

**KNOWLEDGE, ATTITUDES AND PRACTICES ON MENSTRUAL HYGIENE  
MANAGEMENT BY SCHOOL GOING GIRLS IN MULUNDI SUB-LOCATION,  
KITUI COUNTY, KENYA**

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**A Thesis Submitted in Fulfillment of the Requirement for the Degree of Master of  
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**DECLARATION**

I understand that plagiarism is an offense and I, therefore, declare that this thesis is my original work and has not been presented to any other institution for any award.

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(Psalms 138:8)

## **DEDICATION**

This thesis is dedicated to my beloved family members who have been very supportive and patient with me during my period of study.

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## **ACRONYMS AND ABBREVIATIONS**

<b>FGDs</b>	:	Focus Group Discussions
<b>KIISs</b>	:	Key Informant Interviews
<b>MDG</b>	:	Millennium Development Goals
<b>MOH</b>	:	Ministry of Health
<b>MHM</b>	:	Menstrual Hygiene Management
<b>MHPs</b>	:	Menstrual Hygiene Products
<b>SDG</b>	:	Sustainable Development Goals
<b>SEHSS</b>	:	School of Education, Humanities and Social Sciences
<b>SPSS</b>	:	Statistical Package for the Social Sciences
<b>UN</b>	:	United Nations
<b>UNESCO</b>	:	United Nations Educational, Scientific and Cultural Organization
<b>UTIs</b>	:	Urinary Tract Infection
<b>UNICEF</b>	:	United Nations Children's Fund
<b>WASH</b>	:	Water, Sanitation and Hygiene
<b>WHO</b>	:	World Health Organization

## DEFINITION OF TERMS

- Menstruation:** Normal vaginal bleeding or discharge of blood mucosal tissue from the uterus and vagina that occurs as part of a woman's monthly biological cycle.
- Menarche:** The first menstrual period, or the first menstrual flow signifying the transition from childhood to womanhood.
- Taboos:** Behaviour or action that is taken to be contrary to social-cultural values which are believed to be punishable if punishable violated.
- Menstrual:** Series of natural changes in hormone production and the structures of the uterus.

## ABSTRACT

Menstruation is an unescapable important and normal part of human life. Despite menstruation being an advent of maturity and fertility in girls, menstrual hygiene management (MHM) has been perceived as taboo in different societies around the globe. Similar challenges have been reported in Africa by many scholars despite it being an integral part of the female gender. MHM remains unexplored among adolescent girls in Kenya, including Kitui County. The overall objective of this study was to examine knowledge, attitudes and practices associated with menstrual hygiene management in Mulundi sub-Location, Kitui County. The specific objectives were; to establish the knowledge school-going girls have on menstrual hygiene management in Mulundi sub-Location, Kitui County, to assess attitude towards menstruation among the school-going girls in Mulundi sub-Location, Kitui County and to examine the management practices associated with menstruation among school-going girls in Mulundi sub-Location, Kitui County. The study population encompassed 280-school going girls sampled from a target population of 900 girls using the Slovin 2013 equation. Probability sampling was employed within four (4) primary schools and three secondary schools. Seven (7) key informants, who served closely with matrons, were also involved in the study. Qualitative and quantitative data collection tools including questionnaires, focused group discussions and key informant interviews were employed to collect data. The quantitative data was analyzed using SPSS according to the study objectives. The qualitative data was reported as verbatim quotes which suggest negative attitudes and stigma among the girls who participated in the study. Quantitative data was presented in tabular form as numerals some expressed as percentages. The study findings show that (95) 68 % of the sampled girls were knowledgeable on matters of MHM. The study findings show that a percentage of 39.1% of the information on menstrual hygiene came from parents. Teachers also played a role as they contributed 33.2 % in terms of availing knowledge on menstrual-related issues to students. The results also indicate that 70 % of the girls had a negative attitude towards menstrual flow. Menstrual management practices among the studied girls were still unsatisfactory, as 51% could not afford to buy sanitary pads. A sample constituting 61% (85) reported challenges of WASH facilitates. The study recommends the inclusion of compulsory lessons to tackle menstruation-related issues including menstrual hygiene, attitude and pre-menarche information for the girls who are yet to experience the biological process. The study further recommends education on menstrual-related lessons to boys to minimize teasing and stigma index to girls.

## CHAPTER ONE

### 1.0 INTRODUCTION

#### 1.1 Background of the Study

Male and female development stages are similar except for distinct changes, which occur in the adolescent stage. Females undergo menstruation as an indicator of transition from childhood to womanhood. This transition is marked by an important stage known as Menarche (Dhingra *et al.*, 2009). After attainment of this stage till menopause, reproductive health and menstrual hygiene are significant aspects to the well-being of females. From menarche onwards, due to sensitivity and the physical aspect of menstruation, physical, psychological or social problems may result from the girl while others may be due to external factors. Whether internally or externally instigated, some challenges and experiences more so psychological may have a long-term impact on the future of the female child depending on the perception, which varies with the socio-cultural background.

Menstruation is a normal biological process that occurs within a human life span between menarche and menopause and is a key sign of reproductive health. It signifies normal biological body functioning in females between puberty and menopause as it suggests the body is capable of reproducing. On average, menstruation in most women takes 3-5 days. Menstruation is an indicator that the body is ripe for potential pregnancy (Schuiling & Likis, 2013). The onset and the entire period during menstruation form part of the regular monthly menstrual cycle.

The menstrual cycle consists of four phases; the follicular phase, ovulation, luteal phase and menstruation, which is of major concern in this work due to its physical aspect and negative perception in some community settings. Though menstruation associated characteristics vary from one female to another, common symptoms include; uterine cramping, bloating, mood swings, irritability, headache, tiredness and low back pains (Ellerbrock *et al.*, 1996).

Despite menstruation being a key health indicator, its perception varies regionally depending on the culture, and the level of literacy on the subject, which consequently determines the management practices and the attitude associated with it. Inadequate knowledge in girls on menstrual hygiene management (MHM), coupled with negative stereotyped attitudes toward menstruation, has led to collisions in many communities like in Latin America (González-Becerra et al., 2019).

Inadequate menstrual knowledge has influenced the lives of girl children negatively by lowering self-esteem for teenagers within that window. Low self-esteem affects their intrinsic perception of menstruation leading to a sub-optimal performance in academic systems, school absenteeism, domestic chores, and social life more so during the menstrual flow. Therefore, menstrual hygiene management is a requisite to establish the current menstrual landscape (Ngugi, 2014 #5; Tegegne, 2014 #4).

Menstrual hygiene management refers to the management of hygiene associated with the menstrual process by use of products, which are meant to absorb or collect the flow of blood during menstruation, privacy and access to facilities to dispose off used menstrual management practices. Menstrual hygiene management reduces women's susceptibility to urinary tract infections (UTIs) and other genital contagious ailments due to improper sanitation {Komala, 2013 #96}. Management practices depend on the culture and social taboos of a particular community setting. Menstrual health management has been globally challenged by inappropriate and inadequate facilities around the world with research reporting that at least 500 million women and girls globally have no convenient access to menstrual hygiene management facilities (Adinma & Adinma, 2008; Crichton, Okal, Kabiru, & Zulu, 2013; Crofts & Fisher, 2012; Sommer & Sahin, 2013).

A study by UNICEF on knowledge of menstrual hygiene reveals that 1 out of 3 girls in South Asia knew nothing about menstruation before the commencement of the biological process while 48% of girls in Iran and 10% in India believe that menstruation is a disease (Khanal, 2019). Elío, Crowley, Scanlon, Hodgson, and Zgaga (2018) noted that 67.5% of

junior high school adolescent girls in Ghana had adequate knowledge of menstrual hygiene management.

A study on menstrual knowledge in secondary 12 secondary schools in Tanzania reveals that 12% of the school-going learners lacked pre-menarche knowledge as their curriculum doesn't include menstrual knowledge. The teenage girl's respondents cited their mothers as their main source of menstrual knowledge contributing 44.4% of their menstrual knowledge before menarche. Menstrual knowledge contribution by information from their sisters before menarche was 25.1%. The study recommended the inclusion of menstrual information in the secondary school curriculum to prepare girls well before menarche which will prepare them well psychologically (Guya, Mayo, & Kimwag, 2014).

In Northeast Ethiopia, similar studies on school-going adolescent girls reveal average know-how on menstrual knowledge with 51% of the sampled population revealing accurate knowledge of menstrual as a physiological process before the menarche. Menstrual-related challenges including low accurate knowledge were cited as the main reason for school absenteeism. The main source of menstrual knowledge to the sampled population was their sisters contributing 42.68% of the total information. The study recommended the need to enlighten the girl's mothers on menstrual issues and strengthen the mother-daughter relationship for accurate information cascade and early preparation of girls with expectations (Tegegne & Sisay, 2014).

In Uganda, a girl is believed to be mature and ready for marriage if she experiences her first menstruation. Such misinformation has had ramifications on the health and dignity of girls and women (Naughton, Pena Pereira Weiss, & Vargas-Ramirez, 2017). Inadequate know-how on the subject has contributed to poor menstrual hygiene management and again those that seem to have good knowledge tend to practice wrong menstrual hygiene practices (Chandra-Mouli & Patel, 2020).

Further literature in the Kenyan context, studies in Maasai and Kalenjin communities show that most adolescent girls have many misconceptions and inaccurate knowledge about



menstruation. Among the pastoral community in Mashuru sub-County, Kajiado County, Kenya 45.5 % had diverse views on menstruation. A percent constituting 26.6% had no accurate knowledge and thought that it was a curse. However, over 50% knew the menstrual blood was from the uterus. The larger population who were knowledgeable about menstruation knew about it before menarche (Korir, Okwara, & Okumbe, 2018).

