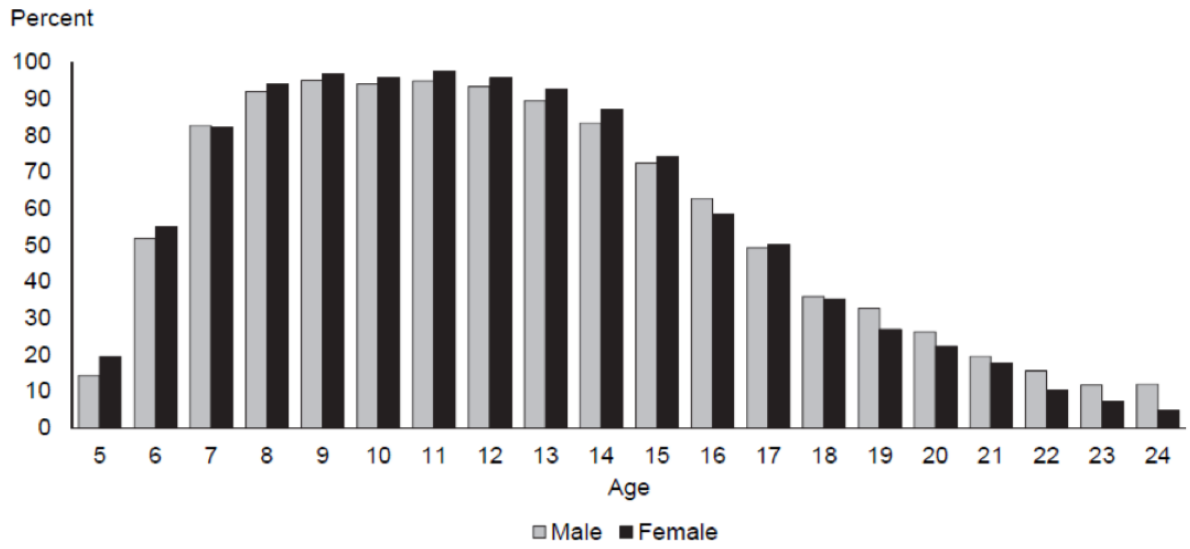
Thereafter, MHM in Ten is an agenda developed by academics, donors, NGOs, UN agencies, and the private sector, committed to determining negative experiences for girls and developing solutions to address menstrual challenges (Sommer et al., 2021). The "MHM in Ten" initiative was organized by Columbia University and the United Nations Children's Fund (UNICEF) in New York City in October 2014 to systematically map out a ten-year agenda for overcoming MHM-related barriers facing schoolgirls.

In 2019, an assessment of the ten-year agenda program revealed that it had some successes in the form of the evidence base for MHM in schools. This translated to numerous MHM advocacy platforms emerging to support the intervention and some governments e.g. Kenya and the Philippines (MOH, Kenya, 2019) taking responsibility to increase awareness regarding MHM in schools. However, resources are lacking, in some cases quite severely, and "global guidelines for MHM in schools have yet to be created" (Sommer et al., 2021). As of 2015, Rwanda through the Ministry of Education provided little guidance for WASH facilities in schools, components of MHM were considered "good-to-have" however were entirely dependent on the availability of resources (Tessema, 2021).

Walker et al found that in Rwanda, comprehensive knowledge on menstrual health was dependent on educational attainment and wealth; it ranged from 52% in Kigali to between 31-33% in the remaining provinces(Walker et al, 2014). Additionally, 18% of women and girls miss out on work

or school because of the lack of physical and social accessibility and affordability of sanitary pads (Oster & Thornton, 2011) yet the latest Rwanda Demographic and Health Survey (RDHS) indicates the rate of school attendance reaches its highest level between 9 and 12 years, which is the commencement age of menarche when the need for MHM services first begins(Fig. 1). Chinyama et al also noted that one in ten school-aged girls in LMICs fail to attend school during menstruation or drop out of school at puberty due to the absence of menstrual hygiene management (MHM) facilities (Chinyama et al., 2019).

Figure 1: Age-specific school attendance rates by sex, RDHS 2014-15



Source: NISR et al. (2016)

Given that the 4 districts where the study was conducted report the highest school dropouts and the lowest socioeconomic status. Our study seeks to understand whether the MHM interventions put in place are being utilized and to fill the gap in evidence on the factors affecting uptake of availed MHM services. The study will offer evidence to inform the level of prioritization of MHM investment and policy across schools in Rwanda.

1.2 Problem Statement

The level and factors affecting usage of availed MHM services in schools by adolescent girls in rural Rwanda was not known

1.3 Magnitude:

The majority of the Rwandan population cannot afford the monthly expenditure of over US$1 for a pack of 10 sanitary pads therefore schoolgirls either do not go to school due to fear of staining their clothes or use alternative methods such as cloth, leaves, or other homemade items, many which can cause infections (Janoowala et. al., 2019). Additionally, about 24% of schools across Rwanda do not have water sources in the school premises or proper bathroom facilities, leaving menstruating girls difficulties in MHM (Morgan et al, 2017). There is a need to understand the usage and which services in particular are used among MHM facilities offered to girls.

1.4 Objectives of the study

1. To determine the level of usage of availed MHM services in schools by adolescent schoolgirls aged 10-19 years in four districts of rural Rwanda by July 2021.
2. To assess the factors influencing usage of availed MHM services in schools in four districts of rural Rwanda by July 2021.

1.5 Justification

A lack of MHM has significant adverse effects on schoolgirls and a long-run impact on the socio-economic welfare of girls and women. It is important to assess if the introduction of MHM services in schools in Rwanda has been embraced by adolescent girls, the level of uptake, and factors affecting usage of the services.

In 2016, the World Food Program (WFP) started the Home Grown School Feeding (HGSF) program in 108 schools in four of the most food-insecure districts in Rwanda. In line with the program's holistic approach, it included complementary interventions to further improve school attendance such as WASH programs.

WFP worked in partnership with World Vision (WV) who constructed new latrines in schools with an attached sanitary room that offers the MHM services to girls to improve school attendance. These sanitary rooms offer privacy to change sanitary products, a shower with soap and water, sanitary products, and disposal facilities.

Since the start of the program in 2016, there is a dearth of data on the level of usage of the various services of MHM offered and the factors contributing to usage. This study seeks to provide information that will be used by implementors of MHM programs, schools, local authorities, and the Government of Rwanda on factors that influence usage of MHM facilities and highlight any gaps that lead to none use. We hope the results of this study will advocate for MHM inclusion as a public health issue that will lead to Rwanda developing policy and budgetary allocation to provide facilities in all schools and sustain safe MHM practices in its journey of promoting gender equity.

1.6 Organization of the Report

This report is organized into six chapters.

Chapter 1: The introduction details background information on MHM issues affecting adolescent girls in Rwanda. It includes the problem statement, objectives, justification, and the significance of the study to stakeholders such as adolescent girls, schools, NGOs and relevant ministries, and the Government of Rwanda.

Chapter 2: The literature review covers the history of menstruation and the socio-cultural and socioeconomic effects on the management of menstruation among girls. It also explains the origin of MHM as a component of MHM and the existing evidence of its impact on the quality of life (QOL) of adolescent girls. It also highlights governments and organizations that have developed MHM policies.

Chapter 3: The methodology section includes: the setting of the project, this is the geographical location where the study was conducted. The study design, the sample size determination with inclusion and exclusion criteria. Definition of the variables and how they were measured. Data collection, management and analysis procedure, and ethical considerations being that the participant population was underage and how they were protected.

Chapter 4: The results from the analysis of 476 respondents It includes tables representing univariate, bivariate, and multivariate analysis of the data as well as additional figures and graphs derived from the data. It includes descriptions of all the above.

Chapter 5: Encompasses the discussion on the results from data analysis derived from this study in comparison with what is already in the existing literature. It includes challenges faced during the course of the study and limitations of the same.

Chapter 6: The conclusion and recommendation present a summary of this project and mention areas of future research informed by this study.

CHAPTER TWO: LITERATURE REVIEW

2.1 Overview of menstruation

Menstruation is a natural physiological process that occurs monthly in girls and women of reproductive age. It is characterized by the discharge of blood and mucosal tissue from the inner lining of the uterus, through the vagina. It occurs on average between 10-16 years of age, although it can come on as early as 9 years (Critchley et al., 2020; Peacock et al., 2012, Rees, 1995). Menstruation is cyclic in nature occurring in a range of 21-35 days, lasting 2-7 days each cycle (Mahon & Fernandes, 2010). Approximately, 26 percent of the world's population falls in this category and each of them will spend roughly 3,000 days of their lifetime menstruating (Scales, n.d.).

Menstruation signals normal reproductive hormonal functions and thus should be viewed as a meaningful occurrence. Its physiology starts in the brain, followed by the ovary and lastly the uterus, from hormones at each level subsequently affecting the next (Owen, 1975; Smith, 2018). Disruptions in this chain lead to abnormalities in the menstrual cycle, for example, in the first months following menarche, there is a higher incidence of irregularity in the timing of an individual's menstrual flow (Venturoli,1986; Nair et al., 2012).

This is of particular importance for girls who are of school-going age as they are oftentimes unable to predict when the bleeding will commence. They suffer from the distress of the unknown as well as the effects of untimely occurrences such as the staining of their clothes while in school (Maclean, 2020; Mahon & Fernandes, 2010). Hormonal imbalances may lead to heavy flow, i.e., menorrhagia, and painful menstruation, i.e., dysmenorrhea. All these can affect a girl's quality of life (QoL) in ways that go beyond the physical and affect her mental and social well-being (Agarwal & Agarwal, 2010; Suvitie et al., 2016).

Furthermore, the perception of menstruation is heavily impacted by religious, cultural, and social connotations. These should be considered and addressed accordingly to unearth issues surrounding menstruation.

2.2 Sociocultural history of menstruation

Globally, a positive view is a rare perspective when it comes to menstruation. For instance, some societies raise women who menstruate to the status of deities, such as the Native Americans. They consider menstruating women as sacred and powerful with the ability to bless or curse as they see fit (Potter, 2006). However, in many parts of the world, menstruation is unfortunately regarded as dirty, impure, and taboo (UNICEF, 2018).

The physiology of menstruation was officially understood and recorded in 1863 (Bullough et al, 1973). In the nineteenth century, the psychological effects of menstruation (that are now known as premenstrual syndrome, presenting with mood swings) were the reason it was thought to be a negative occurrence. This led to restrictions and essentially stigma against women during their menstruation. In France, for example, women were not allowed to socialize during this time as they were thought to be polluting whatever they handled e.g., mushroom harvests would be ruined (Montgomery, 1974).

Different socio-cultural backgrounds dictate the knowledge, attitudes, and practices surrounding menstruation. Some societies are extremely restrictive, for example, in some Indian communities, women are completely shunned during their menstruation (Sivakami et al., 2018). There is also a myth within the Indian society that associates menstruation with guilt and punishment of being a murderer. Indian traditions also believe women will contaminate food and as such are not allowed in the kitchen during menstruation. Additionally, the traditional nuances that menstrual blood can be used by evil spirits or to control men, means women are shunned during this period (Garg & Anand, 2015).

Furthermore, other low-middle income countries (LMIC) report similar traditional attitudes towards menstruation, from the Asian to the African continent. In Sub-Saharan Africa, there are various beliefs surrounding menstruation as well, and many of these stem from an inability to understand its purpose. In the southern countries of Africa, the beliefs range from an increase in menstrual flow if one goes out in public, to isolating girls during menstruation as they are thought to be polluting. They are discouraged from involvement in community activities such as harvesting and social gatherings (Kumar & Srivastava, 2011; Scorgie et al., 2015).

In Eastern Africa, the same narrative abounds. As such, studies reported that girls in Kenya associated feelings of shame, confusion, and embarrassment with menstruation. They linked these feelings to concerns of stigmatization, especially by male peers, and at times due to the connection of menstrual onset and the dawn of a girls' sexual awakening (Mason et al., 2015; McMahon et al., 2011). In Uganda, girls reported that menstruation is a taboo subject even within their own families, and a culture of silence, especially around male relatives is encouraged (Kirk & Sommer, n.d.). This leads to the reinforcement of feelings of shame and embarrassment regarding their period but also a potential stain or pain caused by menstruation. Finally, in Ethiopia, studies conducted reported girls frequently describing menstruation as dirty, embarrassing, and shameful. In rural settings, the slang word "adef" – meaning unclean or dirty, is often used when talking about menstruation (Smiles et al., 2017).

In societies where cultural and religious beliefs are in tandem, a religious belief in the "unholiness" of menstruation strengthens the social construct that menstruation is negative and impure. These then contribute directly or indirectly to the challenges girls and women face while on their periods. This may lead to self-imposed restrictions by some women, from dietary intake to social interactions, which are then carried forward to the next generation. This further disempowers girls and women making the journey towards equity harder because girls often miss school while women sometimes miss work for fear of staining their clothes or due to pain, during their periods. (Mukherjee et al., 2020)

2.3 Challenges that occur with menstruation

One challenge that girls and women encounter during menstruation stems from culture and religion, as detailed above. Adolescence is a period characterized by insecurities. Girls' bodies are changing and the stigma of menstruation in many cultures has left girls with a lack of confidence. This is accentuated by an aspect of shame that blankets some societies, regardless of religion, caste, or class (Hennegan et al., 2019).

Culturally, menarche signals to a family that a girl is mature enough to bear children and is therefore ready for marriage or the familial responsibilities of a young woman. A sudden change in family relations, as well as an increase in responsibilities within the family, means that there could be adverse effects on school attendance and concentration in class. This may lead to withdrawal from school (P. Montgomery et al., 2012).

There is also a lack of accurate information about menstruation, which leads to the spread of misinformation. Many societies, religious beliefs, and cultural taboos prevent open discussion around it. This often causes girls to experience menarche and manage their menstruation in ways that are not sanitary, for fear of approaching adults with questions about this "prohibited" topic. Several studies demonstrate the positive impact of improved information on menstrual hygiene to better individual management of menstruation (Joshi & Amadi, 2013; P. Montgomery et al., 2016). This supports interventions that address the knowledge gap as well as offering sanitary solutions.

Furthermore, the socio-economic background of many girls and women also influences their ability to procure sanitary products and other items they may use as absorbents during their menstruation. Period poverty, defined as a lack of access to sanitary products due to financial constraints, has been linked to school absenteeism and is rising as a public health crisis. Girls and women in LMICs suffer the brunt of period poverty as women must prioritize their families' meager resources, and menstrual products are not a top priority (Rapp, 2020). This problem is exacerbated by the fact that most countries categorize menstrual hygiene products as luxury products and add sales tax to their prices. As a result, not only is a crucial health product not subsidized for the masses, also the prices go beyond what most families can bear (Waldman and Crawford, 2018).

Consequently, girls and women in rural settings tend to use reusable non-commercial sanitary products (Kumar & Srivastava, 2011). Reusable absorbents require soap and clean water, a lack of which may lead to unhygienic practices. Currently, Non-government organizations (NGOs) are increasingly using the traditional practices of menstrual hygiene management that are safe to aid with the sustainability of acceptance and longevity of interventions. They provide the necessary sanitary products and methods to girls and women at a very low cost using locally available resources. Some of these are biodegradable such as "pads made from bamboo fiber, banana fiber, water hyacinth, and sea sponges" (Kaur, Kaur, and Kaur, 2018). Pads made from banana leaves and banana fiber have been used successfully and girls and women from low-income families have switched to using them (Niekerk, 2018; Jannesari, 2017).

Reusable absorbents require soap and clean water. The limited availability of clean, accessible water and sanitation (WASH) facilities in homes, in many Sub-Saharan African countries, is a major contributor to violence against women and girls, especially in rural areas. Case studies suggest that poor access to WASH services can lead to vulnerability, rape, and assaults, and that fear of such assaults can prevent women and children from using sanitary facilities outside of the home at night (Mills & Cumming, n.d.; UNICEF, 2016). Poor WASH leads to many adverse health outcomes such as urinary tract infections (Janoowala et al., 2019). Menstruation requires water for cleanliness and sanitary facilities for the physical and psychological comfort of menstruating girls. Some studies have also observed that girls opt to miss school and socially distance themselves for fear of staining their clothes or having an odor (Hastuti et al., 2019, Miriti 2017).

All these challenges have been shown to disproportionately affect the education of girls, especially in LMICs. As a result of negative attitudes towards menstruation, lack of availability of correct information about periods, and lack of available and affordable sanitary products. This is a strong argument for introducing awareness about proper Menstrual Hygiene Management (MHM) services at the point of maximum impact i.e., at menarche (Dolan et al., 2014).

2.4 The concept of Menstrual Hygiene Management

The Universal Declaration of Human Rights (UDHR) on gender equality highlights the ability to manage menstruation hygienically and with dignity as a human and woman's right. The goal of Sustainable Development Goals (SDGs) regarding gender equality is to ensure that all girls have equitable, and have quality primary and secondary education. This is why some NGOs started implementing MHM services in 2012 (United Nations, 2014, UN Women, n.d.).

Menstrual Hygiene Management (MHM) is defined as the availability of clean menstrual management products to collect/absorb menstrual blood. This also includes the availability of facilities that offer privacy for changing menstrual products as needed for the duration of a menstrual period, the availability of soap and water for washing the body if required, and access to disposal facilities of used menstrual products. Additionally, it may include basic information on menstruation and how to manage them (UNICEF, 2019).