In Western Kenya, due to neglect of menstrual hygiene management notably knowledge and management, there have been health risks including vaginal infections and sanctions such as stigma and shame making many adolescent girls uncomfortable, insecure and ashamed in managing their menstruation (Phillips-Howard et al., 2015). This compels a majority to observe MHM with anxiety and silence.

Studies on adolescent among girls in Tharaka Nithi County reveals three channels for the conveyance of the information which was termed biased. Most teenage girls out of a sample size of 29 with an average of 15.4% reported that they survived with scanty data from formal and non-formal settings. Generally, there was no stratified channel for conveying the information which the researcher recommends (Secor-Turner, Schmitz, & Benson, 2016).

Limited information and inadequate education on menstrual management, especially among adolescent girls (age 13-19 years), have remained a challenge. These challenges have been bred by a lack of comprehensive curriculum and syllabus among many primary and secondary levels in Kenya to facilitate education on menstrual hygiene and management (Girod, Ellis, Andes, Freeman, & Caruso, 2017).

A literature review on the attitude toward menstrual subjects has been done in Sierra Leone. The study findings reveal that they believe that one can become sterile if their used menstrual cloth is seen by others (Crofts & Fisher, 2012). Boakye-Yiadom et al. (2018) in a study conducted in Ghana noted that 13.6% of junior high school adolescent girls (about a tenth) had a positive attitude towards menstrual hygiene management. In Jewish and Hindu communities, menstruating women are considered unclean and systematically

excluded from participating in everyday activities such as education, employment, and cultural and religious practices (Kaundal & Thakur, 2014). In Zimbabwe, girls in their menses are not allowed to cook (Ndlovu & Bhala, 2016) whereas, in Mali, the Dogon people exclude women and girls for at least five days in menstrual huts as they are considered impure during their menstruation (Crofts & Fisher, 2012).

Gauteng community in South Africa believe that blood from menstruation is harmful to men and may affect negatively the fertility for some domestic animals and some crops (Buckley & Gottlieb, 1988). Kitooro community in Entebbe sub County in Uganda perceive menstruation negatively with misguided beliefs about women and girls barring them from drinking milk from cows so that cows don't produce bloody milk (Stene-Johansen et al., 2007). Menstrual health management surveys in Northern Tanzania show that some people believe that one might be cursed if a menstrual clothe is seen by others (Crofts & Fisher, 2012).

A study conducted on school-going children in Bungoma district Kenya reports that menstruation is not a private affair thus the girls become stigmatized and uncomfortable during the menstruation period (F. Lukalo, 2010).

The inconsistencies in study reports on menstrual-related attitudes from various regions spurred the need to research to establish the attitude of school-going girls in Mulundi sub-Location using descriptive research design. Management practices have been seen to vary among school-going girls with the region, education level of the next of kin, social-economic status, religious affiliation and cultural background. A study in the United States by Plan International reveals that 17.6% of the school-going girls aged between 18–25 years were not able to access menstrual health products MHPs. A sample constituting 92.35% needed menstrual hygiene products while at school while 42.13 % of the respondents attended schools which supplied the MHPs for free. A further sample of 12.7% of the sampled learners missed or went to school late or left early to manage their menstruation. Absenteeism hampered learning significantly which was attributed to an

inability to purchase sanitary wear (Austrian, Kangwana, Muthengi, & Soler-Hampejsek, 2021).

Further, studies were conducted among indigenous adolescent girls in Aboriginal and Torres Strait Islander Peoples in Australia. The study highlights that Menstrual Health Hygiene presents challenges to high-income countries, particularly among under-represented populations, such as Indigenous Australians. (Krusz et al., 2019).

The various surveys around the globe on menstruation, its management, and hygiene in different social settings get different attention and perception. Surveys done in Asian and African countries show that certain tribes isolate menstruating girls in huts to avoid menstrual blood from polluting the environment for example in Nigeria and Ethiopia. This creates skepticism and fear in girls limiting their participation in public spheres (Ngugi & Nyaura, 2014; Stene- Johansen et al., 2007).

The prevalent challenges reported pertaining to management practices by women and girls in Africa includes inadequate water, sanitation and hygiene (WASH) facilities, particularly in public places, such as schools, workplaces or health centre (Naughton et al., 2017). The lack of separate toilets with doors that can be safely closed, or the unavailability of means to dispose of used sanitary pads and water to wash hands, means that women and girls face challenges in maintaining their menstrual hygiene in a private, safe and dignified manner (Crofts & Fisher, 2012).

Further, literature reveals that in most schools especially in the informal settlements and rural areas in Africa, girls face an unsupportive social and physical environment due to insufficient water, sanitation and hygiene (WASH) facilities to properly manage menses or proper student/teacher codes of conduct to protect girls from bullying and teasing (Crichton et al., 2013) A growing body of evidence in the Entebbe sub-district, a peri-urban area in Wakiso district, Uganda shows that girls' inability to manage their menstrual hygiene in schools results in school absenteeism, which in turn, has severe economic costs on their lives and the Country (Miiró et al., 2018).

In Kenya, a study conducted in Nairobi reveals inadequate access to proper menstrual management materials including WASH facilities and painkillers to manage accompanying pains for some learners (Crichton et al., 2013). Consequently, menstrually associated outcomes such as pain, irregular school attendance, and engagement in educational activities in an informal settlement report challenge management (Girod et al., 2017). When girls experience menstruation without adequate facilities, information or materials to manage their menses at school, they become distracted and unable to concentrate. As a result, girls stop participating in class, isolate themselves or become socially excluded by peers. Some even skip school altogether (Ch et al., 2018).

A survey on management practices associated with menstruation management in Siaya district Kenya reveals a range of challenges facing girls at the puberty stage (Nyothach *et al.*, 2015). These challenges include inadequate water and sanitation facilities at school, limited access to effective hygienic materials for menstrual management and inaccurate information about menstruation and the biology of puberty (Clifford Oduor, Nyothach, Oruko, & Alexander, 2014). Reports about environmental pollution and degradation due to the unstructured disposal of used sanitary materials which at the individual level may lead to reduced personal confidence among the girls (Cliff Oduor et al., 2015).

National statistics in Kenya estimate that nearly 3.5 million girls miss learning days per month because of limited access to reliable hygienic sanitation and sanitary products (Jewitt & Ryley, 2014).for instance the evaluation of the status and availability of WASH facilities at home for school going girls in Gem sub-County, Siaya in Western Kenya reports that even though water is available in most of the households, basic WASH facilities such as detergent, latrines, sanitary materials and private rooms for changing were found to be insufficient.

A comparative qualitative study in schools in Nyanza Kenya showed that girls experienced limited access to appropriate materials and private space for MHM (Alexander et al., 2014). Further, local studies on menstrual hygiene management in Machakos County, report

challenges for school-going girls during the management of their menstruation (Crichton et al., 2013).

A similar study in Kangundo Machakos County reports inadequate WASH facilities in surveyed secondary schools (Mbula, 2013). Machakos County neighbors Kitui County and economically is well endowed compared to Kitui County (KNBS, 2019), a fact that provides good grounds for a similar study. Inadequate access to sanitary pads by girls in neighbouring counties of the same economic status impeding girls from consistently attending the learning institution has spurred this research in Kitui County, Mulundi sub-Location where the information on the subject is scanty.

## **1.2 Statement of the Problem**

Like in many regions in Kenyan rural and urban areas, there are common challenges that school-going girls experience during menstruation. However, the knowledge, attitude and practices on MHM particularly among school-going girls seem to vary based on socio-economic, cultural and regional factors (Sumpter & Torondel, 2013). Inadequate knowledge of menstrual hygiene management, and lack of appropriate facilities to manage and ensure privacy in changing menstrual materials have been cited in various regions of the World and Kenyan Counties including Bungoma, Nairobi, Kajiado, Nakuru and Machakos (D'Orsa, 2018). The lack of proper documentation on knowledge, attitude and management practices towards menstruation coupled with challenges associated with menstruation from global to neighbouring counties formed a strong basis for this research. This study sought to fill the gap on menstrual knowledge the school going girls in Mulundi sub- Location have which subsequently influences menstrual attitude and management practices among the school-going girls in Mulundi sub-Location in Kitui County.

## **1.3 Objectives of the Study**

### **1.3.1 Overall Objective**

The overall objective of this study was to examine knowledge, attitudes and practices associated with menstrual hygiene management in Mulundi sub-Location, Kitui County.

### **1.3.2 Specific Objectives**

This study was guided by the following specific objectives:

- i. To establish the knowledge school-going girls have on menstrual hygiene management in Mulundi sub-Location, Kitui County.
- ii. To assess attitude towards menstruation among the school-going girls in Mulundi sub-Location, Kitui County.
- iii. To examine the management practices associated with menstruation among school-going girls in Mulundi sub-Location, Kitui County.

### **1.4 Research Questions**

- i. What kind of knowledge do school-going girls have in Mulundi sub-Location about MHM?
- ii. What is the attitude of school-going girls in Mulundi sub-Location of Kitui County?
- iii. How do school going girls in the Mulundi sub-Location of Kitui County manage their menstruation?

### **1.5 Significance of the Study**

This study sought to establish the current knowledge, attitudes and practices on menstrual hygiene management among school-going girls in Mulundi sub-Location in Kitui County. The current landscape on knowledge, attitude and management practices by school-going girls is useful to the various stakeholders including, the school's management boards, teachers, parents and NGOs in case interventional measures are necessary.

In some cases, integral changes on their existing facilities such as latrines to accommodate the needs of menstruating girls may be necessary. The findings from the current study further contribute to new knowledge to one of the pertinent issues described in current policy documents including Kenya Environmental "Water Sanitation and Hygiene Policy" towards achieving Vision 2030 Social Pillar that focus on health, environment, Water, Sanitation and Hygiene (WASH) in Schools (WinS). The findings will contribute to the implementation of sustainable development goals like good health and wellbeing of the

school-going girls, gender equality through sensitization forums and curriculum revision to enhance knowledge and minimize negative attitudes.

### **1.6 Scope and Limitations of the Study**

This research examined the knowledge, attitude and practices of menstrual hygiene management among school-going girls in the Mulundi sub-Location of Kitui County. The target population constituted girls up to the age of 19 years who undertook their studies in secondary and primary schools in the Mulundi sub-Location of Kitui County. The qualitative and quantitative data collection was actualized through questionnaires and interview guides administered to a study population of 280 school-going girls arrived at using the equation suggested by Slovin 2013. Some respondents shied away from responding to some research questions due to social norms. Societal taboos and culture were key limitations to this research more during the data collection stage

## **CHAPTER TWO**

### **2.0 LITERATURE REVIEW**

#### **2.1 Introduction**

This chapter is a presentation of a review of literature on knowledge, attitude and menstrual hygiene management. The chapter focuses on knowledge of MHM among schooling girls, myths, taboos and perceptions about menstruation as a biological process. The literature on knowledge, attitude and menstrual management in schools has been reviewed from global to local and summarized per objective. The chapter also includes the conceptual and theoretical framework.

#### **2.2 Knowledge of Menstrual Hygiene Management**

The continued silence on the subject of menstruation in many cultures across the globe has led the United Nations to enshrine a concept known as menstrual hygiene management. A survey by Sommer indicates that menstrual hygiene management is a comprehensive approach, which encompasses the provision of reliable water, provision of private washrooms and materials like menstrual pads, and functioning toilets, as well as education for girls about safe hygiene practices during periods of menstruation. However, many countries across the globe struggle to avail pre-requisites for menstruating girls' welfare (Sommer, 2010).

In Latin America, many religious traditions perpetuate the idea that women are not clean during their time of menstruation, especially concerning sexuality females typically express fear, discomfort and shame. This vicious cycle of “misinformation and repression” limits the discussion around menstrual hygiene and ultimately sexual and reproductive health. Milagro (2019) mobilized a campaign to discuss commonly held myths in Latin America about menstruation. Nearly 50% of participants emphasized the need to share this information with daughters and young women and the campaign was considered positive and gave the participants an interaction platform leading to solidarity which fostered better advocacy for Menstrual Health Awareness, especially with young girls in the community and broke many menstruation taboos (González-Becerra et al., 2019).



Girls in India were not given much information on menstruation before menarche (Deo, 2005). Education initiatives after menarche mostly concentrate on the biological components of puberty and pay little attention to psychological requirements. Awareness campaigns are widespread but frequently fail to reach influencers and are restricted to product use. Up until adolescence, according to the data, girls and boys are generally on par. However, once puberty sets in, things start to diverge for females, and their mobility and agency are increasingly constrained. In India, more than 71% of girls are unaware that menstruation occurs before menarche. Menarche can surprise some females and is sometimes mistaken for an illness. Menstrual cycles are seen with shame, fear, and anguish in India. Numerous local studies have also revealed that menstrual females do not understand the biological causes of menstruation and believe that it is a "disease." (Bharatwaj, 2014; Deo, 2005).

In India, the majority of adolescent girls look to their female role models, mainly their moms, for guidance regarding menstruation. Mothers, on the other hand, are either unaware of or uncomfortable talking about menstruation; as a result, their counsel frequently focuses on period management and tends to support unfavorable stereotypes. Due in part to the lack of government mandates, the majority of girls do not consistently have access to information about puberty and menstruation. Teachers find the subject humiliating to address in a classroom, they are rarely educated, and as a result, they hardly ever teach it (Sharma, Malhotra, Taneja, & Saha, 2008). This is true even when schools do have programs in place.

Malian girls face challenges managing menstruation in schools due to inadequate information on the subject. The menstrual information is not publicly tackled due to cultural beliefs and taboos. Despite the need for a comfortable setting for talking about their needs and asking questions, girls in Mali are not in a position to start a conversation necessary to improve their ability to manage menstruation in school.

Literature reveals inadequate sharing of information between their kins specifically mothers and their friends. Statistics report only 50% had menstrual know-how before attaining menarche (TRINIES, CARUSO, SOGORÉ, TOUBKISS, & FREEMAN, 2015).

Due to several myths and superstitions, Ghanaian societies, particularly in rural regions, rarely discuss menstruation hygiene and puberty at home or in schools. This issue is more prevalent in settings that are more traditionally oriented and occasionally have lower levels of education, primarily because of cultural barriers that prevent the dissemination of the necessary knowledge to children on the subject. This has made it difficult for adolescent girls to receive adequate and correct information about maintaining excellent hygiene during their periods (Abanyie, Anang, & Boateng, 2016).

Utilizing cluster sampling methodologies, research on menstruation hygiene and management were conducted in 12 public and private schools in Tanzania. Surveys, Focus Group Discussions (FGD), and semi-structured interviews were used to gather the data. The results showed that the relevant institutions provided some form of MHM instruction to girls, and that 3 out of the 9 coed schools involved in the study did the same for boys. However, more girls required information on MHM and chose to acquire it from the school. The study's recommendations included creating a supportive atmosphere for MHM and including health education on MHM in both elementary and secondary school curriculum, with separate sessions for girls and boys (Kimwaga, Mayo, & Guya, 2014).

Teenage girls from a pastoral community in Kajiado County, Kenya, were the subjects of a study that revealed difficulties with menstrual hygiene management (MHM), particularly at school. A cross-sectional survey of primary school girls in Kajiado County was used in the study to evaluate the understanding of MHM among pastoralist community members. 51.6% were found to have moderate understanding about menstruation. But 45.5% of respondents reported having different opinions about menstruation. In order to ensure that parents and kids are knowledgeable about management techniques, the study advocated more research in rural settings and campaigns via multiple media, including school curricula (Korir et al., 2018). In Kitui County, information on menstrual hygiene

management more so on knowledge is missing and this study sought to establish the current knowledge on MHM in Mulundi sub-Location, Kitui County.

### **2.3 Attitude towards Menstruation among the School going Girls**

The attitude towards menstruation among school-going girls varies regionally, and the impact is heightened by the cultural systems in each context. Studies on attitude towards menstruation among school-going girls in India report shame associated with poor management, whether from stains or wearing absorptive materials improperly when accidentally seen. Most preferred using latrines or washrooms (enclosed bathing areas) to change their menstrual materials, as these facilities offered privacy (Thakre *et al.*, 2011). Teenage girls in rural India view menstruation as a sin or a curse from God, according to Dasgupta and Sarkar (2008). According to studies (Ahuja & Tewari, 1995; Khanna, Goyal, & Bhawsar, 2005; Singh, 2006), adolescent females in India have low knowledge about menstruation before it begins. Additionally, strict dietary restrictions are observed during menstruation in the Hindu community due to cultural traditions. For example, menstruating girls typically avoid sour foods like pickles, curd, and tamarind (Adinarayana, Jyothi, and Ellaiah, 2005; Paul & Gopal, 2007; Puri & Kapoor, 2006; Singh, 2006).

According to Grose and Grabe (2014), menstruation hygiene is the worst for sanitation in the underdeveloped countries. 73% of girls and women in six Indian states who attended a cutting-edge menstrual health management laboratory in India said they had no idea what to anticipate when they started bleeding because of the persistent shame, taboo, and stigma (Grose & Grabe, 2014).

In the religious setting, it is forbidden for menstruation girls and women to offer prayers or touch sacred texts (Stene-Johansen *et al.*, 2007). Menstruation is associated with many myths and taboos in the culture that predominates, which has detrimental effects on adolescent health, particularly menstrual hygiene. In addition, research by Kansal, Singh, and Kumar (2016) revealed taboos, myths, and social and cultural practices surrounding menstruation in Ranchi, India's urban residential regions and slum areas that had a negative impact on the girl-child.

Studies on menstruation undertaken in the East Africa region have led to unfavorable and mistaken views about women and young girls. For instance, menstrual women and girls were prohibited from drinking cows' milk in Western Uganda. The production of milk from cows is thought to be affected by menstruation, resulting in bloody milk (Crofts & Fisher, 2012). Furthermore, because it would reduce the yield, menstruation girls and women in Eastern Uganda were prohibited from planting groundnuts during the planting season. Menstruation was considered to be a top-secret matter that should only have been known to oneself in the Central area of Uganda (Kansal et al., 2016).

In Tanzania, studies on attitudes associated with menstruation report total embarrassment of girls more so on the first day of menstruation. A girl reports having been an embarrassment in class when she found blood stained on her skirt when she stood up to answer a question.

After witnessing their peers splatter blood on their skirts, other girls helped them by lending them a jacket or sweater before sending them to the matron's office. Few people can honestly say that they have never encountered a situation like this at school. However, several students claimed that male teachers were sensitive to the needs of female students. One girl in the FGD said that the male teacher ignored her request to use the restroom when she unexpectedly began menstruating during the class sessions and continued to do so until the end of the term. According to Kirk et al. (2016), it's possible that girls everywhere have comparable issues with male teachers.

In the Kenyan context, the study on menstrual associated attitudes in a nomadic Maasai community reports variation in the perception by 45.5% of 320 girls involved in the survey. The study further reports stigma in 37.8% of sampled girls, 44.7% felt discussion of menstruation issue is shameful, 23.3% of the sample showed fear over the matter, and 17.5% felt it was a private matter. The in-depth interviews on the subject revealed a discussion of menstruation in public is taboo and thus prohibited which enhanced stigma and social silence (Korir et al., 2018).