Recently, in 2010, NGOs offering WASH facilities received feedback from communities on the challenges they faced when managing menstruation. Based on this, awareness of the challenges that affect girls concerning access to MHM services was brought to the forefront and made into a global public health issue (Sommer et al., 2015). UNICEF and Columbia University organized an "MHM in Ten" meeting to map out an agenda. The strong interest in MHM in schools was demonstrated by the self-financing of those who attended the conference and the increasing number of initiatives highlighted at global, national, and local levels (UNICEF, 2015). This led to the global health world incorporating interventions to address MHM. They have been grouped into two categories: software interventions that address deficits in knowledge of menstruation and management by providing education and hardware interventions that address WASH access i.e., provision of soap and water, sanitary products, and disposal facilities for used sanitary products. Educating girls and women about feminine hygiene and biology helps to push back against false beliefs and the cultural constraints surrounding menstruation. Furthermore, access to correct information about hygiene and adequate sanitary products enables women to feel more confident and comfortable with their bodies. Montgomery found that education alone in the long run improved school attendance at the same rate as the provision of sanitary products (Montgomery, 2012).

With hardware interventions, girls are taught about hygiene guidelines with recommendations that sanitary products should be changed every 2-6 hours depending on how heavy the blood flow is. It is, therefore, necessary to have facilities that offer privacy for changing at home, in school, and in workplaces, as mishandling of MHM can lead to severe negative consequences (SNV, Tanzania, n.d.).

2.5 Consequences of mishandling MHM

As mentioned earlier, this usually occurs in LMICs with strong traditional holds in society. Poor MHM affects the reproductive health of girls - unsanitary practices can lead to overt pelvic infections and urinary tract infections although the route of infection is still unclear (Ahmed, 2009; Janoowalla et al., 2020). Furthermore, urinary tract infections have also been linked to improper perineal washing (Ahmed, 2009). In addition to this, is the discomfort caused by using non-absorbent cloth or banana leaves as sanitary products. A study had found that girls and women who were not using pads had increased rates of vulvovaginal symptoms, such as skin irritation (Janoowalla et al., 2020).

Beyond physical health is the impact on the psychosocial well-being of girls when they cannot meet proper MHM practices as some girls have reported staying at home for mental comfort. (Hennegan, 2016). Moreover, substandard management of MHM may also contribute to socio-economic disempowerment. Studies have shown that it may contribute to gender gaps at work and in income levels due to absenteeism. Female teachers, for example, may not only face higher financial loss due to absence from school but also risk negatively impacting the learning and education of their students (Herrmann & Rockoff, 2012; Schoep et al., 2019).

A steady momentum is picking up towards the provision of adequate MHM services. It is becoming an important part of addressing the gap of equality that existed between girls and boys. In LMICs, despite 50% of school girls reporting inadequate MHM with girls in rural areas reporting even higher rates, governments are recognizing the need for the provision of adequate services (Adinma & Adinma, 2008; P. Montgomery et al., 2016). However, there is still a long way to go to integrate MHM in global health programs and remove it from the "silent" culture.

2.6 Menstruation in school

Menstrual health management (MHM) has been a growing cause for concern among LMIC due to the impact it has on women's health as well as their productivity at work or in school. Education for girls has important contributions to the community, local and national economy. The World Bank estimates that for every additional year of schooling, a woman's income will rise between 10-20% and a "1% increase in the level of women's education generates 0.3% in additional economic growth" (Murphy et al, 2009).

Some studies conducted in various parts of Africa have found that menstruation during school can result in absenteeism, lack of concentration, reduced levels of self-confidence, and the fear of being teased or bullied (Kabore/Iboudo, Debus, and McIntosh, 2017). These reactions are not only a result of menstruation pain but also a lack of disposable sanitary products and safe, clean places in schools to dispose of and/or change sanitary products frequently. The above-mentioned study emphasized that the lack of proper facilities as well as awareness of the importance of good menstrual health management were some of the leading causes of school absenteeism among school-going girls, especially those ages 10 to 13 who have recently started their periods for the first time. Therefore, school girls faced many challenges to safe and dignified menstruation including limited health education about puberty and menstruation, lack of social support from families and teachers, insufficient WASH facilities, and sanitary material. These all barriers contribute to a major loss of academic work. Since teachers do not seem to be supportive in many

contexts. They show this either through a warning that study materials once missed will not be repeated or by not giving female students enough information or the space in which they can practice good MHM practices such as a working bathroom or sanitary products disposal facilities.

A World Bank study in some countries, including Nigeria, Ghana, Panama, Bangladesh, and India, found that over one-third of girls were missing school while menstruating due to the lack of availability of proper WASH facilities. Similarly, a study conducted in secondary schools in peri-urban Uganda found a strong correlation between menstruation and school absenteeism (Miiro et. al., 2018; World Bank, 2018). Therefore, one of the main objectives of many NGOs offering WASH programs is to provide safe and adequate bathrooms and changing facilities for menstruating girls and women.

Additionally, the study conducted by Kabore/Iboudo, Nikiema, Debus, and McIntosh (2017) reported that male teachers felt uncomfortable discussing MHM since it was "a topic just for women". This finding was corroborated by Miiro et. al.'s that some male teachers, upon noticing that girls are unable to focus or absent themselves from school due to menstruation, call them "stupid" and also call them out on "wearing a sweater around their waist to hide a possible stain" (Miiro et al., 2018). This lack of support from male teachers increases the fear among menstruating girls that they will be teased or bullied not only by elders but also by their male peers (Chikulo, 2015). As a result, staying at home during this time seems like a better option. And these gender-discriminatory realities may lead to negative psychosocial and reproductive outcomes and also may reduce future economic opportunities for girls.

2.7 Programs addressing MHM in schools

Lack of sanitary products has been cited as a barrier to girls' schooling (Oster & Thornton, 2011). Schools in resource-limited settings are often unable to provide safe and clean environments for MHM and adequate facilities are often unavailable at home as well. This led to the development of the 10-year agenda (MHM in Ten) by academics, donors, NGOs, UN agencies, and the private sector, committed to determining negative experiences for girls during this period and developing solutions (Sommer et al., 2021). The "MHM in Ten" initiative was organized by Columbia University and the United Nations Children's Fund (UNICEF) in New York City in October 2014 to systematically map out a ten-year agenda for overcoming the menstrual hygiene management (MHM)-related barriers facing schoolgirls.

Non-governmental organizations of various countries have written resources to guide the implementation of MHM services in schools in both urban and rural areas. WaterAid, for example, developed "Menstrual Hygiene Matters" whose main purpose is "to provide a comprehensive resource on menstrual hygiene that supports the development of context-specific information for improving practices for women and girls in LMICs" (House et al., n.d.). This resource uses a synthesis of good practices and a comprehensive approach in all matters of MHM and promotes the use of locally available materials so that a larger audience can be targeted. It advocates for all the elements of MHM services as an intervention. Additionally, in 2019, UNICEF's WASH division also developed a guidance document on menstrual health and hygiene. Its contents closely mirror those of WaterAid.

To address menstrual-related needs while in school, a ten-year agenda for changing girls' experiences surrounding menstruation was mapped out in 2014 by UNICEF. It is referred to as the MHM in Ten. (Sommer et al., 2021). In June of 2019, an assessment was undertaken to find out the progress of the program. It was revealed that it had some successes which formed an evidence base for MHM in schools. Numerous MHM advocacy platforms have emerged to support efforts; and that governments are taking responsibility to increase awareness regarding MHM in schools". However, resources are lacking, in some cases quite severely, and "global guidelines for MHM in schools have yet to be created" (Sommer et al., 2021). Addressing MHM at the school level helps confront myths and negative beliefs that may have been passed on from home, as one of the pillars of MHM is offering knowledge on menstruation.

Furthermore, in East Africa, the government of Kenya developed an official policy document on MHM management. The vision of the policy is for women and girls to participate fully in daily life activities with pride and dignity without stigma and discrimination, and to be able to access education, health, and employment opportunities (MOH, Kenya, 2019). The document has 10 guiding principles, which, if coupled with the results from this study, can offer an advocacy tool and advice for the Rwandan government to develop the same. This policy document highlights the need for MHM in learning institutions and is therefore important to be able to understand menstruation in the context of schools.

2.8 MHM in Rwanda

Rwanda is a low to middle-income country. 18% of women and girls in Rwanda miss out on work or school because of the lack of physical and social accessibility and affordability of sanitary pads. The majority of the population cannot afford to buy menstrual pads, these absences are a potential GDP loss of $215 per woman every year – a total of $115 million in Rwanda (SHE,2021). And myths, taboos, and beliefs are also attached to menstruation and menstrual Hygiene management, thus having limited knowledge and skills of proper Menstrual Hygiene Management.

The study found the pads prices are unaffordable over US$1 for a pack of 10 sanitary pads, that's why only one-third of the women used pads and many girls use alternatives such as leaves, cloths which cause them embarrassment, fear of stain, pain, UTI infection, and discomfort (Janoowala et. al., 2019). In those instances where they cannot buy sanitary products, Rwandan schoolgirls either do not go to school due to fear of staining their clothes or use alternative methods (Janoowala et. al., 2019). "Menstruation-related taboos are deeply rooted in Rwandan culture that can often restrict girls' social and economic mobility and access to menstrual health and hygiene information. Girls often using common traditional materials such as animal skins and dung or mud and leaves. These are free and available, but they are unhealthy, ineffective, and uncomfortable" (SHE, 2021).

A Sustainable Health Enterprise (SHE), disseminates biodegradable pads mostly in the rural areas of the country. These are locally sourced and made of banana leaf fiber and are considerably cheaper than the commercially available pads (at least 30% more affordable than comparable imported brands) (Janoowala et. al., 2019). Though the number of girls using these pads has increased, the problem of safe MHM is still not answered (Morgan et al., 2017). About 24% of schools across Rwanda do not have water sources within the school premises, do not have proper

bathroom facilities, leaving menstruating girls and women difficulties in MHM (Morgan et al, 2017).

The study also found a low ratio of latrines-to-girls compared to boys, resulting in gender disparity. If the latrines used by female students are the same as those used by male students it causes an even bigger problem for school girls. Additionally, shared latrines among teachers might also lead to female teacher absenteeism from school during their period resulting in bigger academic losses (Morgan, 2017).

As of 2015, Rwanda through the Ministry of Education provided little guidance for WASH facilities in schools, components of MHM were considered "good-to-have" however were entirely dependent on the availability of resources (Tessema, 2021).

Keeping the above issues in mind, many NGOs, academics, donors, United Nations Agencies have argued, successfully, during the MHM in 10 meetings that menstrual hygiene management is made into a public health issue (Sommer, 2015). This would mean that a government budget would be allocated to mobilize and implement resources to alleviate the problems caused by a lack of facilities for proper MHM. The organizations involved in implementing such programs should also look into creating awareness of the issue and the problems it causes for young girls and women with members of the opposite sex. Since this will not only create empathy but also allow for an open discussion to take place. Having MHM made into a public health issue means advocacy can lead to Rwanda developing policy to provide facilities in schools for safe MHM practices.

2.9 Research Gap and the Importance of the Study

There is a gap in the literature assessing the utilization of MHM services provided in schools and factors influencing their uptake. It is important to assess if the introduction of MHM services in schools in Rwanda has an impact.

This study will contribute to the body of knowledge of MHM interventions and can be used to inform policy at the national level to influence MHM provision in schools and contribute to achieving gender equity in Rwanda. We hope that recommendations from this study will be beneficial to all stakeholders involved from the schoolgirls to the echelons of government.

CHAPTER THREE: METHODS

3.1 Setting

Figure 2: WFPs' HGSF districts: Rutsiro, Karongi, Nyamagabe, and Nyaruguru

This study was conducted in HGSF-supported schools in four districts (Rutsiro, Karongi in the Western province and Nyamagabe, and Nyaruguru in the Southern provinces (Figure 2). According to the 2012 housing census, the population in Rutsiro was 324,654, 331,808 in Karongi, 341,491 in Nyamagabe, and 294,334 Nyaruguru respectively (NISR, 2012). These districts are predominantly rural. The main economic activity is farming. The total population of girls attending school in these four districts is approximately 41,174 as per records obtained from WFP (unpublished data). Around 3,528 girls were in P6 (794 in Rutsiro, 958 in Karongi, 728 in Nyamagabe, and 1048 Nyaruguru respectively (NISR, 2012)

3.2 Design

A cross-sectional quantitative study was conducted to determine the level of usage of availed MHM services and to assess the factors influencing usage of availed MHM services in schools in four districts of rural Rwanda by July 2021.

3.3 Sampling and sample size

Sample size calculation

Our study targeted girls aged 10-19 attending schools where WFPs' HGSF program was implemented. This age range was selected to capture the majority of the girls who are menstruating in Rwanda as the average age of menarche was found to be 12.8 years (Ndanyuzwe & Pugalenthi, 2021).

To obtain the prevalence of MHM usage in schools, we determined our sample considering the multiple-stage cluster sampling that was used to recruit participants. Firstly, the districts served as strata, therefore we had 4 strata. We then selected grade P6 from schools that served as clusters based on the average number of girls per school recorded by WFP.

To the best of our knowledge, there was no study conducted in Rwanda assessing MHM usage in schools. However, according to previous similar studies in other settings, the prevalence rate of MHM usage ranged from 37.6% in Ethiopia (Zegeye et al., 2009) to 46% in Kenya (Amaya et al, 2020). Based on these assumptions we used the 46% prevalence rate because Kenya is in a similar setting i.e., East Africa. We assume is it has similar sociodemographic characteristics. Additionally, it gave us a larger sample size compared to other recorded prevalence rates from the region.

Table 1 outlines the sample size formula calculation considering cluster design (ALNAP, 2012). We used a design effect of 1.5. Using this formula, we got a sample of 573. Table 2 summarizes the use of finite population correction factor calculation (Zach, 2020) as our N (Total target population) was 3,528 adolescent girls in P6 grade in the 4 districts. The values are outlined in the table. The corrected sample size using the finite population formulae brought the number to 493. Moreover, we assumed that 10% of the girls sampled might not have attended the school when having menses in the last month prior to the survey to need MHM services and others could decline to participate in the study, and that increased the sample size to 547 girls.

Sample size formulae for cluster sampling

$$\mathbf{n} = \left[t^2 \times \frac{p \times q}{d^2}\right] \times DEFF$$

Table 1: Sample calculation- cluster sampling calculation

Parameter	Value
t = linked to 95% confidence interval for cluster sampling (2.045)	1.96
p = expected prevalence	0.46

q = 1- p (expected non-prevalence)	0.54
d = relative desired precision	0.05
DEFF = Design Effect	1.5
n = sample size (representing n_0 in the finite population sample)	573

Sample size determination adjusting to the finite population

$$n = \frac{n_0 N}{n_0 + (N-1)}$$

Table 2: Sample calculation- finite population correction factor calculation

Parameter	**Value**
n_0 (Represented by the value n in the 1st table)	573
N= The finite population of girls in P6 grade in the 4 districts	3,528
(N-1)	3,527
Sample size before 10% addition	493
n = Final sample size considering 10% additional (493/1-0.10)	**547**

The following table 3 summarizes the number of clusters that were initially needed per district. We calculated the percentage representation of girls per district from the total number in the population of interest. This was followed by multiplication of the percentage representation per district against the sample size of 547. We then divided this by the average number of girls in P6 in the different districts to determine a final cluster number of 13.

Table 3: Sample calculation- Number of clusters needed

District	Number of schools	Total P 6 girls	% Of the district	Average girls in P6 per district	Sample per district (N=547)	Schools to select
Nyamagabe	15	728	0.21	49	113	3
Nyaruguru	19	1048	0.30	55	163	3
Karongi	24	958	0.27	40	149	4
Rutsiro	16	794	0.23	50	124	3
Total	74	3528			549	**13**
Note: numbers were rounded up						

Sampling

We used multistage cluster sampling to recruit participants in the study. The following criteria were used to recruit participants:

Inclusion criteria

- School-going girls aged 10-19.
- Girls who have experienced menstruation as per the definition.
- Girls who voluntarily accepted to participate in the study and gave consent if they were above 18 years.
- Girls with consent from parents to participate in the study if they were below 18 years and who also accepted to participate in the study.

Exclusion criteria

- Girls who were transfer-ins to the school within the month of data collection because they did not have an opportunity to use the MHM services available at school.

Schools were selected using simple random sampling in Ms Excel. We listed the schools per district and then using the RAND function in Ms Excel, we generated a random number per school. Then, we used that number to rank the schools and the first ranked were selected for the survey according to the needed schools per district. All girls who fulfilled the criteria in the selected schools were surveyed. Initially, we selected 13 clusters as it was estimated in the sample size calculation based on the available data from WFP. However, during the data collection, it was noted that the estimated numbers per school were not achieved, and this necessitated the addition of schools. The additional schools were selected randomly using a similar selection procedure as mentioned above to achieve the required sample size. A summary of the school surveyed per district is below. In total, 572 girls were surveyed (Table 4).