Menstruating females were also shunned by Muslim and traditional religious groups, who forbade them from participating in any social settings, including schools. As a result, the girls suffered social isolation and alienation. Girls chose to utilize surrounding bushes near the school because the Maasai culture in Kenya forbade sharing latrines with boys (Korir et al., 2018).

According to a study by F. K. Lukalo (2010) among primary school-aged children in Bungoma District, as referenced by Chebii (2014), menstruation is not merely a private matter but also has the potential to become public, uncomfortable, and stigmatizing for girls. Variation in attitude in various societal contexts necessitated the current research in schools in Mulundi sub-Location, Kitui County.

#### **2.4 Menstruation Management Practices among the School Going Girls**

The survey by Sommer (2010) indicates that menstrual hygiene management is a comprehensive approach, which encompasses the provision of reliable water, provision of private washrooms and materials like menstrual pads, functioning toilets, as well as education for girls about safe hygiene practices amid periods of menstruation. However, many countries across the globe struggle to avail pre-requisites for menstruating girls' welfare (Sommer, 2010).

According to Sommer and Sahin (2013), managing menstruation is a multifaceted combination of many things. First, managing menstruation illustrates the various methods employed by adolescent girls to prevent menstrual fluid from soiling their clothes. Secondly, menstruation management also entails maintaining cleanliness and proper hygiene during menstruation. Thirdly, menstruation management also entails eating a balanced diet to provide the body with essential nutrients during menstruation. Lastly, menstruation management also entails avoiding tension and stress and maintaining an active lifestyle while menstruating. In South Africa, inadequate menstrual disposal facilities have been realized despite the country performing better in terms of gross domestic product compared to other economies in the Sub-Saharan region (Sudhir, 2018)

For example, a study conducted in Nigeria by (Adinma & Adinma, 2008) revealed that 97% of respondents (Girls' Education) complained about the lack of adequate facilities as well as privacy in schools for changing as well as disposal of pads.

Research shows that in their lifetime, an average woman will generate 130 to 150 kilograms of pads, tampons, as well as other applicators. In developing regions such as Sub-Saharan, this bulk is disposed of in garbage dumps. This practice has raised serious concerns about environmental sustainability and most schools in developing countries do not consider the aspect of providing environmentally friendly disposal of pads, applicators, and tampons (Mutunda, 2013). Previous empirical studies have exhibited that school girls have reported challenges during menstruation, which are related to leakages, hygiene, and insufficient privacy. For example, a survey conducted by (Maqbool, Maqbool, Zehravi, & Ara, 2021) revealed that school-going girls experience feelings of anxiety during their menses owing to fear of leakage, and body odour because of using unhygienic products such as clothes to manage their menstruation.

However, prior studies by World Health Organization (WHO) have revealed that 75% of girls have had a history of genital infections including bacterial vaginitis and urinary tract infections as an outcome of poor practices of managing menstruation. For example, a study by (Gharoro, 2013) revealed that 18% of girls in Benin City use sanitary pads to manage their menstruation with a reminder using toilet paper or cloth. In Kenya, significant impediments to high-quality Menstrual Hygiene Management (MHM) persist across all counties and remain a principal challenge for low-income girls and women.

Studies by Emory University and UNICEF in Bolivia, Philippines, and Sierra Leone also found a lack of communication; insufficient knowledge, practical guidance, and support; limited access to preferred materials; and inadequate water access, sanitation conditions, hand washing facilities, and disposal mechanisms to be common across contexts (Long *et al.*, 2015).

Multiple factors prevent girls from successfully managing menstruation at school. A comparative study of menstrual hygiene management (MHM) in Cambodia, Ethiopia, Ghana, and Tanzania found that girls faced common challenges across these disparate contexts, including inadequate guidance and information on both pre and post-menarche and insufficient school latrines and water supply (Sommer, Hirsch, Nathanson, & Parker, 2015).

For girls in rural sub-Saharan African schools, concealing their menstrual status from others continues to be a significant difficulty (Sommer, 2010). Due to a lack of privacy, many girls claimed they had to change their absorbents at home. They also all claimed that they washed and dried their reusable absorbents at home rather than at school (Hennegan & Montgomery, 2016). When boys began to see their activity and taunt them, girls in Northeast Ethiopia claimed that they stopped using the school-provided pads (Tegegne & Sisay, 2014). In Kenya, girls' MHM and washing behavior was significantly influenced by the availability of privacy and water in schools (McMahon et al., 2011; Tegegne & Sisay, 2014).

Schoolgirls in Tanzania proposed the idea of sanitary cubicles away from boys' areas that include everything needed for menstrual management and offer privacy through lockable doors (Sommer, 2010).

In Ghana, 21.9% of students missed school, while those who did not miss school were unable to freely participate in extracurricular activities out of shame and self-consciousness. These ladies also admitted that because their menstrual flow was often light and one pack of sanitary pads might last them the duration of their time in school, they did not have time to change their pads while they were in class. However, if they got stained, these girls had to leave school and go home to wash and change. A percentage equal to 56.7% had never before gotten their clothes dirty at school, whereas 43.3% had. According to those who had ever soiled, they were afraid, ashamed, and embarrassed (Al Omari, Razeq, & Fooladi, 2016).

A study by Gharoro (2013) revealed that 18% of girls in Benin City use sanitary pads to manage their menstruation with a reminder using toilet paper or cloth. Other studies in Zambia have indicated that most of the school-going girls in Zambia use a piece of cloth described as “Kitenge”, which they normally get from their mothers while other girls reported using improvised cloth nappies to manage their menstruation.

Similar studies in Gayoby School in Kenjojo district in Uganda point out that over half of Ugandan girls who enrol in grade one drop out before completing their primary school education at an age of 11-13 years, which has been attributed to menarche and post menarche menstrual cycles. The same study cites the use of nappies or Kitenge materials for MHM from their mothers, as they do not soil easily (Bendera, 1999).

In Kenya, significant impediments to high-quality Menstrual Hygiene Management (MHM) persist across all counties and remain a principal challenge for low-income girls and women. A study in Kenya revealed that 65% of girls and women in Kenya could not afford high-quality menstrual hygiene management practices. Besides, the research revealed that only 32% of rural and urban schools provide private places for adolescent girls to change their used sanitary pads. It is vivid that management of menstruation remains a challenge among school-going girls and therefore, this study represents an opportune moment for pundits in the Kenyan health sector to come to terms with the challenges experienced by school-going girls in managing their menstruation (Mbwayo & Mathai, 2016).

Similar studies in Kibera, a residence in Kenya reveal disposal of used sanitary towels is usually impeded by the scanty availability of sanitary facilities. In most schools within Kibera localities, the ratio of latrine to pupils is 1:50 compared with recommended public health standard of 1:25 for boys and 1:30 for girls. The limited availability of latrines and disposal facilities within the school compound poses serious challenges when disposing of used sanitary towels (Mahon & Fernandes, 2010).



In further studies in Kenya, female students have been reported to face a myriad of challenges in terms of sanitation and hygiene. Regarding this, WHO (2010) revealed that many schools in Kenya have an inadequate number of latrines that are often poorly maintained and designed for menstrual management. Therefore, disposal of used sanitary pads remains a principal challenge among school-going girls. The problems of lack of knowledge, and poor management of disposal facilities are still a challenge in many schools in Kenya. Many girls are unable to afford sanitary pads and the cultural taboos surrounding menstruation are experienced. The extreme poverty and gender-related disparities that characterize some regions in Kenya including Kitui County have resulted in significant variation in social and health indicators among school-going girls (Alexander *et al.*, 2014).

Similar literature by the SWASH+ project which sought to identify, develop and test innovative approaches to school-based water sanitation and hygiene in Nyanza province Kenya shows that common remediation measures towards challenges associated with MHM are to stay home or drop out of school. The study further reports psychological reasons, which instil fear of scolding (Caruso *et al.*, 2014).

According to Mwenemeru's (2013) study on sanitation facilities and their effects on girls' participation in public primary education in the Thika municipality, public primary schools face numerous obstacles when it comes to providing girls with access to sanitation facilities. A total of 12 schools lacked appropriate restrooms, and none of the schools met the ministry of education's suggested toilets ratio of 1:25 for girls. Additionally, the majority of the schools' restrooms were in terrible condition, with broken cisterns in the flash toilets. The lack of adequate toilet paper, sanitary pads, soap, and coping mechanisms in some schools puts students at risk for contracting diseases like diarrhea, cholera, and worm infections. Some schools even suggested that students go to the bathroom in bushes (Mwenemeru, 2013).

Further, formative research revealed that 65% of girls and women in Kenya could not afford high-quality menstrual hygiene management practices. The majority of studies have

also posited that poor practices of menstruation management are encouraged by poverty in Kenya. (Mbwayo & Mathai, 2016).

Mbwayo and Mathai (2016) Assert that not many school-going girls can access adequate water, agents, as well as spaces for bathing and washing amid periods of menstruation. Moreover, prior studies by World Health Organization (WHO) have revealed that 75% of girls have had a history of genital infections including bacterial vaginitis and urinary tract infections, and the outcome of poor practices of managing menstruation. A blend of challenges facing three facets of MHM reported in regional to neighbouring Counties formed a strong basis for this research.