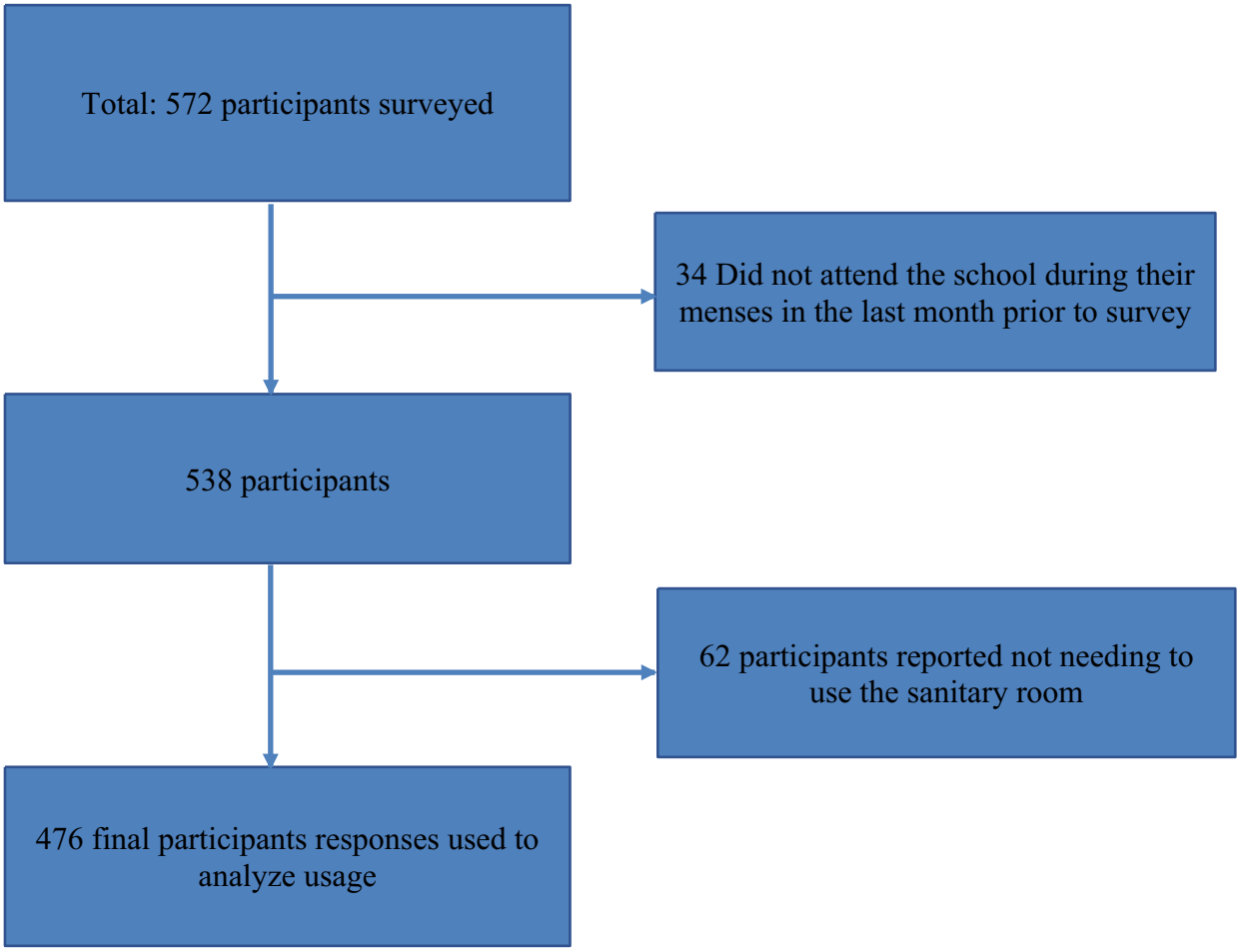
Table 4: Strata, clusters, and number of respondents

Districts	Clusters (selected schools)	Number of girls surveyed
Karongi	Biguhu B EP	94
	Rugobagoba EP	
	Shoba Muramba GS	
	Nyamugwagwa EP	
	Kiramo	
	Nyamugwagwa EP	
Rutsiro	Nyamyumba GS	155
	Mwufe EP	
	Rwinyoni	
	Kivumu	

Nyamagabe	Muganza PS	216
	Nkore PS	
	Bwama	
Nyaruguru	Ruhinga PS	107
	Kiyonza GS	
	Fugi GS	
Total	**16**	**572**

As our study aimed to assess the usage of MHM services, we defined usage as any girl who needed and used any of the MHM services available at school when she needed it. To get our denominator for analysis (those who needed MHM services), additional criteria were considered. Needing MHM services was defined as any girl who experienced menses in the last month prior to the survey, attended the school when having menses, and reported needing to use the sanitary room. We choose the last month to minimize recall bias. Of the 572 girls surveyed in total, 96 were excluded for analysis (34 girls did not attend the school during their menses in the last month prior to the survey and 62 girls reported not needing to use the sanitary room), and a total of 476 participants were included in the analysis. The figure below summarizes the process used to get the participants included in the analysis (Figure 3).

Figure 3: Flowchart used to determine participants for analysis



3.4 Data collection tool

The data were collected through a questionnaire administered to the schoolgirls. The questionnaire was developed based on previous publications about MHM usage and influencing factors. Moreover, considering that menses is a culturally sensitive topic, during the planning of this study, WFP had conducted their bi-annual survey that included data regarding sociocultural norms around menstruation of the population of interest. This was a qualitative study using FGDs and the information collected also aided in the development of our questionnaire to reflect the cultural norms of the study area.

The questionnaire had predominantly closed-ended questions with one open-ended question. It consisted of three sections, firstly, socio-demographic information questions i.e. the age of respondents, parental education levels and occupation, religion, language spoken, age of menarche, and living situation of respondents. Secondly, there were 5 questions on MHM practices of respondents and 14 knowledge questions included some of which were guided by a study done

in Ethiopia. (Upashe et al., 2015). These questions were true/false questions regarding menstruation that addressed awareness of the age of menarche, awareness of the physiology of menstruation, and awareness of hygiene management of menstruation. A total sum score of 11 and above was considered as having good knowledge regarding menstruation. Lastly, questions on the sanitary room (MHM services) in school, i.e. availability of privacy to be able to change sanitary products, provision of sanitary products, availability of water and soap for washing, and disposable facilities for used sanitary products. This section also addressed personal utilization of the MHM services by the girls and which services they used as well as queries on factors that advance or deter usage. There was a final open-ended question on recommendations from the respondents to better the services offered in the sanitary rooms.

The questionnaire was first prepared in English and translated into Kinyarwanda and back-translated to English to check its valid translation. The translation was done in consultation with native Kinyarwanda speakers (1MGHD student and 1 UGHE faculty member). The questionnaire was pretested to 6 UGHE MBBS students to check its understandability and ability to address study objectives and based on their feedback minor modifications were done to improve the tool. Furthermore, the final questionnaire was designed digitally with the ODK app for easy administration.

3.5 Data collection procedures

After obtaining IRB clearance from the University of Global Health Equity (UGHE), WFP sent a letter to district authorities to inform them about survey dates, objectives, and logistics. Moreover, school headteachers were informed of the study by district coordinators a week prior to our visit to obtain further approval to collect data. The data was collected under the supervision of the principal investigators between 7th June and 22nd June 2021 in the sixteen HGSF supported schools in four rural districts of Rwanda.

The principal investigators visited schools prior to the survey to inform the students about the study and answer any pending questions they had prior to the assent forms being distributed. Then, parents/guardians of eligible participants under the age of 18 years were contacted through the schools' headteachers and information sheets about the study and consent forms were distributed to their students to take home and obtain consent from their parents/guardians. The duration for a response from parents/guardians was capped at 3 days from the date of receiving the forms. To participate in the study, written assent was required from student girls aged 10–17 years, and written consent was required from those aged 18 years or older. Twenty parents refused to sign consent forms and according to study protocols, these 20 girls did not participate in the study. No girl aged 18 and above refused to participate in the study.

Before the actual data collection, a brief explanation of the purpose and significance of the study was given to confirm their acceptance to participate in the study, and anonymity and confidentiality were assured. Additionally, the girls were assured that their participation was entirely voluntary and that they were free to withdraw from the interview/discussion at any stage without any adverse consequences to themselves. Due to the culturally sensitive nature of menstruation and its management, adolescent boys and male teachers were not allowed in classrooms where data collection took place, and the surveys were conducted in specially designated classes in the school compound to provide optimum privacy.

All data was collected using tablets with the ODK app and was interviewer-administered. All questions were asked in Kinyarwanda as most of the participants were fluent in the language. Each interview took an average of 10 to 15 minutes, and no compensation was provided to the participants. During data collection, daily meetings with data collectors were conducted to debrief them on the field activities, discussing potential challenges or those faced, rectify data errors, and discuss the next day's field plan.

3.6 Data collectors

Data were collected by six female data collectors under the supervision of the two principal investigators (PIs). These data collectors were hired from a pool of WFP trained enumerators previously involved in HGSF surveys. They were fluent in Kinyarwanda and English.

The PIs trained the data collectors for 2 days, explaining the study objectives, ethical considerations, and how to use the data collection tools. Additionally, due to the current COVID-19 pandemic, the training included safety protocols. The data collectors were trained to adhere consistently and strictly to wearing a face mask, frequently sanitize hands and equipment, and maintain physical social distancing.

3.7 Measures

3.7.1 Dependent variables:

Variable	Explanations	Type
Utilization of MHM services (Sanitary rooms)	Any girl who used the school MHM services. Usage was defined as using one or more of the MHM services from the sanitary room. These were: Privacy to change sanitary products, washing in the room, using the available sanitary pads, disposal of used sanitary products.	Categorical – binary

3.7.2 Independent variables (IVs):

The following independent variables were measured.

- Age of respondent girls.
- The language the respondents were fluent in (this included Kinyarwanda and English).
- Religion (this included Christian, Muslim, and other religions).
- Parental level of education (this was categorized as none, primary and post-primary).
- Parental occupation (this was categorized as unemployed, farmers, and salaried employment).
- Respondents' living situation (this was classified as living with both parents, mother only, father only, or living with neither parent).
- Age of menarche among the respondent girls.
- Sources of MHM information (receiving any information about menstruation and its management from father, mother, teacher, friends, siblings, media, neighbors, and others).
- Materials used to manage menses (these were classified as disposable pads, pieces of cloth, reusable pads, and others).

- Frequency of changing sanitary material within 24 hours (this was classified as < four times or =/> four times).
- Sources of sanitary pads among users (the choices being home only, the school only, both home and school, and other sources).
- Reasons for missing school during menses in the last three months among those who reported missing school (the options were pain, fear of staining, lack of sanitary pads, and other reasons).
- Girl's knowledge on menstruation (there were 14 questions with a score of "yes" if correct answers and "no" if incorrect answer). Participants' overall knowledge score was categorized using Bloom's cut-off point, a score of 80% and above was considered as "good knowledge" and below 80% was considered as "low knowledge" (Bloom, 1968).

3.8 Data management

Survey responses that were collected with the ODK app were extracted in Microsoft Excel format and assessed for completeness. The data was cleaned and responses in Kinyarwanda were translated to English and exported to the SPSS version 28.0 where coding and analysis were conducted. All data was fielded in folders in password-protected UGHE laptops. All hard copies of assent and consent forms were collected and stored in a locked cabinet accessed only by the PIs. All data will be secured for ten years in accordance with IRB regulation, only the PIs and faculty supervisor had access to them.

3.9 Data analysis procedure

Descriptive statistics were used to summarize the independent variables of sociodemographic factors. We used percentages to describe our study sample and utilization of MHM services per each independent variable. When appropriate, we also reported the mean and the standard deviation for continuous variables (age of the participant, age of menarche) and median and interquartile range for days missed for schools due to menses. The data were presented in tables and graphs when appropriate.

Bivariate analysis was conducted to assess the association between usage of MHM services and each independent variable as outlined in table 5. The bivariate analysis was conducted using the fisher-exact test as some of the categories were below 5 data points required to use chi-square. The P-value of significance for bivariate analysis was <0.10.

For the multivariate analysis, we used Backward logistic regression to identify factors that influence the usage of MHM facilities while controlling for confounders. The variables that were included were those with a significant P-value of <0.1 from the bivariate analysis. The P-value of significance for multivariate analysis was <0.05. We reported Odds ratio (OR) with a 95% confidence interval (CI) and p-value.

Table 5: Variables used in bivariate analysis

Dependent variable	Independent variable	Test
Utilization of MHM services. (Defined as using one or more of of the MHM components) (Categorical, binary data)	● Districts ● Age ● Religion ● Mother's education level ● Father's education level ● Mother's occupation level ● Father's occupation level ● Living situation ● Years since menarche ● Missed school days during menses in the last 3 months ● Source of MHM information ● The main source of MHM information ● Girl's knowledge on Menstruation	Fisher's Exact

3.10 Ethical Considerations

Approvals

This study was reviewed and approved by the Institutional Review Board of the University of Global Health Equity (Ref: UGHE-IRB/2021/036). Additionally, further approvals were obtained from the district authorities and the schools in which the study was conducted.

3.10.1 Vulnerable Populations

We acknowledged that the study subjects were a vulnerable group as there were minors between the age of 10-18 years. Due to their age, the recruitment process was free from coercion and was explicitly voluntary with the option of declining participation at any point of the study. Due to the sensitive nature of the data being collected, the data collection happened in private with the reassurance of high confidentiality. Participants were informed to report any bullying to the teacher in charge of the sanitary room. She was supposed to inform the PIs who would then inform the UGHE IRB with immediate effect for review. There were no reported cases of bullying during the data collection. The questionnaire took less than 20 minutes to fill, as such the risk of psychosocial stress was thought to be minimal to none. Approval to collect data was sought from the principals of the schools chosen for the study and informed consent was collected from parents/guardians, and assent from the adolescent girls. No personal identifiers were collected from the participants.

3.10.2 Assessment of risks to participants

Due to the COVID-19 pandemic data collection was undertaken on the condition that established safety protocols were always followed to protect the staff and beneficiaries in schools.

The PIs and data collectors underwent rapid COVID-19 testing prior to data collection and they were required to wear a face mask during the entirety of the process. They were provided with hand sanitizers and were required to use them before approaching any participant and to maintain a minimum of one-meter physical social distance with the use of a mask.

Given the socio-cultural undercurrents related to the study topic, i.e., menstruation was not openly discussed, there was a risk that it may lead to embarrassment and bullying from others. It was necessary to ensure the comfort of the participants. WFP had already conducted a precedent qualitative study to assess socio-cultural temperature to assist in developing a culturally sensitive questionnaire. Their results also indicated that the girls were not shy to discuss MHM practices if the data collectors were female. The PIs ensured high confidentiality as data collection occurred in private.

The PIs ensured the data collectors were well trained in respecting participants' autonomy with the possibility of pulling out at any time with no fear of penalty. The participants were informed of their anonymity and none of the information they shared was reviewed by people outside the study group. The parents may also have felt coerced to consent to their daughters' participation thinking of possible repercussions. The consent form explicitly stated that no penalty or loss of benefit to the girls would occur if they did not participate and 20 parents did not consent for their daughters' participation.

3.10.3 Medical or psychosocial support

It was not thought that the participants would need psychosocial support, and no complaint arose during data collection. The data collectors received sensitivity training on the consent/ assent collection process. They were informed of how to answer any queries the participants had. We offered a communication channel through the teachers in charge of the sanitary room followed by the principal investigators if the participants wanted clarification or exclusion from the study at any point.

3.10.4 Information, consent, and assent process

We obtained IRB clearance from the University of Global Health Equity (UGHE) and WFP received clearance from the Ministry of Education. Moreover, the district authorities were informed about survey dates, objectives, and logistics through WFP's district coordinators.

The parents/guardians of participants taking part in the study received the consent forms that detailed the study, its purpose, and any risks and benefits associated with it. The form was available in Kinyarwanda, to ensure proper understanding, and a signature was appended for confirmation. The students were to read out the form to parents who were unable to read, and a thumbprint was to be obtained as an acceptance for the participation of their daughters in the study. Before conducting the survey, the data collectors collected verbal assent that was included in the ODK tool from the study participants.

The consent/assent forms introduced the PIs, the details of the study, any risks, and benefits of involvement and were communicated in Kinyarwanda, a language that was comprehensible for the target group. The data collectors reiterated the voluntary nature of the study as well as the option

to decline without any repercussions. The data collection commenced only once we had both assent and consent. All information collected had no identifiers, to maintain privacy.

Before data collection, there was a question-and-answer portion with ample time to ask questions. The participants were also allowed to approach any of the PIs privately if they had concerns that needed clarification.

3.10.5 Protection of privacy and confidentiality

Unique numeric IDs were assigned, and no identifiable information was collected during data collection.

3.10.6 Safekeeping of data

All hard copy documents were stored in a locked cabinet. All digital files were stored in password-protected computers. All data from the study will be kept for ten years after completion of the study, as per UGHE IRB regulation.

3.10.7 Conflict of interest statement

We acknowledge a potential conflict of interest as WFP, the implementing organization, is covering part of the budgetary requirements. However, we countered this by using ODK with the servers being hosted at UGHE. WFP had no access to data until it was analyzed and reported.

Additionally, WFP were the ones who initiated the evaluation as they were interested in the impact of their intervention.

CHAPTER FOUR: RESULTS

4.1 Description of Demographic Characteristics of Study Participants

A total of 476 (83.2%) were included in the analysis. Table 6 shows the demographic features of the study population. Most of the study participants were from the Nyamagabe district (n=176, 37%) while Karongi contributed the least number (n= 79, 16%). The mean age of respondents was 14.6 (SD=1.378) with most between the age category of 14-16 years (n=337, 71.1%)

A vast majority (349,73.3%) of the study participants lived with both parents. This section also deals with the education and economic characteristics of respondents' parents and around 312 (65.5%) of the respondents' mothers have primary education and 216 (54.8%) of fathers achieved the same. Moreover, parents of respondents also share a common occupation. They are mostly farmers with approximately 73.1% (348) of mothers reported as farmers and 273 (57.4%) of fathers. However, only 39 (8.2%) of mothers and 34 (7.1%) of fathers were reported as unemployed.

Table 6: Sociodemographic characteristics of participants: Adolescent school girls in rural Rwanda

Variable (N)	Characteristic	Number of respondents	Percent (%)
	Nyamagabe	176	37.0
	Rutsiro	120	25.2
	Nyaruguru	101	21.2
	Karongi	79	16.6
Age group [a] (474)	11-13	102	21.5
	14-16	337	71.1
	17-19	35	7.4
	Mean age (SD)	14.60 (1.378)	
Language fluency (476)	Kinyarwanda	474	99.6
	English	32	6.7
Religion (476)	Christian	453	95.2
	Muslim	5	1.1
	Other	17	3.6
Living situation (476)	Mother only	74	15.5
	Father only	9	1.9
	Both	349	73.3
	Living with neither parent	44	9.2
Mother's education level (476)	None	95	20.0
	Primary	312	65.5
	Post-primarythe	17	3.6
	Not living with mother	52	10.9
Father's education level (476)	None	62	13.0
	Primary	261	54.8

Variable (N)	Characteristic	Number of respondents	Percent (%)
	Post-primary	35	7.4
	Not living with father	118	24.8
Mother's main occupation (476)	Unemployed	39	8.2
	Farmer	348	73.1
	Other salaried employment	37	7.8
	Not living with mother	52	10.9
Father's main occupation (476)	Unemployed	34	7.1
	Farmer	273	57.4
	Other salaried employment	51	10.7
	Not living with father	118	24.8

[a] 2 participants did not have recorded age.

4.2 Experiences related to menstruation

The analysis of the participants' experiences related to menses showed that the mean age at menarche among the respondents' girls was 13.13. (SD,1.37). Most of the girls (286, 60.3%) reported < 1 year of experiencing menses at the time of the survey. Additionally, our findings indicated more than one source of menstrual hygiene information. A large number of respondents (n=412, 86.6%) reported receiving MHM information from teachers, 376 (79.0%) from mothers, 178 (37.4%) from friends and only 17 (3.6%) from fathers. Other sources such as grandmothers and aunties accounted for 34 (7.1%).

Regarding the materials used to manage menses, most of the girls reported that they used disposable sanitary pads (n= 441, 92.6%). However, more than half also reported using pieces of cloth (n=309, 64.9%), and few girls (n=64, 13.4%) reported using reusable pads. Relatedly, 190 (39.9%) of girls reported only schools as a source of sanitary pads, 117 (24.6%) reported only home as their source of sanitary pads and 123 (25.8%) of girls reported both school and home as their source of sanitary pads (Table 7).

On menstrual knowledge queries, only 49 (10.3%) have appropriate knowledge (=/>80%) with most girls aware of the need for daily washing while on menses (n=475, 99.8%), the duration (444, 93.3%), and interval of menses (437, 91.8%) and the role of hormones in leading to menstruation (433, 91%). Only 56 (11.6%) study participants were cognizant of the vagina not being the source of menstrual blood (Table 8).

Table 7:Experiences related to menstruation among adolescent school girls in rural Rwanda

Variable (N)	Characteristic		Number of respondents	Percent (%)
Age of menarche (476)	Mean age (SD)		13.13 (1.368)	
Years since menarche [a] (474)	0-1		286	60.3
	2-3		165	34.8
	Above 3		23	4.9
Sources of MHM information [a] (476)	Mother		376	79.0
	Father		17	3.6
	Teacher		412	86.6
	Siblings		98	20.6
	Friends		178	37.4
	Neighbors		22	4.6
	Media		62	13.0
	Other[b]		34	7.1
Main source of MHM information (476)	Mother		233	48.9
	Teacher		195	41.0
	Others [b]		48	10.1
Frequency of sanitary material change in 24 hours (476)	< 4 times		284	59.7
	=/>4 times		192	40.3
Materials used to manage menses [a] (476)	Disposable pads		441	92.6
	Pieces of cloth		309	64.9
	Reusable pads		64	13.4
	Others [c]		4	0.8
Sources of sanitary pads among users [a]	School only		190	39.9
	Both home and school		123	25.8
	Home only		117	24.6
	Others [d]		46	9.7
Missed at least 1 day due to menses in the last 3 month	No		429	90.0
	Yes		47	9.9
	Median days (Interquartile range)		2 (1-3)	
	Reasons *(N=47)*	Pain	28	59.6
		Fear of staining	11	23.4
		Lack of pads	9	19.1
		Others [e]	3	6.4

[a] Participants reported more than one source/material used/reason
[b] other sources of MHM information: Grandmothers, Aunts, Uncles
[c] others materials used: Menstrual panties, tissue paper, and leaves
[d] other sources: Friends, Compassion international, Speak out project, Nyampinga

[e] other reasons: Lack of privacy, heavy menses

Table 8: Knowledge level of adolescent school girls towards menstruation

N= 476	Score	Absolute numbers of respondents	Percent
	Good knowledge (=/> 80%)	49	10.3%
	Low knowledge (< 80%)	427	89.7%

Knowledge questions	Numbers with correct responses (N=476)	Percentage score
A girl needs to wash herself every day during menstruation	475	99.8
Menstruation is an illness	447	93.9
Menstruation lasts 2-7 days	444	93.3
Menstruation comes every 3 to 4 weeks	437	91.8
Menstruation is caused by hormones produced by the body	433	91.0
The abdomen is a source of menstrual blood	421	88.4
Menstruation lasts 10 days or more	415	87.2
Menstruation is a normal physiological process	408	85.7
The uterus is a source of menstrual blood	379	79.6
Sanitary pads should be changed 6-hourly during menses	374	78.6
The bladder is a source of menstrual blood	251	52.7
Normal menstruation has a foul smell	121	25.4
A girl can get pregnant during menstruation	88	18.5
The vagina is a source of menstrual blood	56	11.6

4.3 Usage of MHM services

The level of usage of MHM services was found to be 92% (n=437) determined if the participants used one or more services offered in the sanitary rooms. The service mostly used was privacy for changing sanitary material (n= 415, 87.2%) followed by receiving sanitary pads during last menstrual periods in school(n=313, 65.8%). A further 208 (43.7%) of girls reported that they disposed of the used pads into the sanitary room's disposal bin and only about 81 (17%) of girls used washing/bathing facilities (Figure 4; Figure 5).

Figure 4: Level of usage of MHM services during menses in the last month (N= 476)

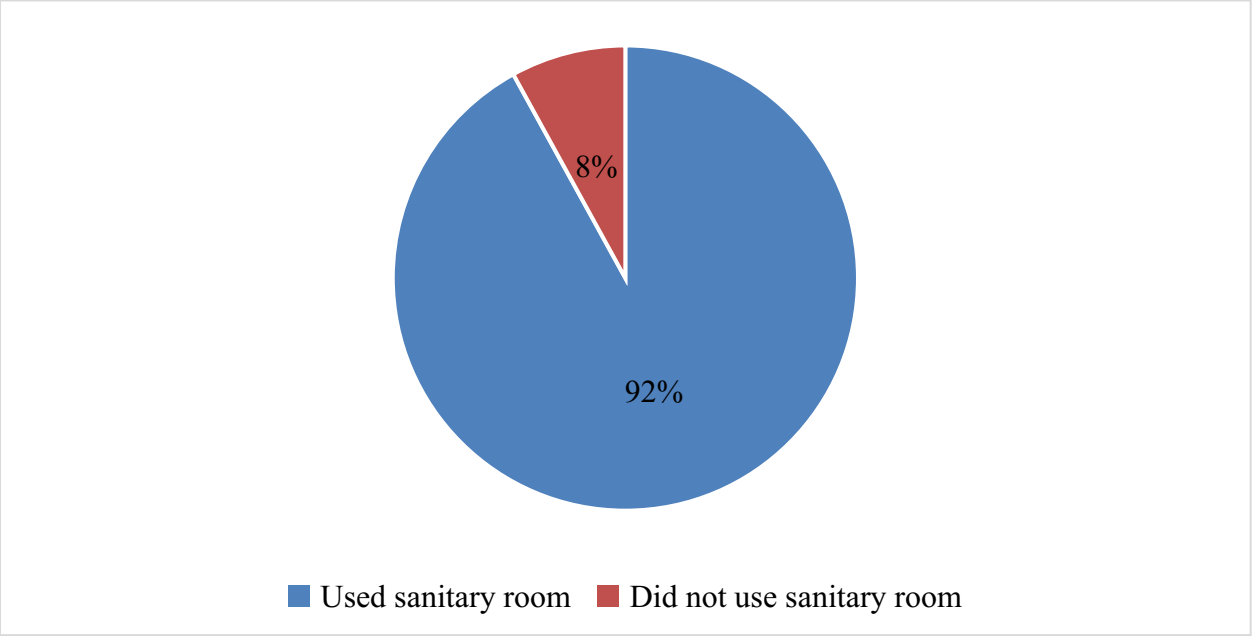
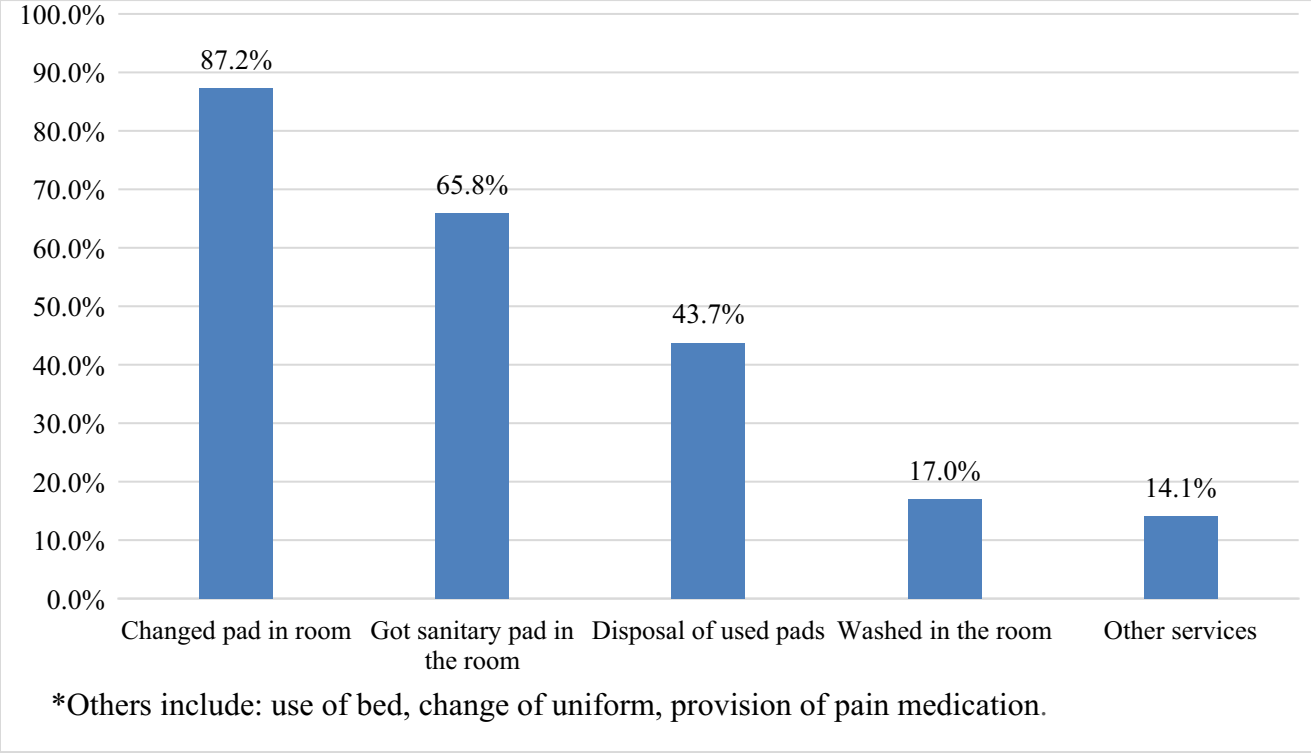


Figure 5: Usage of MHM services offered in the sanitary rooms



4.4 Results of Bivariate Analysis - factors associated with usage of MHM services

Table 9 shows the results of the bivariate analysis. It was found that the district of residence was associated with the usage of MHM services (p <0.001). In addition, years since menarche (P= 0.006), mother's main occupation (p= 0.026), source of menstrual information from mother (p=0.005), source of menstrual information from the teacher (p=0.009), missing school days during menses in the last 3 month (p=0.078), and frequency of pad change in 24 hours (p=0.054) were found to be associated with usage of the MHM services. There was no association between usage of the sanitary room and age, living situation, parental education level, MHM knowledge level, and other sources of MHM information such as grandmothers, friends, and media.

4.5 Results from Multivariate Analysis – factors associated with usage of MHM services

As table 10 shows, considering other factors, the district, years since menarche, MHM information from mother and teacher were found to be associated with usage of the MHM services. The analysis revealed that respondents from Rutsiro district were less likely to use the sanitary rooms compared to those from Nyaruguru (OR=0.273; 95%CI: 0.10-0.78, P=0.015). On the other hand, participants whose source of menstrual information was the mother were more likely to use the room (OR 3.6, 95%CI: 1.66-7.92, p=0.001) compared to those whose mothers did not offer this information. Similarly, the odds of usage of the room were increased if the source of information was the teacher as compared to not having the teacher as a source (OR 2.8, 95%CI: 1.22-6.78, p= 0.016). Furthermore, those who had experienced their menses for the last 2-3 years were 3.4 times likely to use the sanitary room compared to those that reported <1 year of menses (OR 3.36, 95%CI: 1.23-9.20, p= 0.016). The mother's occupation, the number of missed school days, and the frequency of changing sanitary pads were not significant factors influencing the usage of MHM services (P>0.05).

Table 9: Factors associated with usage of MHM services by adolescent school girls in rural Rwanda per background characteristics (N= 476)

Variable	Categories	Sanitary room use		N	P-value (Fisher's Exact)
		Yes n (%)	No n (%)		
Districts	Nyaruguru	96 (95.0)	5 (5.0)	101	<0.001[a]
	Nyamagabe	172 (97.7)	4 (2.3)	176	
	Karongi	75 (94.9)	4 (5.1)	79	
	Rutsiro	96 (80.0)	24 (20.0)	120	
Age groups (N=474)	11-13	96 (94.1)	6 (5.9)	102	0.395
	14-16	307 (91.1)	30 (8.9)	337	
	17-19	34 (97.1)	1 (2.9)	35	
Years since menarche (N=474)	0-1	255 (89.2)	31 (10.8)	286	0.006[a]
	2-3	160 (97.0)	5 (3.0)	165	
	Above 3	22 (95.7)	1 (4.3)	23	
Religion	Christian	416 (91.8)	37 (8.2)	453	0.622

Variable	Categories	Sanitary room use		N	P-value (Fisher's Exact)
		Yes n (%)	No n (%)		
	Muslim	5 (100)	0 (0)	5	
	Other	18 (100)	0 (0)	18	
Living situation	Mother only	72 (97.3)	2 (2.7)	74	0.115
	Father only	8 (88.9)	1 (11.1)	9	
	Both Parents	321 (92.0)	28 (8.0)	349	
	Living with neither parent	38 (86.4)	6 (13.6)	44	
Mother's education level	None	86 (90.5)	9 (9.5)	95	0.154
	Primary	293 (93.9)	19 (6.1)	312	
	Post-primary	15 (88.2)	2 (11.8)	17	
	Not living with mother	45 (86.5)	7 (13.5)	52	
Father's education level	None	56 (90.3)	6 (9.7)	62	0.666
	Primary	242 (92.7)	19 (7.3)	261	
	Post-primary	31 (88.6)	4 (11.4)	35	
	Not living with father	110 (92.2)	8 (6.8)	118	
Mother's main occupation	Unemployed	35 (89.7)	4 (10.3)	39	0.026 [a]
	Employed	31 (83.8)	6 (16.2)	37	
	Farmer	328 (94.3)	20 (5.7)	348	
	Not living with mother	45 (86.5)	7 (13.5)	52	
Father's main occupation	Unemployed	29 (85.3)	5 (14.7)	34	0.223
	Employed	45 (88.2)	6 (11.8)	51	
	Farmer	255 (93.4)	18 (6.6)	273	
	Not living with father	110 (93.2)	8 (6.8)	118	
MHM information from Mother	No	85 (85.0)	15 (15.0)	100	0.005 [a]
	Yes	354 (94.1)	22 (5.9)	376	
MHM information from teacher	No	53 (82.8)	11 (17.2)	64	0.009 [a]
	Yes	386 (93.7)	26 (6.3)	412	
MHM information from friends	No	272 (91.3)	26 (8.7)	298	0.378
	Yes	167 (93.8)	11 (6.2)	178	
MHM information from father	No	422(91.9)	37(8.1)	459	0.384
	Yes	17(100)	0(0)	17	
MHM information from media	No	382(92.3)	32(7.7)	414	1.000
	Yes	57(91.9)	5(8.1)	62	
MHM information from other sources [b]	No	409 (92.5)	33 (7.5)	442	0.324
	Yes	30 (88.2)	4 (11.8)	34	
The main source of MHM information	Mother	219 (94.0)	14 (6.0)	233	0.117
	Teacher	179 (91.8)	16 (8.2)	195	
	Others	41 (85.4)	7 (14.6)	48	

Variable	Categories	Sanitary room use		N	P-value (Fisher's Exact)
		Yes n (%)	No n (%)		
Level of MHM knowledge	Low	391 (91.6)	36 (8.4)	427	
	Good	48 (98.0)	1 (2.0)	49	
Missed at least 1 day due to menses in the last 3 month	No	399 (93.0)	30 (7.0)	429	0.078 [a]
	Yes	40 (85.1)	7 (14.9)	47	
Frequency of pad change in 24 hours	< 4 times	256 (90.1)	28 (9.9)	284	0.054 [a]
	=/>4 times	183 (95.3)	9 (4.7)	192	