## **2.5 Theoretical Framework**

The Social Learning Theory, which explains how and why individuals behave the way they do, served as the study's main theoretical framework. Social learning theory blends behavioral learning theory, which holds that learning is based on responses to environmental cues (Malone, 2014; Watson, 1919), with social cognitive theory, which holds that learning is influenced by psychological aspects (Bandura, 1977). Albert Bandura, an American social psychologist, combined these two theories into a framework he called social learning theory. He defined four prerequisites for learning: environmental observation, cognitive retention, reproduction, and motivation. According to Albert Bandura (Bandura, 1977), the two main factors in this process are observation and modeling.

This theory goes beyond behavioural theory, which suggests that all behaviours are acquired through interaction with the environment (conditioning) (Overskeid, 2018). Bandura's theory takes into account psychological influences such as attention and memory (Weiten, Dunn, & Hammer, 2014).

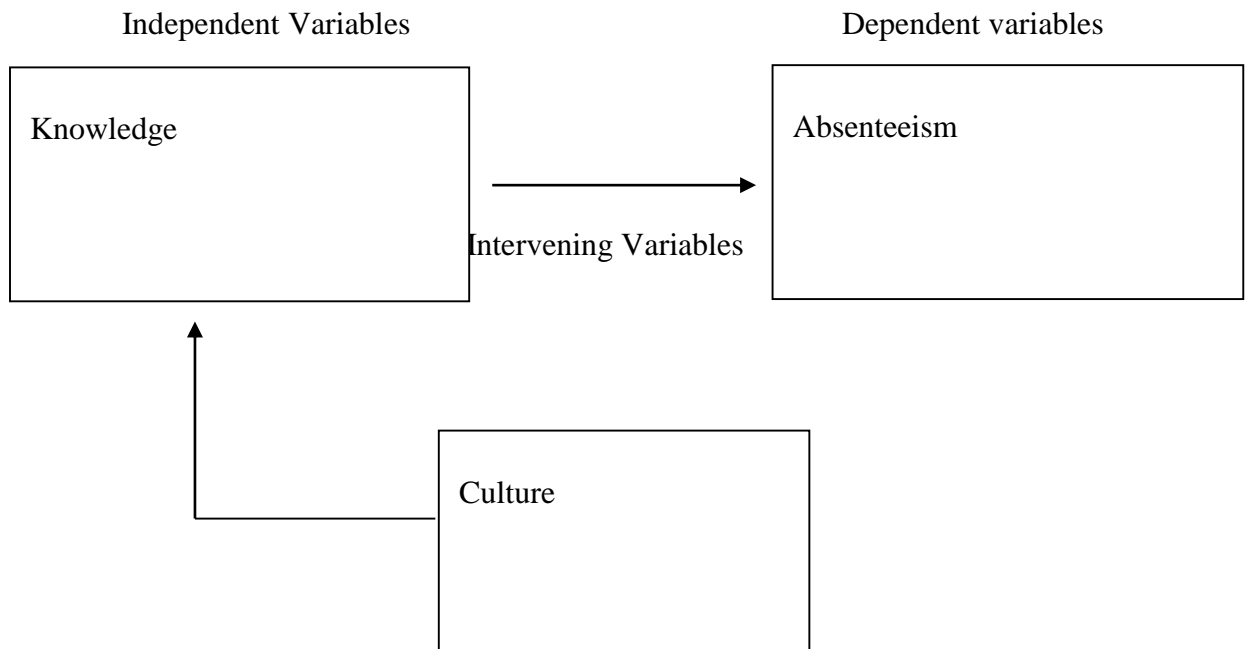
According to this notion, items that are viewed as innovative or different in some way are more likely to catch people's attention. Social settings support these views in many ways. The knowledge, behavior, and abilities are then called upon to respond to situations that

are analogous to the ones in which we originally learned them. Nevertheless, responses are frequently improved by practice, including both mental and physical rehearsals. Our sense of motivation is sparked by watching others receive praise or criticism for deeds or words. This provides incentive to carry out the same behavior or stay away from similar interactions.

Bandura (1973) and others have used social learning theory extensively to analyze violence and psychological problems, notably in the context of behavior modification. Additionally, it serves as the theoretical underpinning for the commonly utilized behavior modeling technique in training courses. The concept of self-efficacy in various circumstances was another area of attention for Bandura's research (Bandura, 1997).

Social learning theory at large suggests that the more information an individual has about something the more likely he or she is to have an attitude towards it-either-positive or negative (Spielberger, 2004). This study adopts this aspect of the social cognitive theory since MHM is a behavioural attribute that can be learned and in this case, students' behaviour, especially during their menstruation, depends on what they are taught by their immediate environment including teachers on puberty health. Knowledge of MHM will help students understand menstruation as a normal biological process and therefore develop a positive attitude toward the whole phenomenon.

The capability to do something is achieved through acquired knowledge and skills. This means a student can be taught in class, from home or learn from media how to manage herself during menstruation or observe successful demonstrations from others. On the other hand, students' attitudes towards MHM and related practices are attributed to the physical and social environment in which they find themselves. For example, the availability of WASH and waste disposal facilities can encourage students to embrace proper methods of disposing of used sanitary materials during menstruation. On the other hand, if the school or household does not have the proper waste management measures students might develop irresponsible behaviour when disposing of their sanitary materials.



**Figure 2.1: Conceptual framework**

### **2.6 Summary of Conceptual framework**

The above analysis has a literature review on the subject of knowledge, attitudes and practices associated with menstrual hygiene management in Mulundi sub-Location, Kitui County. According to the literature, accurate know-how on the menstrual subject will lead to correct management practices and consequently avert menstrual-related stigma. Absenteeism, low self-esteem and diseases which occur due to poor MHM will be minimized.

From the analysis of Social Learning Theory, several factors which affect menstrual knowledge, attitude and management practices come into play. That is cultural taboos, poverty levels and low level of formal education on menstrual hygiene management. These factors are responsible for the current state of menstrual hygiene, poor attitude and poor management practices. However, the gaps in menstrual knowledge, an outcome culture, taboos, and inadequate efforts in intensifying precise menstrual knowledge of adolescent pregnancies have motivated the undertaking of this study.

## **CHAPTER THREE**

### **3.0 METHODOLOGY**

#### **3.1 Introduction**

This chapter outlays the various methods that were employed during this study. The chapter gives details on the methods and materials used during sampling and data analysis. The chapter also introduces the research design, target population, sampling procedure to be followed as well the ethical issues that are requisite during research.

#### **3.2 Research Design**

The study adopted a cross-sectional descriptive research design in the collection of both qualitative and quantitative data. Descriptive cross-sectional research is essential in describing an attitude, behaviour, and opinion held by a group of individuals on a given subject (Saunders, Lewis, & Thornhill, 2003). In this case, the descriptive research design was useful in establishing the knowledge of MHM among the school-going girls in Mulundi sub-Location manage and how they managed their used sanitary materials, the general feeling of the environment where they lived and the kind of channels they accessed to gain knowledge in MHM. The cross-sectional descriptive research design was adopted to enable the integration of both qualitative and quantitative data from different tools.

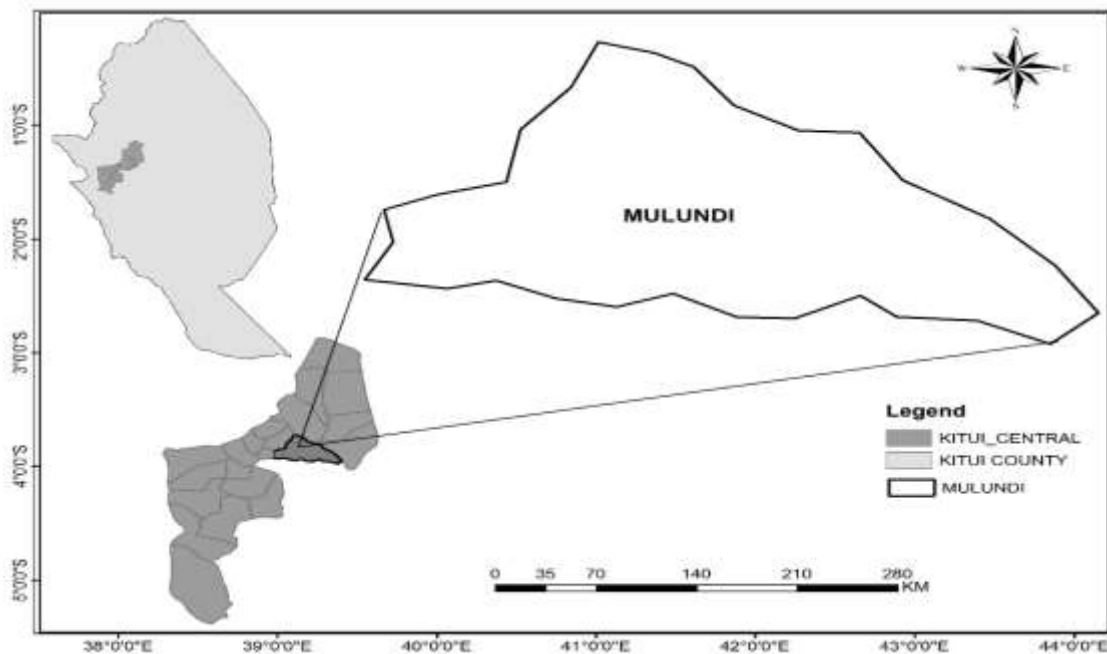
#### **3.3 Study Area**

Mulundi sub-Location is located near Kitui town, Kitui Central Constituency in Kitui County, Kenya. Mulundi sub-location is an administrative unit in the outskirts of Kitui town whose residents practice common economic activities as in other parts of Kitui County. The religious practices match the religious practice of the many sub-locations, which made it again a suitable study area as religious affiliation affects attitudes and practices in many societal contexts.

The main economic activities of people living in the Mulundi sub-Location include subsistence mixed farming and engagement in small-scale enterprises such as selling water, building sand and stones, vegetables and charcoal burning to eke their living. The consideration of the economic aspect was prudent as it may affect the management

practices of locals. Since the school going girls rely on their parent’s income there is a likelihood that most of the schoolgirls still experience challenges when purchasing sanitary materials during menstruation. This research was conducted in the Mulundi sub-Location, one of the five sub-Locations of Kyangwithya East Location in Kitui Central. The study aimed at establishing knowledge, attitude and practices on MHM among the school-going girls in the Mulundi sub-Location. Based on many social, economic and religious factors Mulundi sub-location share with many places in Kitui, the data from the sub-location can be conclusively used to represent other areas fully.

This study formed baseline research on MHM among school-going girls and on knowledge, attitude and management practices by school-going girls. In Mulundi sub-Location. The majority of the population in the Mulundi sub-Location uses pit latrines and has no access to modern sanitation. Figure 3.1 shows a map of Kitui County, with the target Kitui central sub-county where the studied sub-location geographically lies.



**Figure 3.1: Location of Mulundi sub-Location, Kyangwithya East Ward in Kitui County**

### **3.4 Study Population**

This study involved nine hundred (900) school-going girls from four (4) primary schools namely; Kalawa, Mulundi, Makutano and Kwa Ngindu. The study was carried out in all primary schools. (For each primary school, only standard six (6) to eight (8) girls were considered for the study as the study targeted both knowledgeable girls on menarche and those not yet aware of Menstruation). Homogeneous Boys' secondary schools were not of interest as the study-targeted girl learners only. Since there were no homogenous girls' secondary schools, all the mixed secondary schools were sampled to increase representativeness in the area. All girls from three (3) secondary schools; Kalawa Mixed Day, Mulundi Mixed Day, and Kwa Ngindu Mixed Day Secondary School within Mulundi sub-Location were sampled for the study. The studied girls' population was (900) whose records were obtained from the Kitui County office of the Ministry of Education. Besides the 900 teenage school-going girls, the study population entailed seven (7) female teachers each from the selected schools within Mulundi sub-Location.

### **3.5 Sample Size and Sampling Procedures**

Using the mathematical model proposed by Slovin in 2013, a sample size of 280 school-going females was determined from the study population of 900. 140 of the 280 school-going girls were sampled using stratified random sampling and further systematic random sampling, and they ranged in age from 10 to 19 years. Using stratified sampling, all female students in each school between the ages of 10 and 19 were divided into five (5) strata.

The girls from each stratum were assigned numerals 1-4 further regrouping them into four (4) subgroups. Systematic random sampling was then employed to select (4) learners from each group to make 20 girls per school. Simple random sampling was operationalized by writing one (1) Yes and three (3) No on pieces of paper in a lottery. Those who picked the Yes papers in a lottery per stratum were selected as respondents.

Similarly, 140 girls between the ages of 15 and 19 were sampled using stratified and systematic random sampling. Due to their practical experience with menstruation concerns, schoolgirls between the ages of 15 and 19 were purposefully selected for the sampling, which included knowledge, attitude, and menstrual hygiene management practices.

Additionally, each school received a female teacher who worked as the matron who was assigned to respond to the key informant guides. The administrators of the school assigned female teachers who they believed had experience with girls' menstrual health issues.

30% of the target population is represented by the sample of 280 enrolled-in-school girls, as calculated using equation 3.1. The sample size is suitable, according to Mugenda and Mugenda's suggestion from 2003 that, as long as the target population does not exceed 10,000, a sample size of 10 to 30 percent is sufficient to produce favorable results in a descriptive study. The sampled schools were evenly dispersed over the sub-Location to obtain a variety of perspectives on MHM. To determine the sample size for the teenage girls, Slovin's (2013) formula was used.

$$n_f = \frac{N}{(1+Ne^2)} \quad 3.1$$

Where;

$n_f$  = desired sample size for target population less than 10,000

$N$  = Population size

$e = 0.05$  is the margin of error (M.o.E) in this case  $e = 0.05$

Therefore;

$$n_f = \frac{900}{\{1 + (900 \times 0.05^2)\}}$$

$$n_f = \frac{900}{\{1 + (2.335)\}}$$

$$n_f = \frac{900}{(1 + 2.335)}$$

$$n_f = \frac{900}{(3.335)} = 280$$

### 3.6 Data Collection

Various tools were employed during data collection to produce sufficient, reproducible and compelling results compared to the use of a single method in the study. Both qualitative and quantitative data were collected to complement each other using questionnaires and interview guides. Qualitative data was meant to give the feeling and views of the school-going girls on the knowledge, attitude and management practices within the sampled sub-



location. Quantitative data gave the tallies of the respondents on the study themes which was useful in giving the current status on the knowledge, attitude and management practices by the school-going girls. The various data collection tools adopted in this research are outlined in the following sections.

### **3.6.1 Questionnaires**

An individual questionnaire with closed-ended questions was used to gather quantitative data. Open-ended questions designed for focused group discussions and key informant guides were utilized to gather qualitative data. The questionnaires were used to gather the respondents' socio-demographic information in addition to the study data. Age, education level, religious affiliation, and information on the next of kin were among the sociodemographic factors gathered.

The number of girls who filled out individual questionnaires was 140. The principal goal of the questionnaire was to collect ideas, opinions, as well as perspectives from the respondents as far as their knowledge, attitude and menstrual hygiene management were concerned. For the following reasons, the questionnaire was appropriate: it had the capacity to contact a high number of respondents in a short period of time. Its capacity to provide respondents with sufficient time to react to the items, its ability to reassure respondents of their privacy, and the fact that it is an objective procedure with no bias resulting from individual traits (unlike an interview) (Owens, 2002).

### **3.6.2 Focused Group Discussions**

Qualitative data was collected using focused group discussions. Stratified systematic random sampling was adopted during the enumeration of 140 learners who participated in FGDs. The study held focused group discussions with sampled girls from primary and secondary schools. The sampling procedure involved grouping learners who had attained an age of 15 -19 years were grouped into 5 groups per school regardless of their class into five strata. This was achieved by giving the total eligible population size numerals 1 – 5 and then regrouping those who held similar numerals. Systematic random sampling was then applied to each stratum whose number varied per school. Systematic sampling entailed

further picking  $i^{\text{th}}$  number from strata such that only four picks are possible to make a total number of school-going girls who participated in FGDs 20 per school. This, therefore, made a total sample of 140 girls from the seven schools. The issues affecting the welfare of the girl child during menstruation were discussed under the guidance of the researcher. A checklist of themes was used to guide the discussions.

### **3.6.3 Key Informant Interviews**

The key informants involved seven (7) female teachers who are directly involved in helping the teenagers manage their menstruation. The key informants were purposively sampled. The key informants were nominated by the school heads since they knew teachers who gave girls pre-menarche and menstrual-related attention while in school. The female teachers gave details on the current landscape of knowledge, attitude and menstrual hygiene management practices. The information on the management of menstrual-related aches by learners under the guidance of the female teachers was collected through key informant interviews.

The qualitative information collected through this method was necessary for establishing the baseline attitude of teachers towards the subject of menstrual hygiene management and associated attitude. Such data from female teachers was necessary as some attitudes in girls may be from external factors.

### **3.7 Data Analysis**

Both qualitative and quantitative data were gathered for this investigation. Verbatim quotes were used to present the theme content analysis analysis of the qualitative data derived from open-ended questions and interviews. To support the quantitative statistics, the qualitative data were also employed.

In the structured questionnaire, closed-ended questions were used to capture the quantitative data. The Statistical Package for Social Sciences (SPSS) was used to compute descriptive statistics using coded quantitative data from the questionnaire, and the results were displayed as graphs, tables, and percentages.

### **3.8 Ethical Considerations**

The research sought approval from the Ministry of Health and was conducted in complete accordance with the ethical standards outlined in the constitution. Before entering the field, the National Commission for Science, Technology, and Innovation (NACOSTI) was contacted to obtain the research permission required for data collecting. The respondents were given the assurance that the research's conclusions would only be used for academic purposes.

The decision to participate or not was made with the respondents' informed agreement. By refraining from using any name or location identifiers and from photographing people or places in a way that could lead to identification without their consent, the respondents' confidentiality and anonymity were guaranteed. All copies of completed questionnaires and other types of data were kept in the researcher's possession.

Lastly, by using a sample size of 280 respondents, the research project focused on gathering reliable as well as dependable data to derive conclusions for the study. The research tools were validated by conducting a pre-survey in schools in the neighbourhood sub Location. This meant to assure that the questions in the survey tools were easily understandable. The necessary changes in questions framing were updated to reduce ambiguity.

## **CHAPTER FOUR**

### **4.0 RESULTS**

#### **4.1 Introduction**

This chapter is a presentation of study data, which has been expounded in line with thematic subsections in line with the study objectives. The thematic subsections include establishing the knowledge school going girls have on MHM, attitude towards menstruation among the school-going girls and the management practices associated with the biological process among school girls in Mulundi sub-Location, Kitui County.

#### **4.2 Socio-demographic Characteristics of the Respondents**

One hundred and forty (140) questionnaires were issued to girls aged 10 - 19 years. The collected questionnaires were edited for completeness and consistency. The questionnaire's return rate was 100%. Any response above 60% is usually considered adequate for qualitative and quantitative analysis (Mugenda & Mugenda, 2003). The study sought for qualitative data to complement quantitative data and consequently conducted FGDs on 140 girls and key informant interviews with seven (7) teachers to know their responses to the study objectives.