[a] P-value of significance <0.1
[b] Other sources of MHM information include: Grandmothers, Aunts, Uncles

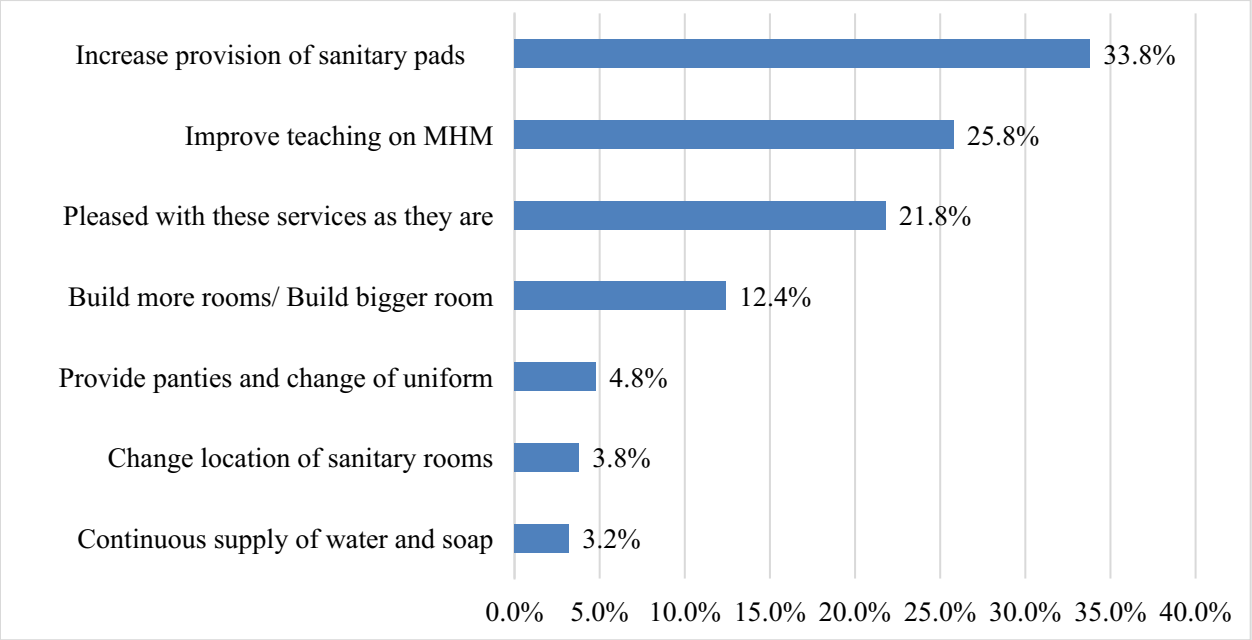
Table 10: Results of multivariate analysis (Logistic Regression) factors associated with usage of MHM services

Variable	Full model			Reduced model		
	AOR	**95% CI**	**P-Value**	**AOR**	**95% CI**	**P-Value**
Districts						
Nyaruguru	1			1		
Nyamagabe	2.92	[0.73 - 11.64]	0.127	2.76	0.70-10.83	0.146
Karongi	1.54	0.37-6.32	0.545	1.51	0.37-6.16	0.563
Rutsiro	0.32	0.11-0.95	0.041	0.27	0.10-0.78	0.015
Mother's main occupation						
Unemployed	1					
Employed	0.45	0.10-2.04	0.297			
Farmer	0.88	0.25-3.09	0.846			
Not living with mother	0.45	0.10-2.16	0.310			
MHM information from mother						
No	1			1		
Yes	2.67	1.09-6.52	0.031	3.63	1.66-7.92	0.001
MHM information from teacher						
No	1			1		
Yes	3.02	1.229-7.42	0.016	2.87	1.22-6.78	0.016
Years since menarche						
0-1 years	1			1		
2-3 years	3.37	1.21-9.41	0.020	3.36	1.23-9.20	0.018
>3 years	3.46	0.39-30.59	0.264	2.53	0.31-20.94	0.389
Missed at least 1 day due to menses in the last 3 month						
No	1					
Yes	0.47	0.17-1.34	0.157			
Frequency of pad change in 24 hours						
< 4 times	1					
=/> 4 times	1.31	0.55-3.10	0.543			

4.6 Participants recommendations to improve sanitary rooms

During the survey, respondents recommended their desires for the betterment of the sanitary rooms. The majority (n= 161, 33.8%) of girls suggested an increase in the provision of sanitary pads and approximately 25.8% of girls suggested educating on MHM. Furthermore, around 12.4% of girls reported building more or bigger sanitary rooms according to the needs of the girls (Figure 6)

Figure 6: Recommendations for sanitary rooms from school-going girls in rural Rwanda (N=476)



CHAPTER FIVE: DISCUSSION

This study aimed at determining the level of usage of the MHM services offered in the sanitary rooms and assess the factors influencing usage. We found usage to be as high as 92% of the participants and the factors influencing usage were the district of residence, years since menarche, and receiving MHM information from mother and teacher.

Usage of MHM services offered in school

In this study, we found a higher number of respondent girls who used one or more of the MHM services offered in the sanitary rooms. This is in keeping with Kabore's study in Burkina Faso that saw a two-year implementation of MHM in schools record 89% usage of MHM (Kabore/Iboudo, 2017). Similarly in Kenya, usage of MHM was at 71.2% among school girls (Korir et al., 2018). In some other studies, MHM usage was found to be lower and ranged from 46.7% in Western Ethiopia (Ahmed Shallo et al., 2020) to 66.2% in Uganda (Hennegan et al., 2016). This difference may be attributed to the difference in methodologies and the definition of MHM usage across the studies. In our study, the definition of MHM was the usage of one or more of the MHM services available in the sanitary room. However, in comparison to other studies that defined usage as using only sanitary pads or using all MHM services available (Ahmed Shallo et al., 2020; Hennegan et al., 2016). These findings show that there is high usage of MHM services in the sanitary rooms among the girls in rural Rwanda. Additionally, many studies have found lack of MHM is associated with absence, dropout, and pelvic infections (Chinyama et al., 2019; Janoowala et. al.; 2019, Schoep et al., 2019). Thus there is a need for continued investment of menstrual hygiene management services by the MOH and MINEDUC in schools in Rwanda.

Our study showed more than half of the schoolgirls used sanitary pads as the main method to manage menses in the last menstrual period. Similarly, 64.3% of girls in Western Ethiopia (Ahmed Shallo et al., 2020) and 80.6% in Northern Kenya (Korir et al., 2018) used disposable sanitary pads. However, we highlight that our study participants are sourcing sanitary pads from school whereas, in Kenya, only 39.1% had received pads from school in the preceding month. Our study also revealed the important finding that 64.9% of girls used both pieces of cloth and sanitary pads to manage menses in the last month. This means that the penetration of use of clean material is not adequate, yet a study conducted in Rwanda has shown the usage of alternative methods such as pieces of cloth can lead to pelvic infection and discomfort (Janoowala et. al., 2019). Furthermore, the commonest recommendation requested by the girls in this study was to increase the provision of sanitary pads for improving services offered in the sanitary room. As such, schools in collaboration with relevant stakeholders should consider the need for a continued supply of adequate amounts of sanitary pads both at school and home. Additionally, the sustainability of supplies may need to be addressed by possibly encouraging local production of sanitary pads.

A majority of the respondent girls reported using the privacy of the room to change sanitary material. A Ugandan study that included privacy of changing sanitary material as a criterion of usage of MHM services reported low levels of its use (Hennegan et al., 2016). Our study revealed a large number of girls used this service. This is an indicator that privacy as an MHM service offered is girl-friendly and is also evidence of the accessibility and availability of sanitary rooms and MHM services. This demonstrates to stakeholders the need to include the provision of privacy as a valuable aspect of MHM programs provided to school girls as Boosey et al. in Uganda found

the main reason girls reported menstrual-related absenteeism was the lack of a private place for them to wash and change at school (Boosey et al, 2014).

According to this study findings, less than half of the schoolgirls used disposal bins in the sanitary rooms, similar to Uganda where 87.5% carried used sanitary pads from schools to dispose of at home (Hennegan et al., 2016). If more than half of the respondents use sanitary pads and the majority change in the sanitary room, yet less than half dispose of used pads in an availed bin it shows there may be a lack of appropriate disposal facilities. Additionally, studies have found that the lack of disposal facilities causes used sanitary products to show when a girl is menstruating, resulting in embarrassment and stigma. Sometimes, poor disposal facilities lead girls to go back home to change sanitary material and at times opting to stay home (Hennegan & Montgomery, 2016). Moreover in rural Kenya, disposal proved to be a challenge. and led local groups to design reusable sanitary towels instead. (Jewitt & Ryley, 2014). This means program developers and schools should ensure there are appropriate disposal bins available as most disposable pads are not biodegradable.

Factors affecting usage of MHM services

Our analysis found that the usage of MHM services varied among the districts. This study revealed that girls from the Rutsiro district were less likely to use the MHM services compared to the other districts. This may be due to other interventions implemented in other districts which also aim to increase the usage of MHM. Karongi, Nyamagabe, and Nyaruguru districts benefited from the Ni Nyampinga program which holds meetings at schools on weekends to discuss SRH including MHM (Girl effect & Diouf, 2019). Karongi and Nyaruguru districts received Speak out programs that facilitate discussions in schools and include the participation of parents on SRH topics as well as availing sanitary pads (Action Aid, 2021). As Rutsiro district lacks these complementary programs and has shown less usage it means there is a need to replicate similar programs for other districts. The government and relevant stakeholders/NGOs need to continue to use a collaborative approach in MHM program implementation so that availing MHM services in sanitary rooms is coupled with other interventions such as Ni Nyampinga and Speak out to improve usage. The government should continue to ensure equitable distribution of all programs addressing MHM across Rwanda.

In our study we found, the girls who received MHM information from teachers were more likely to use the sanitary rooms. Similar findings were found in Northern Kenya by Korir et al. as 69.1% of respondents reported teachers as a source of MHM information and their use of sanitary materials was also high at 85.9% (Korir et al., 2018). Whereas, in Northeastern Ethiopia only 13.39% of girls reported teachers as a source of MHM information less than a third of the girls used sanitary materials to manage menses (Tegegne & Sisay, 2014).
This comparison of studies shows the importance of receiving MHM information from teachers. However, our study did not explore further the type of teacher who offered MHM information but our findings show that teachers should be made aware of sanitary rooms and the services offered, and also encourage students to talk to the teachers. This can be facilitated through the girls' student clubs where girls and teachers can discuss MHM topics openly.

Our analysis also found that girls who receive MHM information from mothers are more likely to use the MHM services. This finding is consistent with a study conducted in Western Ethiopia where most of the respondents reported mothers as a source of information the usage of sanitary pads among the girls was similar to our study findings. This same study determined that discussing menses with mothers was significantly associated with safer MHM practices compared with those who never discussed menses with their mothers (Ahmed Shallo et al., 2020). These studies show a positive association between the usage of sanitary pads and receiving MHM information from mothers. Our findings. show that mothers have an important role to sensitize their daughters about what good MHM entails to ensure appropriate usage of sanitary rooms to keep menstrual hygiene during menstruation as such, interventions addressing MHM should be integrative to involve mothers as well as girls.

Our study also found that girls who have experienced menses for more than 2 years were more likely to use the MHM services compared to those who had experienced menses for less than a year. We did not find other studies that specifically assessed years of experiencing menses to the usage of sanitary rooms or MHM services. This finding shows that teachers can make a concerted effort to connect with girls who have experienced their menses for a shorter duration i.e. less than a year from menarche.

5.1 Challenges and limitations

For our study, in the initial phase, the challenge we faced during this research was that the list of female students provided to the researchers by the schools selected for this study also included girls who had as yet not experienced menstruation. As a result, these girls could not participate in the study. To overcome this issue and fulfill the sample size requirement, the research had to be extended to include five more schools that matched the study's selection criteria. These schools were informed through the district coordinator in a timely manner.

The other challenges faced were due to the current COVID-19 pandemic. This led to girls attending school in shifts to minimize crowding in classes and as such data collection interruption occurred as data collectors at times missed participants as they moved between schools. We overcame this challenge by changing the field plan to ensure data collectors remained in one school for a whole day to conduct interviews even when the students' shifts changed. Furthermore, the end of academic year exams was brought forward and coincided with data collection. To mitigate this issue we liaised with the school administrations to ensure data was collected before and after exams.

The study has its limitations. The first limitation was the nature of our study, a cross-sectional design, it cannot establish causal inference between the dependent and the predicting variables. Moreover, our study assessed usage, not whether the usage was adequate, good, or bad. Further studies are required to assess the quality of usage of MHM services offered in sanitary rooms.

Secondly, the study captured only students' views and was quantitative. It did not include teachers, and parents' views. Moreover, it lacked a qualitative component that could have offered a better understanding of other factors such as social and cultural that may have influenced the usage of MHM services. The study also did not assess if the availed services reduced absenteeism, which was the main objective of availing the sanitary rooms. Thus, further mixed methods studies are

recommended to offer data triangulation to understand the impact of offering MHM services on school attendance and sociocultural factors affecting usage that our study did not assess with its closed-ended survey.

Thirdly, though our study questions were dependent on a one-month recall to control bias, However, recall bias may still have occurred when getting the exact age of menarche from the girls. Additionally, there may be responder/desirability bias among the girls considering the sensitive topic to discuss openly i.e. menstrual hygiene. For minimizing this bias we used well-trained female data collectors who encouraged participants to be honest about their answers and the survey was conducted in specially designated classes of the school compound to provide optimum privacy.

CHAPTER SIX: CONCLUSION AND RECOMMENDATIONS

6.1 Conclusion

This study emphasized the importance of incorporating MHM interventions when designing WASH programs in schools as the high usage highlights the need for these services among adolescent girls. Furthermore, open discussions with teachers and parents about menses should be encouraged as the study shows the source of MHM information has an impact on the usage of MHM services.

Moreover, there should be the continued provision of sanitary pads to the girls to optimize hygienic practices as it will ensure the frequency of changing pads and reduce the usage of pieces of cloth that can lead to increased risk of infections for girls.

6.2 Recommendations

This study found usage of MHM services offered in the sanitary rooms to be high. We recommend the development of a government policy spearheaded by MINEDUC and MOH on MHM management in Rwanda to have cohesive program implementation among all stakeholders involved in offering WASH facilities and scaling up MHM programs countrywide. Furthermore, interventions should also prioritize the continuous provision of sanitary pads and improved disposal services of used MHM materials.

Moreover, girls who had experienced menses for more than 2 years were more likely to use the MHM services compared to those who had experienced menses for less than a year. We recommend the inclusion of school clubs with “big-sister” program. In this program, the experienced girls will be mentors to inexperienced girls and can teach them how best to manage their hygiene during menses as executed in Kenya (McMahon et al., 2011).

We also found that if mothers and teachers gave information on MHM it improved the likelihood of usage of MHM services, therefore, there should be capacity-building programs among teachers to ensure they continue to deliver appropriate MHM information. Additionally, there should be community engagement programs that encourage mothers to provide comprehensive MHM information to their daughters.

We found under-reporting of data on MHM issues in the context of Rwanda, therefore we recommend further research on this topic using mixed-method studies for the additional qualitative component specifically addressing challenges school girls face in Rwanda when managing their menses. This can offer clarity on what adolescent girls believe are priority areas that need to be addressed. Additionally, with the difference of definition of MHM, there need to be standardized indicators for measuring the usage and impact of MHM intervention.

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CHAPTER EIGHT: APPENDICES

Appendix 1: Questionnaire

Appendix 1.1: English Version

Hello, we are Carolyn and Bilquees.

This study is designed to solicit your opinions on the "Girls sanitary rooms" in your school. The information you will provide will help us to recommend how to improve facilities for all girls in the school.

The findings will also be disseminated and can be used as a steppingstone for further research. Your responses will be confidential, and your name will not be recorded. The final report will be aggregated and will not be in any way traced back to you.

Feel free, all answers are welcome!

Participant Code: _____ Date of Interview _____

School Name: _____ District:_____

Name of Interviewer: _____

Part:1

Socio-demographics

- Age
- Language
- Religion
- Do you have/do you live with:
- Mother
  - Yes
  - No
- Father
  - Yes
  - No

Mother's education level

- Primary
- Secondary
- Tertiary
- None
- Don't have mother

Father's education level

- Primary
- Secondary
- Tertiary
- None

Occupational status of the Mother

- Housewife
- Farmer
- Self-employed
- Employed in private organization
- Governmental employee
- Daily laborer
- Others
-

Occupational status of the father

- Farmer
- Self-employed
- Employed in private organization
- Government employee
- Daily Laborer
- Others

At which age did you first experience your menstruation?

Part:2

Knowledge about menstruation

1. What is menstruation? (YES) (NO)
   - It is a normal physiological process. ☐ ☐
   - It is a disease process ☐ ☐
   - It comes every 3 to 4 weeks ☐ ☐
   - It lasts 2-7 days ☐ ☐
   - It lasts 10 days or more ☐ ☐

2. What are the causes of menstruation?
   - Hormones produced by the body ☐
   - It is a curse of God ☐
   - It is caused by disease ☐
   - I don't know ☐

3. What is the source of menstrual blood?
   - Uterus ☐
   - Vagina ☐
   - Bladder ☐
   - Abdomen ☐
   - I don't know ☐

4. Can a girl get pregnant during menstruation?
   Yes ☐ No ☐

5. A girl needs to change pad every 6 hours?
   Yes ☐ No ☐

6. Normal menstruation has a foul smell?
   Yes ☐ No ☐

7. A girl needs to wash herself every day during menstruation?
   Yes ☐ No ☐

Practices around menstrual hygiene management?