#### **4.3 Demographic Characteristics of Respondents**

The useful demographic characteristics in this section included occupation, age, family status, the participant's education level and religion. This gave an in-depth understanding of the inter-relationship among variables under study. Table 4.1 is a summary of the respondent's ages

**Table 4.1: Age profile characteristics of participants**

<b>Category</b>	<b>Age group</b>	<b>Frequency</b>	<b>Percent</b>
	10 – 19 years	140	50
	15 – 19 years	140	50
<b>TOTAL</b>		280	100

Source: Field survey data (2021)

Two hundred and eighty girls participated in the study as follows; one hundred and forty 140 (50%) school-going girls aged between (10 – 19) years (from primary and secondary sections) participated in this study by filling out the individual questionnaire. This age bracket involved school-going girls who had never had menarche and those who had practical experience with menstruation. Such information was necessary for giving the status of the knowledge, attitude and management practices.

A sample who had never had menarche was meant to give the status of knowledge and thinking of girls on the subject of menstruation. Such information was useful as it could influence attitude on menstruation ahead of experiencing it. The remaining 140 (50%) aged (15 – 19) years were purposively collected due to their practical experiences on menstrual issues specifically knowledge, attitude and menstrual hygiene practices.

This group was targeted because it was assumed that at the age of 15 years, school-going girls have already experienced menstruation. Consequently, their menstrual knowledge and practices were part of the data the study sought to collect. The sample of girls aged 15 years and above gave their knowledge landscape, attitude and menstrual management practices. Table 4.1 is a summary of the age distribution of school-going girls who participated in the research.

**Table 4.2: Education grades of participants**

<b>Category</b>	<b>Education level</b>	<b>Frequency</b>	<b>Percent</b>
	Primary level	160	57
	Secondary	120	43
<b>TOTAL</b>		<b>280</b>	<b>100</b>

Source: Field survey data (2021)

Table 4.2 presents the learner's distribution based on their learning levels. The research involved learners 160 (57%) learners from primary school and 120 (43%) learners from secondary school. The majority of the learners from the primary section who had not yet experienced menstruation gave their diversified views on knowledge, attitude and menstrual management practices. The girls in their pre-menarche age explained the expected management practices and their attitude toward menstruation. The majority of learners from the secondary school level gave their information on knowledge, attitude and management practices based on their practical experiences with menstruation. Such data was requisite for this study.

**Table 4.3: Religious affiliation of participants**

<b>Category</b>	<b>Religion</b>	<b>Frequency</b>	<b>Percent</b>
	Protestant	148	53
	Catholics	113	40
	Muslim	17	6
	Others	2	1
<b>TOTAL</b>		<b>280</b>	<b>100</b>

Source: Field survey data (2021)

Table 4.3 provides a summary of the religious affiliation of the participants. The religious aspect was essential as the literature review reports diversity in menstrual management practices among different religions. Further, the literature reveals that taboos and cultural diversity vary with religious affiliation. Based on religious affiliations, respondents

constituted the following percentages (148) 53% Protestants, (113) 40% Catholics, (17) 6 % Muslims and (2) 1 % chose not to reveal their religion.

**Table 4.4: Parenting status of participants**

<b>Category</b>	<b>Next of kin</b>	<b>Frequency</b>	<b>Percent</b>
	Both parents	218	78
	Single parent	36	13
	Relative	26	9
<b>TOTAL</b>		280	100

Source: Field survey data (2021)

The demographic profile based on the nature of caregivers shows that (218) 78 % of the girls' respondents were taken care of by both parents, (36) 13% belonged to single parents while (26) 9% lived with relatives as presented by table 4.4. This was necessary as the endowment levels, which mainly varied as the nature of the caregiver determined the nature of management practices by school-going girls.

**Table 4.5: Next of the kin Education level of participants**

<b>Category</b>	<b>Next of kin Education level</b>	<b>Frequency</b>	<b>Percent</b>
	Primary	78	28
	Secondary	56	20
	Tertiary	146	52
<b>TOTAL</b>		280	100

Source: Field survey data (2021)

The survey involved primary school learners, secondary school and seven (7) teachers who had at least attained diploma qualification and had a minimum of 3 years' experience in handling adolescents. A percent constituting 78 (28%) of the respondents' kin had attained basic primary education while (56) 20% of kin had attained secondary qualification. (146) 52% of the sample had tertiary qualifications and above (see Table 4.5). Determination of the education level of the next of kin was important as it influenced the knowledge, attitude

and menstrual hygiene practices in some reported cases. Most of the girl respondents who seemingly knew the menstrual subject had their next of kin having attained ordinary level education.

#### **4.4 The Knowledge School going Girls have on Menstrual Hygiene Management**

In the Mulundi sub-location, this section emphasizes the different sources and levels of knowledge that school-going females have on menstrual hygiene. The goal of the study was to better understand and manage girls' menstruation. The study looked further into the benefits of proper management techniques and the effects of improper management of menstrual hygiene. Information about menarche and pre-menarche was provided by students between the ages of 10 and 19. Respondents provided details on the information sources they used to learn about MHM, and their comments were compiled in Table 4.6.

**Table 4.6 Sources of menstrual information to teenage girls in Mulundi sub-Location**

Source	Frequency	Percentage (%)
Teachers	94	33.2
Parents	109	39.1
An individual	15	5.1
Peer educators	43	15.7
Religious individuals/groups	11	3.7
Others (specify)	9	3.2
TOTAL	280	100

Source: Primary data (2021)

In general, the majority of students acknowledged various sources of information. According to Table 4.6, parents provided 39.1% of the data on menarche and menstruation. Due to the cumulative effect of their knowledge (33.2%), teachers were also said to have included a lot of mentorship on menstrual hygiene management during peer counseling lessons. Individual exploration represented 5.1%, while peer educators made up 15.7%.



3.7% of the menstruation information for the school-aged females from these areas came from religious organizations, and 3.2% came from other sources. Some girls claimed that the majority of their family members avoided the subject of menstruation. Teenage females didn't identify Facebook, Daily Nation, or television as sources of information on menstruation. The quantitative data on the knowledge status collected using individual questionnaires has been presented in tabular form in Table 4.7.

**Table 4.7 Description of the Knowledge of school-going girls on menstrual hygiene**

Variable	Frequency	Percent
Heard of menstruation		
Yes	95	68
No	45	32
Defined menstruation as		
Physiological process	95	68
Disease	19	14
Curse	13	9
Don't know	8	6
Other, specify.....	5	3
Causes of menstruation		
Body hormones	91	65
Diseases	23	16
No idea	15	11
Others, specify.....	11	8
Knowledge on menstrual cycle		
Yes	90	64
No	50	36
Sanitary wear knowledge		
Disposable Sanitary Pad	82	59
Tampon	11	4
Menstrual Cup	3	2
Reusable Pad	20	14
Cloths	18	13
Mattress	6	4
Menstrual hygiene knowledge		
Yes	78	56
No	62	44

Source: Primary data (2021)

The majority of the girls, or (95) 68% of them, correctly identified menstruation as a physiological process. Menstruation was described as an illness by 14% of the additional

sample of (19) respondents who completed individual questionnaires, while it was viewed as a curse by 9% (13) of the respondents. 13 people, or a minimum percentage of 9%, had no idea. Students from secondary schools made up the bulk of those who could define menstruation precisely. The study results show that 64% (90) of the informed females knew about the menstrual cycle and gave the range of 2 to 5 days as the typical duration. 36% of the girls, however, were unfamiliar with the menstrual period.

Over (82) 59% of the females in the sample knew about disposable sanitary pads, whereas (11) 8% of them had heard of and used tampons. Menstrual cups were known to only a small number of (3) 2%. Twenty (20) 14%, 18%, and 6% of the girl's responders said they had heard of and used reusable pads, clothes, and beds, respectively.

Over seventy-six (78) of the girls, or 56%, were aware of basic menstrual hygiene management techniques, whereas 62 (44%) were not. The primary portion made a point of observing this. Further, it was observed that information on knowledge was still inadequate as evidenced by some statements made by some girl respondents within the age bracket of 10-19 years. The following are some verbatim quotes with respondents during FGDs and suggest some girls had fallacious knowledge on the subject.

“Menstruation is a genetic process for some tribes only”

The girl's respondent further narrated that;

“*Menstruation occurs in both females and males of some particular age*”. Such a statement reveals that some girls are totally ignorant of who is affected by menstruation as a process. Further, narrations of the girl's discussant revealed some teachers shied away from menstrual hygiene subjects.

“I understand or know the process of hygiene but not the menstrual or menstruation process,” suggests that teachers never mentored learners on menstrual knowledge.

Other respondents attested that cultural backgrounds affected menstrual knowledge.

“Before I started menstruating I didn't know about menstruation..., this issue is very secretive; it is not supposed to be discussed with young ones who have not yet started

menstruating”. Such narration suggests that the menstrual knowledge is not intensively covered both in school and by parents at home.

During focused group discussions, the girls observed that the experience of attaining menarche without being packaged with information is traumatizing experience. To the interviewer’s thinking, it looked like the girls had lacked the opportunity to air their frustrations of the pain of shaking and frustrating experience without due preparation. It was evident that these girls were under the same experience as others were nodding in agreement as one of the girls talked.

“I came to know about it when I started menstruating. Before, I did not know anything. I had to ask my mother whether I was sick or bewitched (laughter)”

Another respondent narrated that, when she saw a bloodstain on her sheets, she feared that she had hurt herself. On further scrutiny, she got worried as she could not see any bruise or feel pain. However, when the mother noticed blood stains on her clothes asked her;

“... if I was bleeding from the vagina. I refused (to answer) and was surprised when she told an auntie from the neighborhood to check me. My auntie noticed that I was bleeding. Then I was put in the bedroom for 3 days, during that time some elderly women used to come, telling me that I now was a grown-up woman”

Yet another girl said:

“I was terrified as I did not know what was happening to me ... I had seen blood on my pants”

Another girl remembered:

“Yes. I thought I had hurt myself I also started crying and went to mom”

The verbatim quotes depict that a sense of fear and confusion tends to dominate among the girls when they are not given adequate information on the onset of the menstrual cycle and related expectations.