8. Who provided you with information about menstruation? (tick all that apply)

- Father ☐
- Mother ☐
- Siblings ☐
- Neighbors ☐
- Friends ☐
- Teacher ☐
- Television ☐
- Other, Please specify…….

9. Of all who provided you with the information above, who was your main source of information?

- Father ☐
- Mother ☐
- Siblings ☐
- Neighbors ☐
- Friends ☐
- Teacher ☐
- Television ☐

Other, please specify…….

10. What type of materials have you ever used to manage your menstruation, (tick all that apply?)

- Leaves ☐
- Disposable sanitary pads ☐
- Cloth sanitary pads that I wash and reuse ☐

- Pieces of cloth
- Others, please specify……...

11. If you use pads or cloths, after how many hours do you change?

12 . In the last three months have you missed any school days during your menstruation?

Yes No

13. If yes, for how many days did you miss school?

14. What is/are the reason(s) you have missed school due to periods, tick all that apply?

- Lack of a facility to change in private
- Unavailability of sanitary products
- Fear of staining or smell
- Pain and discomfort during periods
- Others please specify …….

Utilization of menstrual hygiene management services (Sanitary rooms) in school and factors affecting utilization.

Question 1-9 will ask you about your menstrual period in the last month

1. In the last period, did you come to school when you are in your menstrual period?
   Yes No
2. If yes, when you needed to change when at school, where did you go?
   - School sanitary room
   - Went back home
   - Latrine
   - Bush
   - Not needed to change

- Other_____

3. What type of materials did you use to manage your menstruation, (tick all that apply?)
   - Leaves
   - Disposable sanitary pads
   - Cloth sanitary pads that I wash and reuse
   - Pieces of cloth
   - Others, please specify……...

4. In your most recent period, who gave you information about MHM?
   - Teacher
   - Mother
   - Father
   - Friend
   - TV
   - Others – specify……..

5. In your most recent period, what was your source of sanitary pads?
   - From school
   - From home
   - From friend
   - From neighbor
   - Others, please specify_____

6. In your most recent period, did you wash your genitalia with soap and water?

   Yes No

7. If yes, where do you wash?
   - At home
   - At school

8. If No, why? _____

9. In your most recent period, where did you throw used sanitary products?

- In the latrine at school
- In the latrine at home
- In special bucket in school
- In the bush
- Others, please specify _____

The following questions will ask you about your menstrual period in general since it began.

10. During your menstrual periods when you need to change when you are at school, where do you go?
    - School sanitary room
    - Home
    - Latrine
    - Bush
    - Not needed to change
    - Other_____
11. During your menstrual periods who gives you information about MHM?
    - Teacher
    - Mother
    - Father
    - Friend
    - TV
    - Others – specify
12. During your menstrual periods what was your source of sanitary pads?
    - From school
    - From home
    - From friend
    - From neighbor
    - Others, please specify_____
13. During your menstrual periods, do you wash your genitalia with soap and water?

    Yes No

14. If yes, where do you wash?

- At home
- At school

15. If No, why? _____

16. During your menstrual period, where do you throw used sanitary products?

- In the latrine at school
- In the latrine at home
- In special bucket in school
- In the bush
- Others, please specify _____

17. Have you ever used the sanitary rooms in your school during your periods?

Yes

No

18. If yes, which services have you used while at school? (Please tick all that apply)

- Water and soap
- Privacy of the room for changing
- Received sanitary pads according to need
- Disposal of used sanitary pads
- Received teaching about menstrual hygiene from the teacher
- Others, please specify…….

19. If no, why? (Please tick all that apply)

- It is always locked
- It is not in a good location (e.g. close to staff room, close to boys latrine)
- Water and soap are not always available
- Sanitary pads are not always available

- I am not comfortable talking to the teacher in charge of the room ☐
- Other……..

20. What actions do you think the school can put in place to help girls deal with their menstruation?

……

Appendix 1.2: Kinyarwanda version

Urutonde rwibibazo

Muraho, nitwa Carolyn na Bilquees bagusuhuza.

Ubu bushakashatsi bugamije gukusanya ibitekerezo byanyu kubijyanye n'ibyumba by'isuku by'abakobwa mu kigo cyanyu. Amakuru utanga azadufasha mu gutanga inama y'ibyakorwa kugirango ibyumba by'abakobwa mu mashuri birusheho kuba byiza.

Amakuru azavamo kandi azashyikirizwa abantu batandukanye kuburyo yakwifashishwa mu gukora ubundi bushakashatsi mu gihe kizaza. Ibisubizo byawe bizagirwa ibanga, kandi nta makuru ajyanye n'amazina yawe azakusanywa muri ubu bushakashatsi. Raporo yanyuma izakorwa muri rusange kandi ntago izagaragaza imyirondoro yawe bwite mu buryo ubwo aribwo bwose.

Ibisubizo byose bihawe ikaze ntagisubizwa inyuma.

Kode y'uganirizwa: _____ Itariki y'ikiganiro_____
Izina ry'ikigo cy'amashuri:_____Akarere:_____
Amazina y'uganiriza: _____

Igice cya 1
Ibiranga umuntu

- Imyaka y'ubukure
- Umwaka wigamo
- Ururimi
- Idini usengeramo

Ese ubana/ufite:
Mama

Yego ☐
Oya ☐

Papa

Yego ☐
Oya ☐

Amashuri mama wawe yize

- Abanza
- Ayisumbuye
- Kaminuza
- Ntayo

Amashuri papa wawe yize

- Abanza
- Ayisumbuye
- Kaminuza
- Ntayo

Akazi mama wawe akora

- Imirimo yo mu rugo
- Umuhinzi/Umworozi
- Arikorera
- Akorera ikigo kigenga
- Umukozi wa Leta
- Nyakabyizi
- Ibindi

Akazi papa wawe akora

- Umuhinzi/umworozi
- Arikorera
- Umukozi w'ikigo kigenga
- Umukozi wa Leta
- Nyakabyizi
- Ibindi

Ni kuyihe myaka wagiye mu mihango bwa mbere?

Igice cya2

Ubumenyi bwerekeye imihango

1. Imihango ni iki? (Hitamo ibiri byo byose)
   - Ni imikorere isanzwe y'umubiri ☐
   - Ni indwara ☐
   - Igaruka buri byumweru 3 kugeza kuri 4 ☐
   - Imara hagati y'iminsi 2 ni 7 ☐
   - Imara iminsi 10 cyangwa hejuru yayo ☐
2. Ni iki gitera kujya mu mihango? (Hitamo ibiri byo byose)
   - Imisemburo yo mu mubiri ☐
   - Ni umuvumo uturuka ku mana ☐
   - Iterwa n'uburwayi ☐
   - Ntago mbizi ☐
3. Imihango ituruka hehe? (Hitamo ibiri byo byose)
   - Muri nyababyeyi ☐
   - Mu gitsina ☐
   - Mu ruhago rw'inkari ☐
   - Mu gifu ☐
   - Ntago mbizi ☐
4. Byashoboka ko umukobwa uri mu mihango atwara inda?

   Yego ☐ oya ☐
5. Umukobwa uri mihango akenera guhindura kotegisi buri masaha 6?

   Yego ☐ oya ☐
6. Imihango isanzwe igira impumuro mbi?

   Yego ☐ Oya ☐
7. Umukobwa uri mu mihango akenera koga buri munsi?

Yego ☐ oya ☐

Ibikorwa ku bijyanye n''isuku mu gihe cy'imihango

8. Ninde uguha amakuru yerekeranye n'imihango? (Hitamo ibiri byo byose)

- Papa ☐
- Mama ☐
- Abavandimwe ☐
- Abaturanyi ☐
- Inshuti ☐
- Mwarimu ☐
- Televiziyo ☐
- Ahandi, wasobanura…….

9. Mubyo wavuze byose haruguru, ni he hingenzi ukura amakuru? (hitamo hamwe)

- Papa ☐
- Mama ☐
- Abavandimwe ☐
- Abaturanyi ☐
- Inshuti ☐
- Mwarimu ☐
- Televiziyo ☐
- Ahandi, wasobanura…….

9. Ni ibihe bikoresho waba warigeze kwifashisha igihe uri mu mihango, hitamo ibiri byo byose?

- Ibibabi ☐

- Kotegisi ukoresha rimwe ubundi ukazijugunya
- Kotegesi zikoze mu myenda wamesa ukongera ukazikoresha
- Ibitambaro by'imyenda
- Ibindi, wasobanura……...

10. Niba ukoresha Kotegisi cyangwa imyenda, uhindura nyuma y'amasaha angahe?

11. Mu mezi atatu ashize hari umunsi wegeze usiba ishuri mu gihe uri mu mihango?

Yego Oya

12. Niba ari yego, wasibye ishuri iminsi ingahe?

13. Ni iyihe/ izihe mpamvu zatumye usiba ishuri kubera imihango, hitamo ibiri byo byose?

- Ntaho guhindurira hihereye hahari
- Nabuze ibikoresho by'isuku (kotegisi)
- Kugira ubwoba bwuko nakwiyanduza cyangwa impumuro mbi
- Ububabare no kubangamirwa mu gihe cyimihango
- Ibindi , bisobanure…….

Igice cya 3

Ikoreshwa rya serivise z'isuku mu gihe cy'imihango (ibyumba by'abakobwa) ku ishuri ndetse na zimwe mu mpamvu zigena ikoreshwa ryabyo

Ibibazo kuva ku cya 1 – 9 birabaza ibijyanye n'imihango y'ukwezi gushize.

1. Mukwezi gushize, igihe uherukira mu mihango, haba hari umunsi waje ku ishuri uri mu mihango?

   Yego Oya

2. Niba ari yego, mu gihe washatse guhindura uri ku ishuri, wabikoreye he?
   - Icyumba cy'abakobwa ku ishuri
   - Nasubiye mu rugo

- Mumusarani
- Mu bihuru
- Sinakeneye guhindura
- Ahandi_____

3. Ni ibihe bikoresho waba warakoresheje mu gihe wari uri mu mihango, hitamo ibiri byo byose?
   - Ibibabi
   - Kotegisi ukoresha rimwe ubundi ukazijugunya
   - Kotegesi zikoze mu myenda wamesa ukongera ukazikoresha
   - Ibitambaro by'imyenda
   - Ibindi, wasobanura……...

4. Ese mu gihe wari mu muhango, ninde waguhaye amakuru ku bijyanye n'isuku?
   - Mwarimu
   - Mama
   - Papa
   - Inshuti
   - Television
   - Abandi (bavuge)……..
   -

5. Ese ubwo uheruka mu mihango, nihe wakuye kotegisi?
   - Ku ishuri
   - Murugo
   - Mu nshuti
   - Mubaturanyi
   - Ahandi (havuge)_____

6. Ese ubwo wari mu mihango, waba warigeze woza mu gitsina ukoresheje isabune n'amazi?

   Yego Oya

7. Niba ari yego, wakarabiye hehe?

- Mu rugo
- Ku ishuri

8. Niba ari hoya, kubera iki? _____

9. Ese ubwo wari mu mihango, nihe wajugunye ibyo wakoresheje?

- Mumusarane ku ishuri
- Mumusarane mu rugo
- Mundobo yabugenewe ku ishuri
- Mu gihuru
- Ahandi (havuge) _____

Ibibazo bikurikira birabaza ibijyanye n'imihango muri rusange kuva watangira kuyijyamo).

10. Ese iyo uri mu mihango, mu gihe washatse guhindura uri ku ishuri, uhindurira he?

- Icyumba cy'abakobwa ku ishuri
- Nasubiye mu rugo
- Mumusarani
- Mu bihuru
- Sinkenera guhindura
- Ahandi_____

11. Ese mu gihe uri mu muhango, ninde uguha amakuru ku bijyanye n'isuku?

- Mwarimu
- Mama
- Papa
- Inshuti
- Television
- Abandi (bavuge)……..

12. Ese iyo uri mu mihango, nihe ukura kotegisi?

- Ku ishuri
- Murugo
- Mu nshuti
- Mubaturanyi
- Ahandi (havuge)_____

13. Ese mu gihe uri mu mihango, waba ujya woza mu gitsina ukoresheje isabune n'amazi?

Yego Oya

14. Niba ari yego, ukunda gukarabira hehe?

- Mu rugo
- Ku ishuri

15. Niba ari hoya, kubera iki? _____

16. Ese iyo uri mu mihango, nihe ukunda kujugunya ibyo wakoresheje?

- Mumusarane ku ishuri
- Mumusarane mu rugo
- Mundobo yabugenewe ku ishuri
- Mu gihuru

Ahandi (havuge) _____

17. Ese waba warigeze ukoresha ibyumba by'abakobwa mu gihe uri ku ishuri uri mu mihango?

Yes

No

18. Niba ari yego, Ni izihe serivisi waba warigeze ukoresha uri ku ishuri (hitamo ibishoboka byose)

- Amazi n'isabune
- Kujya mu cyumba guhindura
- Nahawe kotegisi mu gihe narinzikeneye
- Kujugunya kotegisi nakoresheje
- Kwigishwa ibijyanye n'isuku y'imihango

- Ibindi, bivuge……..

19. Niba ari oya, kubera iki? (Hitamo ibishoboka byose)

- Hahora hafunze n'urufunguzo
-
- Ntabwo kiri ahantu heza (urugero: hafi y'ibyumba by'abarimu, ni hafi y'imisarani)
- Amazi n'isabune ntabwo iteka biba birimo
- Nta kotegisi ziba zirimo
- Numva ntisanzuye kuvugana na mwarimu ushizwe icyumba
- Ibindi……..

20. Ese wumva ari ibiki ishuri ryakora kugirango rirusheho gufasha abakobwa mu gihe bari mu mihango?

……

Appendix 2: Information and Consent Form.

Appendix 2.1: English version.

Participant ID: _____

Project title: Assessing the usage of menstrual hygiene management services and its impact on adolescent girls' school attendance in 4 districts (Rutsiro, Karongi, Nyamagabe, and Nyaruguru) In Rwanda

Study population: Schoolgirls aged 10-19 years, who attend schools with WFPs HGSF program.

Version date: 02/04/2021

Principal Investigators:

Carolyn Aling, student MGHD program,

Bilquees Idrees, student MGHD program,

About this consent form

Dear parents,

We invite you and your child to take part in a research study being conducted by Carolyn Aling and Bilquees Idrees who are students at University of Global Health Equity, Butaro, as part of their research project "Assessing the usage of menstrual hygiene management services and its impact on adolescent girls' school attendance". The study, as well as your rights as a participant, are described below.

Description: Before joining the survey, you must understand and take into consideration the contents of this form on the behalf of your child, since it contains important information to assist you in deciding whether your child will participate or not.

This study is designed to solicit your daughter's opinions on the "Girls sanitary rooms" in her school. The information provided will help us to recommend better facilities for girls in the school. The findings will also be disseminated and can be used as a stepping stone for further research.

Participation is voluntary:

It is your choice whether your daughter will participate in this survey or not. If you choose her participation, you may change your mind and can leave the survey at any time. Refusal to participate or stop your daughters participation will involve no negative consequences to the relationship you have with the school or loss of benefits to which you are otherwise entitled.

What should you know about this research study?

The school girls age 10 - 19 will be the part of this study and we will ask about the level of usage of the girls' sanitary rooms as well as factors affecting the usage.

What is the purpose of this project?

The purpose of this study is to understand the impact that sanitary rooms have on school attendance of girls aged 10-19 and experience of menstruation and the level of usage of sanitary rooms together with factors affecting it.

How many participants will take part in this research?

Approximately 630 school girls will take part in this research.

What is the procedure for participation in this project?

Parents/guardians will give consent for their daughters to participate in the study. Participants will give assent and anonymity will be emphasized at all points of the study. The data collection will occur in designated classrooms within the selected schools. Female data collectors will facilitate the process and the principal investigators will supervise. The questionnaire will take 20 minutes to fill. Data collection will be done in June 2021.

What are the possible risks or discomforts related to taking part in this project?

There is no known risk associated with participating in the study. The participants may experience some emotional distress due to the sensitive nature of the topic. The participants will be informed of their anonymity.

What are the possible benefits of taking part in this project?

There is no direct benefit of participating in this study. However, there is an indirect benefit as the information collected can help improve the menstrual hygiene services offered in schools for girls.

Will I be compensated for my daughter participating in this research?

No, there will be no compensation for participants in this research.

What will I have to pay for my daughter's participation in this research?

It will not cost anything for your daughter to participate in this research.

Can my daughter's taking part in the research end early?

You may decide that your daughter may not continue in the research at any time without it being held against you.

If my daughter takes part in this project, how will her privacy be protected? What happens to the information you collect?

All information collected will have no identifiers and will be stored on a password protected computer only accessible to the research team. Research results will not contain any names or personal identifiers.

Data collected without any identifiers may be seen by the UGHE Institutional Review Board (IRB) that oversees the research. We may also share your information related to this study with other parties including translators, transcribers, thesis committee.

If I have any questions, concerns, or complaints about this project, who can I talk to?

The researcher for this study is Carolyn Aling' and Bilquees Idrees who can be reached +250780021948,

carolyn.aling@student.ughe.org,

bilquees.idrees@student.ughe.org

If you need more information about the study and clarification, if you feel harmed in any way, please contact the IRB.This research has been reviewed by the University of Global Health Equity Institutional Review Board. If you wish to speak with someone from the IRB, please contact the IRB at irb@ughe.org, telephone: 0788316894 or Office of Human Research Administration (OHRA) at Kigali Heights Building, 5th floor, Kacyiru, Kigali, P.O. Box 6955, Rwanda, for any of the following:

- If your questions, concerns, or complaints are not being answered by the research team;
- If you want to talk to someone besides the research team;
- If you have questions about your rights as a research participant, or;
- If you want to get information or provide input about this research.

Statement of consent

Signing an X next to each statement and your fingerprint below indicates that:

- You have understood the content of this form;
- You have had the opportunity to ask questions and received answers that were satisfactory;
- If needed, you took time to discuss this information with others to help you decide whether to participate;
- You agree to participate in this research project.

_____ _____

Full name and signature of the witness | Date and location

_____ _____

Full name and signature of the person | Date and location

requesting consent

I have read the information in this consent form including risks and possible benefits. All my questions about the research have been answered to my satisfaction. I understand that my daughter is free to withdraw at any time without penalty or loss of benefits to which she is otherwise entitled.

I consent to participation of my daughter in the study.

SIGNATURE

Appendix 2.2: Kinyarwanda version.

Umubare uranga umuntu**:** _____

Umutwe w'ubushakashatsi: Gusuzuma ikoreshwa rya serivisi z'isuku yerekeye imihango, n'ingaruka yazo ku kw'itabira ishuri kubakobwa mu turere tune two mu Rwanda (Rutsiro, Karongi, Nyamagabe, and Nyaruguru).

Abarebwa n'ubushakashatsi: abarebwa n'ubushakashatsi ni abakobwa bitabira ishuri bari hagati y'imyaka 10-19, biga mu bigo by'ishuri WFP HGSF ikoreramo.

Abakarani b'ubushakashatsi:
Carolyn Aling, student MGHD program, umunyeshuri wiga mubijyanye no gutanga ubuzima ku isi muri kaminuza ya Global Health Equity (UGHE)
Bilquees Idrees, student MGHD program, Umunyeshuri wiga mubijyanye no gutanga ubuzima ku isi muri kaminuza ya Global Health Equity (UGHE)

Ibijyanye niyi nyandiko yo kwemera

Babyeyi,
Tubatumiye mwebwe n'umwana wanyu mu kwitabira ubushakashatsi buri gukorwa na Carolyn Aling na Bilquess Idrees, abanyeshuri muri kaminuza ya Global Health Equity (UGHE), mu bushakashatsi bwabo "gusuzuma ikoreshwa rya serivisi z'isuku yerekeye imihango, n'ingaruka yazo mu kw'itabira ishuri kubakobwa mu turere tune two mu Rwanda (Rutsiro, Karongi, Nyamagabe, na Nyaruguru)". Iyi nyandiko ikubiyemo ibirebana n'ubushakashatsi, n'uburengazira bwawe.

Ibisobanuro: Mbere yo kwinjira muri ubu bushakashatsi, ukwiriye gusobanukirwa no kwumva ibiri muri iyi nyandiko mu mwanya w'umwana wawe, kuko bifite amakuru y'ingenzi yo kugufasha guhitamo niba umwana wawe ya kwitabira ubu bushakashatsi. Ubu bushakashatsi bugamije kumenya ibitekerezo by'umwana wawe kubijyanye n'icyumba cy'isuku' mu ishuri yigamo. Amakuru azavamo azifashishwa mu gutanga ibitekerezo byo kunoza icyumba cy'isuku cy'abakobwa mu mashuri. Ibyagaragaye kandi bizasangizwa n'abandi bakora ubushakashatsi bikaba byazanifashwishwa mu bundi bushakashatsi.

Uruhare ni ubushake.
Ni ubushake kwemeza niba umwana wawe yajya mu bushakashatsi cyangwa se ntabujyemo. Mu gihe wahisemo ko yitabira ubushakashatsi, ufite umudendezo wo kwisubiraho ugahagarika ukwitabira kwe. Kwanga ko yitabira cyangwa guhagarika uruhare rwe nta ngaruka izo arizo zose bizagira yaba ku mubano ufitanye n'ishuri yigamo cyangwa se izindi serivisi izo arizo zose ugomba guhabwa wowe ubwawe cyangwa se umwana wawe.

Ni iki ukwiye kumenya kuri ubu bushakashatsi?
Abanyeshuri b'abakobwa bafite hagati y'imyaka 10-19 nibo bazashyirwa muri ubu bushakashatsi, babazwe kubijyanye n'imikoreshereze y'icyumba cy'isuku" n'ibituma bagikoresha cyangwa se batagikoresha.

Intego y'ubu bushakashatsi ni iyihe?
Intego y'ubu bushakashatsi ni ugusuzuma imikoreshereze y'ibyumba by'isuku by'abakobwa, ibituma bakoresha ibyumba cyangwa se batabikoresha ndetse n' ingaruka ibyumba by'isuku mu mashuri byagize ku kw'itabira ishuri ku bakobwa bari hagati y'imyaka 10-19.

Ubushakashatsi buzitabirwa n'abantu bangahe?
Ugereranyije, abakobwa 630 nibo bazitabira ubu bushakashatsi.

Ubushakashatsi buzitabirwa mu buhe buryo?
Ababyeyi/ abarinzi bazatanga uburengazira kugira ngo abakobwa babo bitabire ubushakashatsi. Abitabiriye ubushakashatsi bazemeza kujyamo kandi kugirirwa ibanga bizitabwaho by'umwihariko. Amakuru azafatirwa mu byumba bitandukanye by'amashuri, ahantu hihereye. Abakarani b'ubushakashatsi b'abagore nibo bazafasha gukurikirana no kugenzura iki gikorwa. Ibibazo bizafata iminota 20 gusubizwa. Amakuru azakusanywa muri Kamena 2021.

Ni izihe ngaruka zishobora kubaho zaturuka mu kugira uruhare muri ubu bushakashatsi ?
Nta ngaruka zizwi zaturuka mu kwitabira ubu bushakashatsi. Gusa abazitabira ubu bushakashatsi bashobora kumva batisanzuye mu gihe babazwa ibibazo bigendanye n'imihango. Abitabira bazizezwa kugirirwa ibanga mu buryo bwose.

Ni izihe nyungu zishoboka zo kugira uruhare muri ubu bushakashatsi?
Umusanzu wo kuba umwana wawe yakwitabira ubu bushakashatsi ni ugufasha mu kunoza serivisi z'icyumba cy'isuku ku bakobwa mu mashuri.

Nzahabwa ingurane yo kuba umukobwa wanjye yitabira ubu bushakashatsi ?
Kwitabira ubushakashatsi ni kubushake ; ntangurane ziteganyijwe kubwo kwitabira ubu bushakashatsi.

Nzagomba kwishyura iki kugira umukobwa wanjye yitabire ubu bushakashatsi?
Ntacyo bizagusaba kugirango umukobwa wawe agire uruhare muri ubu bushakashatsi.

Uruhare rw'umukobwa wanjye muri ubu bushakashatsi bushobora kurangira hakiri kare?
Ufite umudendezo wo kwisubiraho ugahagarika uruhare rw'umukobwa wawe muri ubushakashatsi igihe icyo aricyo cyose ubishakiye kandi nta ngaruka n'imwe bizakugiraho yaba wowe ubwawe cyangwa se umukobwa wawe yaba ku mubano ufitanye n'ishuri cyangwa se ibindi ugomba guhabwa. Uhisemo guhagarika uruhare rw'umukobwa wawe, wabimenyesha umushakashatsi mukuru mu gihe bishoboka.

Umukobwa wanjye niyitabira ubu bushakashatsi, ubuzima bwe bwite buzarindwa bute? Bigenda bite ku makuru azakusanywa?

Amakuru yakusanyijwe azabikwa mububiko bwizewe bushobora kugerwaho gusa n'itsinda ry'ubushakashatsi kuri mudasobwa ya UGHE ifite ijambo ryibanga. Amakuru yakusanyijwe ntazaba afiteho amazina n'ibindi byaranga umukobwa wawe.
Amakuru yakusanyijwe ashobora kubonwa n'ikigo gishinzwe gusuma ubushakashatsi muri kaminuza yigisha ibyo ubuzuma rusange ku isi (UGHE Institutional Review Board (IRB).

Mubyongeyeho, dushobora kandi gusangira amakuru yawe ajyanye n'ubu bushakashatsi nandi matsinda arimo abasemuzi, na komite ishinzwe amasomo.

Niba mfite ibibazo, impungenge, cyangwa ibirego bijyanye n'ubu bushakashatsi, ninde navugana nawe?
Abashakashatsi bakuru muri ubu bushakashatsi ni Carolyn Aling na Bilquees Idreess, wabavugisha kuri numero +250780021948
carolyn.aling@student.ughe.org,
bilquees.idrees@student.ughe.org

Ubu bushakashatsi bwagenzuwe na UGHE IRB. Mugihe wifuza kuvugana n'ikigo gishinzwe kugenzura ubushakashatsi IRB, wabandikira kuri irb@ughe.org, cyangwa ugahamagara telephone: 0788316894 cyangwa ukagera ku cyicaro gikuru mu nyubako ya Kigali Heights, Inzu ya 5, Kacyiru, Kigali, Agasanduku k'iposita 6955, Rwanda. Ku mpanvu zikurikira:

- Niba ibibazo, impungenge cyangwa ibirego byawe bitasubijwe mubushakashatsi,
- Niba utabashije kuvugana n'itsinda ry'ubushakashatsi,
- Niba wifuza kuvugisha undi muntu usibye itsinda ry'ubushakashatsi,
- Niba ufite ibibazo ku burenganzira bwawe nk'uwagize uruhare mu bushakashatsi
- Niba wifuza amakuru cyangwa gutanga umusanzu kuri ubu bushakashatsi.

Gushiraho X cyangwa igikumwe iruhande rwa buri ngingo bisobanuye ibi bikurikira:

● Wumvise ibikubiye muri iyi nyandiko.
● Wagize amahirwe yo kubaza ibibazo kandi wanyuzwe n'ibisubizo wahawe.
● Niba bikenewe, wafashe umwanya wo kuganira aya makuru n'abandi kugirango bagufashe guhitamo niba uzitabira.
● Uremera kugira uruhare muri ubu bushakashatsi ku bushake

_____ _____
Izina ryuzuye n'umukono w'umutangabuhamya Itariki n'aho byabereye

_____ _____
Izina ryuzuye n'umukono by'wasabye uburenganzira Itariki n'aho byabereye

Ndemeza ko nasomye kandi numvise ibikubiye muri iyi nyandiko yo kwitabira ubushakashatsi kubushake. Nagize amahirwe yo gusuzuma amakuru, kubaza ibibazo kandi nasubijwe neza. Ndumva ko umukobwa wanjye afite umudendezo wo kuva mu bushakashatsi igihe icyo ari cyo cyose, kandi ko nta ngaruka bizangiraho izo arizo zose.

Nemeje ko umukobwa wanjye yagira uruhare muri ubu bushakashatsi.

_____ _____
Izina ryuzuye n'umukono by'umubyeyi Itariki n'aho byabereye

Appendix 3: Information and Assent Form.

Appendix 3.1: English version.

Participant ID: _____

Project title: Assessing the usage of menstrual hygiene management services and its impact on adolescent girls' school attendance in 4 districts (Rutsiro, Karongi, Nyamagabe, and Nyaruguru) In Rwanda

Study population: Schoolgirls aged 10-19 years, who attend schools with WFPs HGSF program.

Version date: 02/04/2021

Principal Investigators:

Carolyn Aling, student MGHD program,

Bilquees Idrees, student MGHD program,

About this consent form

Dear students,

We invite you to take part in a research study being conducted by Carolyn Aling and Bilquees Idrees who are students at University of Global Health Equity, Butaro, as part of their research project "Assessing the usage of menstrual hygiene management services and its impact on adolescent girls' school attendance". The study, as well as your rights as a participant, are described below.

Description: Before joining the survey, you must understand and take into consideration the contents of this form, since it contains important information to assist you in deciding whether to participate or not.

This study is designed to solicit your opinions on the "Girls sanitary rooms" in your school. The information you provided will help us to recommend better facilities for girls in the school. The findings will also be distributed and can be used as a stepping stone for further research.

Participation is voluntary:

It is your choice whether you will participate in this survey or not. If you choose to participate, you may change your mind and can leave the survey at any time. Refusal to participate or stop participation will involve no penalty or loss of benefits to which you are otherwise entitled.

What should you know about this research study?

The school girls age 10 - 19 will be the part of this study and we will ask about the level of usage of the girls' sanitary rooms as well as factors affecting the usage.

What is the purpose of this project?

The purpose of this study is to understand the impact that sanitary rooms have on school attendance of girls aged 10-19 and experience of menstruation and the level of usage of sanitary rooms together with factors affecting it.

How many participants will take part in this research?

Approximately 630 school girls will take part in this research.

What is the procedure for participation in this project?

Parents/guardians will give consent for their daughters to participate in the study. Participants will give assent and anonymity will be emphasized at all points of the study. The data collection will occur in designated classrooms within the selected schools. Female data collectors will facilitate the process and the principal investigators will supervise. The questionnaire will take 20 minutes to fill. Data collection will be done in June 2021.

What are the possible risks or discomforts related to taking part in this project?

There is no known risk associated with participating in this study. The participants may experience some emotional distress due to the sensitive nature of the topic. The participants will be informed of their anonymity.

What are the possible benefits of taking part in this project?

The is no direct benefit of participating in this study. However, there is an indirect benefit as the information collected can help improve the menstrual hygiene services offered in schools for girls.

Will I be compensated for participating in this research?

No, there will be no compensation for participants in this research.

What will I have to pay for participating in this research?

It will not cost anything for your daughter to participate in this research.

Can my taking part in the research end early?

You may decide that you may not continue in the research at any time without it being held against you. If you decide that you will leave, contact the principal investigator.

If I take part in this project, how will my privacy be protected? What happens to the information you collect?

All information collected will be deidentified and will be stored on a password protected computer only accessible to the research team. Research results will not contain any names or personal identifiers.

Data collected may be seen by the UGHE Institutional Review Board (IRB) that oversees the research. We may also share your information related to this study with other parties including translators, transcribers, thesis committee.

If I have any questions, concerns, or complaints about this project, who can I talk to?

The researcher for this study is Carolyn Aling' and Bilquees Idrees who can be reached +250780021948,

carolyn.aling@student.ughe.org,

bilquees.idrees@student.ughe.org

If you need more information about the study and clarification, if you feel harmed in any way, please contact the IRB.This research has been reviewed by the University of Global Health Equity Institutional Review Board. If you wish to speak with someone from the IRB, please contact the IRB at irb@ughe.org, telephone: 0788316894 or Office of Human Research Administration (OHRA) at Kigali Heights Building, 5th floor, Kacyiru, Kigali, P.O. Box 6955, Rwanda, for any of the following:

- If your questions, concerns, or complaints are not being answered by the research team;
- If you want to talk to someone besides the research team;
- If you have questions about your rights as a research participant, or;
- If you want to get information or provide input about this research.

Statement of assent

Signing an X next to each statement and your fingerprint below indicates that:

- You have understood the content of this form;
- You have had the opportunity to ask questions and received answers that were satisfactory;
- If needed, you took time to discuss this information with others to help you decide whether to participate;
- You agree to participate in this research project.

_____ _____

Full name and signature of the witness Date and location

_____ _____

Full name and signature of the person Date and location

requesting assent

I have read the information in this assent form including risks and possible benefits. All my questions about the research have been answered to my satisfaction. I understand that I am free to withdraw at any time without penalty or loss of benefits to which I am otherwise entitled.

I assent to participate in the study.

SIGNATURE

Appendix 3:2: Kinyarwanda version.

Umubare uranga umuntu**:** _____

Umutwe w'ubushakashatsi: Gusuzuma ikoreshwa rya serivisi z'isuku yerekeye imihango, n'ingaruka yazo ku kw'itabira ishuri kubakobwa mu turere tune two mu Rwanda (Rutsiro, Karongi, Nyamagabe, and Nyaruguru).

Abarebwa n'ubushakashatsi: abarebwa n'ubushakashatsi ni abakobwa bitabira ishuri bari hagati y'imyaka 10-19, biga mu bigo by'ishuri WFP HGSF ikoreramo.

Abakarani b'ubushakashatsi:

Carolyn Aling, student MGHD program, umunyeshuri wiga mubijyanye no gutanga ubuzima ku isi muri kaminuza ya Global Health Equity (UGHE)

Bilquees Idrees, student MGHD program, Umunyeshuri wiga mubijyanye no gutanga ubuzima ku isi muri kaminuza ya Global Health Equity (UGHE)

Ibijyanye niyi nyandiko yo kwemera

Banyeshuri,

Tubatumiye mu kwitabira ubushakashatsi buri gukorwa na Carolyn Aling na Bilquess Idrees ababanyeshuri muri kaminuza ya Global Health Equity (UGHE), mu bushakashatsi bwabo "gusuzuma ikoreshwa rya serivisi z'isuku yerekeye imihango, n'ingaruka yazo mu kw'itabira ishuri kubakobwa mu turere tune two mu Rwanda (Rutsiro, Karongi, Nyamagabe, na Nyaruguru)". Iyi nyandiko ikubiyemo ibirebana n'ubushakashatsi, n'uburengazira bwawe.

Ibisobanuro: Mbere yo kwinjira muri ubu bushakashatsi, ukwiriye gusobanukirwa no kwumva ibiri muri iyi nyandiko, kuko bifite amakuru y'ingenzi yo kugufasha guhitamo niba wa kwitabira ubu bushakashatsi. Ubu bushakashatsi bugamije kumenya ibitekerezo byawe kubijyanye n'icyumba cy'isuku' mu ishuri wigamo. Amakuru azavamo azifashishwa mu gutanga ibitekerezo byo kunoza icyumba cy'isuku cy'abakobwa mu mashuri. Ibyagaragaye kandi bizasangizwa n'abandi bakora ubushakashatsi bikaba byazanifashwishwa mu bundi bushakashatsi.

Uruhare ni ubushake.

Ni ubushake kwemeza niba wajya mu bushakashatsi cyangwa se ntubujyemo. Mu gihe wahisemo kwitabira ubushakashatsi, ufite umudendezo wo kwisubiraho ugahagarika ukwitabira kwawe. Kwanga kwitabira cyangwa guhagarika uruhare rwawe nta ngaruka izo arizo zose bizagira yaba ku mubano ufitanye n'ishuri wigamo cyangwa se izindi serivisi izo arizo zose ugomba guhabwa.

Ni iki ukwiye kumenya kuri ubu bushakashatsi?

Abanyeshuri b'abakobwa bafite hagati y'imyaka 10-19 nibo bazashyirwa muri ubu bushakashatsi, babazwe kubijyanye n'imikoreshereze y'icyumba cy'isuku" n'ibituma bagikoresha cyangwa se batagikoresha.

Intego y'ubu bushakashatsi ni iyihe?

Intego y'ubu bushakashatsi ni ugusuzuma imikoreshereze y'ibyumba by'isuku by'abakobwa, ibituma bakoresha ibyumba cyangwa se batabikoresha ndetse n' ingaruka ibyumba by'isuku mu mashuri byagize ku kw'itabira ishuri ku bakobwa bari hagati y'imyaka 10-19.

Ubushakashatsi buzitabirwa n'abantu bangahe?
Ugereranyije, abakobwa 630 nibo bazitabira ubu bushakashatsi.

Ubushakashatsi buzitabirwa mu buhe buryo?
Ababyeyi/ abarinzi bazatanga uburengazira kugira ngo abakobwa babo bitabire ubushakashatsi. Abitabiriye ubushakashatsi bazemeza kujyamo kandi kugirirwa ibanga bizitabwaho by'umwihariko. Amakuru azafatirwa mu byumba bitandukanye by'amashuri, ahantu hihereye. Abakarani b'ubushakashatsi b'abagore nibo bazafasha gukurikirana no kugenzura iki gikorwa. Ibibazo bizafata iminota 20 gusubizwa. Amakuru azakusanywa muri Kamena 2021.

Ni izihe ngaruka zishobora kubaho zaturuka mu kugira uruhare muri ubu bushakashatsi ?
Nta ngaruka zizwi zaturuka mu kwitabira ubu bushakashatsi. Gusa abazitabira ubu bushakashatsi bashobora kumva batisanzuye mu gihe babazwa ibibazo bigendanye n'imihango. Abitabira bazizezwa kugirirwa ibanga mu buryo bwose.

Ni izihe nyungu zishoboka zo kugira uruhare muri ubu bushakashatsi?
Umusanzu wo kuba wakwitabira ubu bushakashatsi ni ugufasha mu kunoza serivisi z'icyumba cy'isuku ku bakobwa mu mashuri.

Nzahabwa ingurane yo kuba umukobwa wanjye yitabira ubu bushakashatsi ?
Kwitabira ubushakashatsi ni kubushake ; ntangurane ziteganyijwe kubwo kwitabira ubu bushakashatsi.

Nzagomba kwishyura iki kugira umukobwa wanjye yitabire ubu bushakashatsi?
Ntacyo bizagusaba kugirango ugire uruhare muri ubu bushakashatsi.

Uruhare rwanjye muri ubu bushakashatsi bushobora kurangira hakiri kare?
Ufite umudendezo wo kwisubiraho ugahagarika uruhare rwawe muri ubushakashatsi igihe icyo aricyo cyose ubishakiye kandi nta ngaruka n'imwe bizakugiraho yaba wowe ubwawe cyangwa se ababyeyi bawe yaba ku mubano ufitanye n'ishuri cyangwa se ibindi ugomba guhabwa. Uhisemo guhagarika uruhare rwawe, wabimenyesha umushakashatsi mukuru mu gihe bishoboka.

Ninitabira ubu bushakashatsi, ubuzima bwanjye bwite buzarindwa bute? Bigenda bite ku makuru azakusanywa?

Amakuru yakusanyijwe azabikwa mububiko bwizewe bushobora kugerwaho gusa n'itsinda ry'ubushakashatsi kuri mudasobwa ya UGHE ifite ijambo ryibanga. Amakuru yakusanyijwe ntazaba afiteho amazina n'ibindi bikuranga.
Amakuru yakusanyijwe ashobora kubonwa n'ikigo gishinzwe gusuma ubushakashatsi muri kaminuza yigisha ibyo ubuzuma rusange ku isi (UGHE Institutional Review Board (IRB). Ikindi kandi, dushobora kandi gusangira amakuru yawe ajyanye n'ubu bushakashatsi nandi matsinda arimo abasemuzi, na komite ishinzwe amasomo.

Niba mfite ibibazo, impungenge, cyangwa ibirego bijyanye n'ubu bushakashatsi, ninde navugana nawe?
Abashakashatsi bakuru muri ubu bushakashatsi ni Carolyn Aling na Bilquees Idreess, wabavugisha kuri numero +250780021948
carolyn.aling@student.ughe.org,
bilquees.idrees@student.ughe.org

Ubu bushakashatsi bwagenzuwe na UGHE IRB. Mugihe wifuza kuvugana n'ikigo gishinzwe kugenzura ubushakashatsi IRB, wabandikira kuri irb@ughe.org, cyangwa ugahamagara telephone: 0788316894 cyangwa ukagera ku cyicaro gikuru mu nyubako ya Kigali Heights, Inzu ya 5, Kacyiru, Kigali, Agasanduku k'iposita 6955, Rwanda. Ku mpanvu zikurikira:

- Niba ibibazo, impungenge cyangwa ibirego byawe bitasubijwe mubushakashatsi,
- Niba utabashije kuvugana n'itsinda ry'ubushakashatsi,
- Niba wifuza kuvugisha undi muntu usibye itsinda ry'ubushakashatsi,
- Niba ufite ibibazo ku burenganzira bwawe nk'uwagize uruhare mu bushakashatsi
- Niba wifuza amakuru cyangwa gutanga umusanzu kuri ubu bushakashatsi.

Gushiraho X cyangwa igikumwe iruhande rwa buri ngingo bisobanuye ibi bikurikira:

● Wumvise ibikubiye muri iyi nyandiko.
● Wagize amahirwe yo kubaza ibibazo kandi wanyuzwe n'ibisubizo wahawe.
● Niba bikenewe, wafashe umwanya wo kuganira aya makuru n'abandi kugirango bagufashe guhitamo niba uzitabira.
● Uremera kugira uruhare muri ubu bushakashatsi ku bushake

_____ _____
Izina ryuzuye n'umukono w'umutangabuhamya Itariki n'aho byabereye

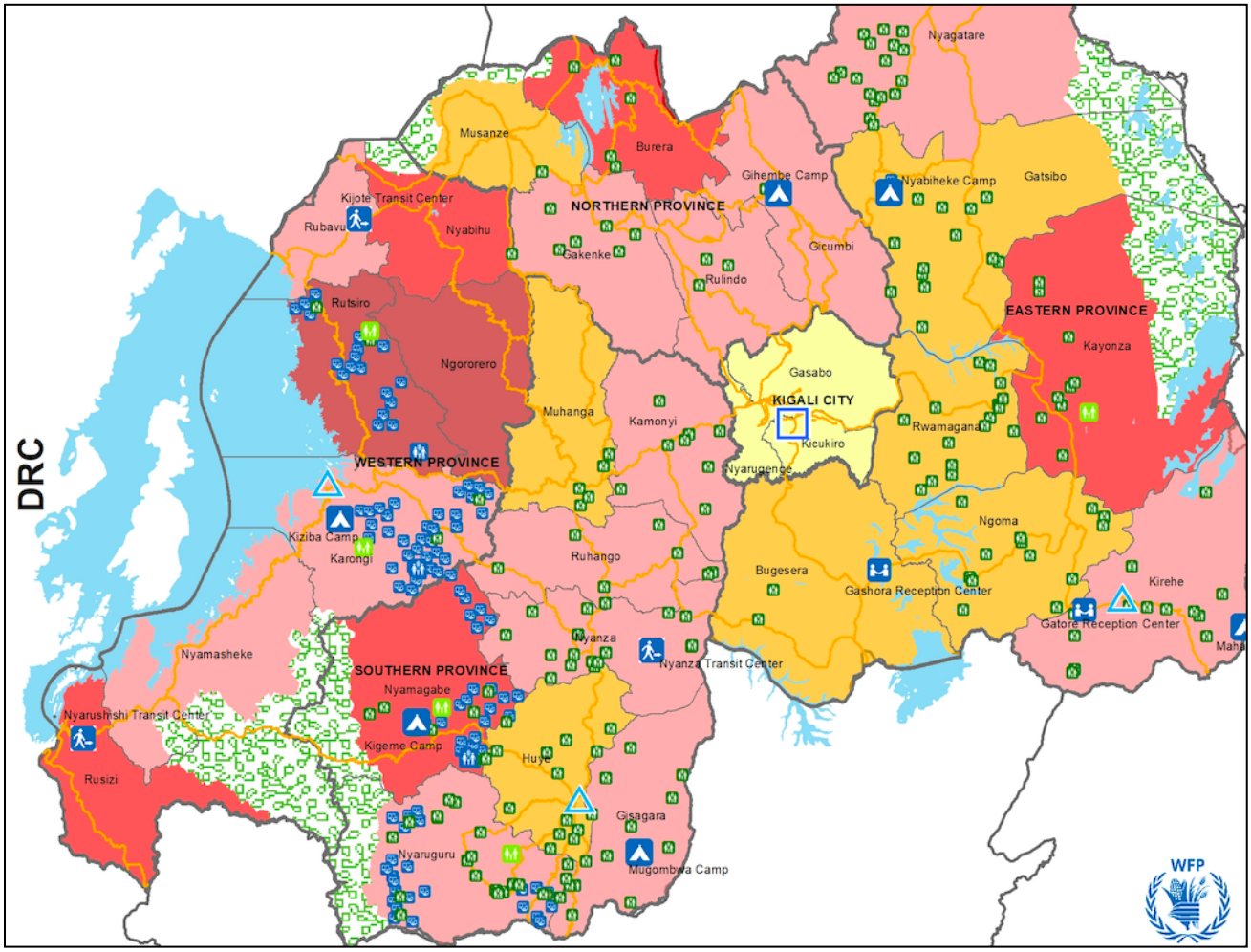
_____ _____
Izina ryuzuye n'umukono by'wasabye uburenganzira Itariki n'aho byabereye

Ndemeza ko nasomye kandi numvise ibikubiye muri iyi nyandiko yo kwitabira ubushakashatsi kubushake. Nagize amahirwe yo gusuzuma amakuru, kubaza ibibazo kandi nasubijwe neza. Ndumva ko mfite umudendezo wo kuva mu bushakashatsi igihe icyo ari cyo cyose, kandi ko nta ngaruka bizangiraho izo arizo zose.

Nemeye kugira uruhare muri ubu bushakashatsi.

_____ _____
Izina ryuzuye n'umukono by'by'umunyeshuri Itariki n'aho byabereye

Appendix 4: WFP Rwanda Operations



WFP Operations (Last updated March 2020)

- Country office
- Field office
- Reception center
- Refugee camp
- Transit center
- New Integrated Rural Development Project / FFA 2020
- Farmer Organization
- Integrated Rural Development / FFA
- School feeding

Appendix 5: UGHE IRB Decision Letter

University of Global Health Equity Institutional Review Board
Academic Ethics Review

Notification of Approval

Ref: UGHE-IRB/2021/036

May 8, 2021

Protocol Title:	Assessing the usage of menstrual hygiene management services and its impact on adolescent girls' school attendance in four districts (Rutsiro, Karongi, Nyamagabe, and Nyaruguru) in Rwanda.
Principal Investigator(s):	Carolyn Aling, Bilquees Idrees, Sarah Cruz, Amy Blauman, Dieudonne Hakizimana
Protocol #:	139
Funding Source:	UGHE
Initial IRB Review Date:	April 20, 2021
Initial Review Type:	Full review
Additional Review Dates:	May 07, 2021
IRB Review Action:	**Approved**
Effective Date:	May 7, 2021
Expiration Date:	May 6, 2022

Dear Carolyn Aling and Bilquees Idrees

On May 7, 2021, the University of Global Health Equity Institutional Review Board (UGHE IRB) approved this resubmission with modifications review. **Please note that the approval for this protocol will lapse after one (1) year and must be renewed according to the procedures of the UGHE IRB.**

The IRB reminds you that you are responsible for fulfilling the following requirements:

- Changes, amendments, and addenda to the protocol or consent form (if applicable) must be submitted to the committee for review and approval, prior to activation of the changes.
- Only approved consent forms are to be used for the enrollment of participants.
- All consent forms signed by subjects must be retained on file, and are submitted to inspection, along with other project materials, during routine onsite visits or audits.
- Failure to submit an application for continuing review will result in the suspension or termination of the study.
- The UGHE IRB must be notified at the closure of the study.

Please contact the UGHE IRB via email at irb@ughe.org with any questions.

Sincerely,

Daniel Seifu, IRB Chair

Appendix 6: WFP letter to mayors

United Nations RWANDA
Unity in Diversity

WFP
wfp.org

Ref: No 2231

Kigali, June 1st 2021

District Mayors (Karongi, Nyamagabe, Nyaruguru and Rutsiro districts)

RE: Deworming and Menstrual Health Hygiene surveys in WFP's Home-Grown School Feeding Activities

Dear Sir,

As you are aware, WFP is implementing a home-grown school feeding (HGSF) project implemented in partnership with MINEDUC, World Vision, Gardens for health International and districts under USDA funding, in Nyaruguru and Nyamagabe districts in the South and Rutsiro and Karongi in the West. The HGSF Programme supports around 81,000 primary students annually across 107 schools. Children in the South receive a daily hot meal whereas students in the western province are provided a porridge meal. As a contribution to the project, some schools occasionally provide locally grown vegetables to enrich the meals. The programme also undertakes activities to improve student literacy outcomes, increased use of health and dietary practices, including WASH, setting up school gardens, providing deworming medication and supporting the strengthening of government staff capacities.

WFP is planning to conduct two research studies on the National Deworming Program and Menstruation Health Hygiene in the 4 districts in partnership with the University of Global Health Equity (UGHE). The aim of the studies will be to collect information on the status and progress of the Deworming and Menstrual Hygiene programmes as it relates to project goals and objectives. Results from these two studies will inform best practices for continued successful implementation of the programme and inform the government's ongoing roll-out of the school feeding programme through MINEDUC.

The survey will be conducted by two student teams from UGHE as well as 12 WFP enumerators under supervision of WFP staff. For the study on the deworming program, quantitative data on Knowledge, Attitude and Practice (KAP) will be collected from 13 schools in Nyamagabe and 12 schools in Rutsiro as well as community health workers within 34 cells in both districts. In addition, qualitative data on the experiences of local leaders on the deworming program will be collected at village level. This study is expected to start from June 7th to July 02nd July 2021. For the Menstrual Hygiene study, quantitative data will be collected from a total of 21 schools (Karongi- 8, Rutsiro- 5, Nyaruguru- 6 and Nyamagabe- 2). It is expected to start on 7th of June and end on 24th of June.

I am hereby requesting your authorization and collaboration for a successful exercise.

Thank you for your continued support.

NATIONS UNIES
ADMINISTRATION DU PAM
WFP
TEL:58763 1-15
FAX:58763 6-20-21
B.P.:1150 KIGALI
PROGRAMME ALIMENTAIRE MONDIAL

Yours Sincerely,

Edith Heines
Country Director
United Nations World Food Programme

CC: - Director General for Education Policy Analysis
- Director General RBC

United Nations RWANDA
Unity in Diversity

WFP
wfp.org

Annex 1

List of enumerators

Nº.	Names	Telephone number	National ID/Passport Nº
1	Ajeneza Batamuliza Anitha	0783187960;	1198870017094375;
2	Berekikuzo Iyibukiro Confiance	0787461744;	1199670043407140;
3	Dusabe Claire	0782134686;	1198770173855047;
4	Mukarurangwa Triphine	0785295529	1199070144191070;
5	Mvunabo Gratien	0788565784;	1196780033106017
6	Nshimiye Eric	0788455355;	1198380003705189;
7	Nsinga Samuel	0788630356;	1198280010058007;
8	Uwababyeyi Marie Grace	0789349681;	1198870029863049;
9	Nyiracumi Regine	0787337915;	1199670069640004;
10	Uwamahoro Diane	0783420951;	1198970085726136;
11	Uwihanganye Jean Claude	0785528733;	1198780024571300;
12	Uwimana Fridah	0788453372;	1198570016188177;

List of UGHE Students

Nº.	Names	Telephone number	National ID/Passport Nº
1	Fernand Rwamwejo	0783777496	1199180004706086
2	Madalitso Ireen Mkata	+265991229703	MA604018
3	Iliza Ndatinya Grace	0787771404	1199670131439292
4	Carolyn Aling'	0780021948	AK0204491
5	Bilquees Idrees	+923330135509	BJ1426421