#### 4.5 Attitude on Menstruation

Table 4.8 is a tabular presentation of quantitative data on attitude. Generally, negative feeling on menstruation has been reported. The specific percentages showing the extent of the attitude are reported in Table 4.8 below: -

**Table 4.8: Attitude of school-going girls towards menstrual hygiene**

Variable	Frequency	Percentage (%)
Feeling of menarche while at school		
Excited	25	18
Fear	17	12
Ashamed	66	47
Confused and stressed	30	22
Others, specify.....	2	1
Traditional beliefs that influence MHM		
Yes	56	40
No	84	60
Advantages of sanitary napkins		
Comfortable	71	51
Adequate absorption	41	29
Do not stain clothes	14	10
No itching	9	7
Do not know	5	3
Disadvantages of sanitary napkins		
Expensive to purchase	103	73
Not available everywhere	22	16
Do not know	15	11
Menstrual related stigma		
Yes	98	70
No	42	30
Peers use unkind terms to describe menstruating girls		
Yes	50	36
No	90	64
Special treatment given to menstruating girls		
Yes	56	40
No	84	60
Restrictions on girls during menstruation		
School activities	31	12
Religious activities	4	3
Household chores	32	23
Not allowed to go to school	21	15
No restrictions	52	37

Source: Field survey data (2021)

A sample of 48% had their first menstruation while at school, which caught them without any preparation and some soiled their uniform, which stigmatized them. Over 50% had their menarche off school and due to secrecy and preparation by their caregivers they developed, a positive attitude towards the subject of menstruation and the larger sample of such girls were from the urban population.

A moderately higher sample of (67) 48% had their first menstruation while at school, which caught them without any preparation and some soiled their uniform which stigmatized them. Over 50% (73) of the sampled girls had their menarche off school and due to secrecy and preparation by their caregivers they developed, a sense of positive attitude towards the subject of menstruation and the larger sample of such girls were from the urban population. Girl's respondents reported different feelings during their first menstrual experience. A quarter of the study population (25) 18% felt excited while (17) 12% had fear of what was happening to their body. High levels of shame were reported by (66) 47% while a sample of (30), 22% reported confusion, as they had no prior expectation.

Traditional beliefs and cultural taboos had played a role in creating a negative attitude in learners. A sample of 40% reported traditional beliefs to have influenced their menstrual hygiene practices while 60% (84) reported no influence of culture on their menstrual hygiene.

The feelings of the girl respondents on the use of a variety of hygiene products varied. Like over half of the sampled girls, the population reported comfort-using napkins while the remaining sample had varied feelings. Some learners felt that, although artificial sanitary wear was good, they were however expensive. Some girls reported that artificial menstrual products had chemicals on continued use may cause cancer, which made them stick to the use of clothes and mattresses.

A slightly higher than a quarter 36% (50) of the respondents reported the use of demeaning terms against them by boys when they suspected that they were menstruating while 90

(64%) reported no teasing by their male counterparts. some of the terms used were; unclean girl, bleeding girls and wounded girls.

The girl learners reported no special treatment given to them while in school while they are menstruating. In some schools, the adolescent girls were warned against participating in rigorous activities like playing games and standing to answer questions in some studied schools, which made them feel lesser.

Analyses of data from all focused group discussions suggest that menstrual subjects should be treated as a secretive process as talking about it openly is taboo. This was noted at the very onset during the issuance of the FGDs tools. Most girls were shy about discussing the subject and had to be encouraged by the interviewer to break the taboo. The following comment is suggestive too that issues related to menstruation should not be discussed openly,

“Madam, menstruation is secretive ... it is a taboo to discuss menstruation with men or those who have not yet started menstruating”.

The taboo was mentioned severally suggesting that it has constrained the information on menstruation. As the interviewer noted;

“It is a taboo for men to see menstrual blood ... (and) menstrual cloth are not supposed to be seen by men or children”.

The conclusion was:

“So - one has to be very careful”

The interviewer probed to know why menstrual talk and issues are kept secret but had no good reason. The girl respondents maintained they were told by their kins that it is taboo to talk about menstruation. This suggests that the community cultural norms negatively influence the knowledge levels on menstruation.

It was also highly noted during focused group discussions that, girls were not allowed to participate in certain domestic chores like cooking a meal to be taken by men as this may transmit diseases to men. A good example, over 30% of the respondents who participated in FGDs, it is believed men may develop pneumonia or chest pain if he consumes a diet

whose salt was added by a female while menstruating. Intriguingly, some respondents believed that the consumers of such diets may even contract TB. Some participants mentioned:

“Yes, they say that when you are having your period you should not add salt to the dish. It causes chest pains in people”.

Another respondent narrated that Gonorrhoea and Bilharzia are some of the diseases men may develop upon consuming eateries salted by the female while menstruating.

#### **4.6 Management Practices associated with Menstruation among school-going Girls.**

This sub-section provides the results on management practices the adolescent girls within Mulundi sub-Location employs during menstruation. First, the sub-section deals with management practices adopted by teenage girls. It provides information on factors, which determines the management practices used by teenagers within the study area. Table 4.9 presents menstrual management status and practices.

**Table 4.9: Showing practices of school-going girls on menstrual hygiene**

Variable	Frequency	Percentage (%)
School attendance during menstruation		
Yes	73	52
No	67	48
Cause of school absenteeism		
Fear	18	27
Lack of absorbent material	38	56
Others, specify.....	11	17
Able to purchase sanitary Pads		
Yes	71	51
No	69	49
Main causes of inability to purchase Sanitary Pads		
No money	32	46
Fear of stigma	17	25
Shop unavailable/ far	12	18
Other, specify.....	8	11
Artificial or improvised sanitary wear		
Yes	98	64
No	42	36
Change of sanitary wear while in school		
Yes	81	58
No	59	42
Re-use of sanitary wear		
Yes	45	32
No	55	68
Best absorbent material to use during menstruation		
Cotton wool	24	17
Sanitary pad	57	41
Tampon	9	7
Tissue	17	12
Clothes	20	14
Mattress	13	9
Hands cleaning after change of sanitary wear		
Yes	80	57
No	60	43
Cleaning agent after change of Sanitary wear		
Plain water	57	41
Warm water	50	36
Water and Soap	30	21
Antiseptic	3	2
Genital cleaning agent while at school		
Plain water	38	27
Warm water	11	8
Water and soap	21	16
Nothing	68	49
Adequate WASH facilities at school		
Yes	85	61
No	55	39
Sanitary material disposal while at school		
Burn it	17	12
Pit latrine	78	56
Throw it in routine waste	45	32

Source: Field survey data (2021)



Slightly more than half of the population 52% (73) managed to school during their menstrual days while 67 could not make it to school during menstrual days. Over half of 56% (38) of the learners who could not make it to school cited a lack of absorbent materials as the reason for not attending. Slightly more than a quarter of the respondents (18) 27% cited fear of being noticed to be menstruating as the reason for keeping off school during menstrual days while (11) 17 % cited other reasons. Approximately half of the girl's sampled i.e. 51 % (71) reported that they were unable to buy sanitary wear, while 49% (69) could afford to buy artificial sanitary wear.

Lack of money to buy sanitary wear was cited as the major challenge. A sample size representing 46% of those who could not afford cited low levels of financial endowment as the main reason. A sample of the respondents constituting 25% cited stigma as what scared them from shops. Slightly more than a quarter (18%) urged that the shops were far while less than a quarter (11%) had other unspecified reasons.

Over half (65%) of the sampled population (140) used artificial sanitary wear while 30% used improvised sanitary wear notably clothes, mattresses and tissue papers. Slightly less than a quarter (14%) of the respondents reported the use of clothes depicting that the level of the endowment is still low. A percent of 12% (17) reported the use of tissue paper while 9% (13) reported the use of mattresses.

Slightly greater than half of the respondents (57%) 80 reported washing hands after the change of sanitary wear while 47% (60) could not wash nor sanitize due to inadequate water in some places. A significant sample of respondents constituting 56% (78) of the respondents used plain water to wash their sanitary wear products while only 8 % (11) could afford hygienic artificial disinfectants like soaps and other antiseptics.

Approximately half of the respondents (49%) 68 observed that they do not clean their genital areas after the change of their sanitary wear while 27% (38) of those who did use plain water. Only 16% (21) used water and soap to clean their genitals before changing their sanitary wear.

Respondents revealed further that the majority of the sampled schools had enough WASH facilities as reflected by 61% of the sample size while 39% (55) had no enough pit latrines. The learners reported that they could queue past break time inconveniencing them from changing.

All girls' respondents reported use of pit latrines, routine waste bins and burning as disposal ways of menstrual waste products. The majority reported the use of latrines as evidenced by 56% (78). However, 32% (45) of the respondents reported throwing the used sanitary pads in routine bins while 12% reported burning.

The quantitative data was complemented by qualitative data presented as verbatim quotes. The data collected through FGDs shows that water scarcity in learning institutions affected hygiene practices. Some schools have water scarcity such that the available water is used for cooking learners meals only, making it difficult for the girls to maintain proper standards of hygiene during menstruation. For instance one girl's discussants observed; "What we experience here at school is that we don't have (an) adequate water supply and our school has no running water"

The above- narrator continued that under such circumstances:

"It is very difficult to maintain a high standard of hygiene, maybe you only wash once a day and that's at night"

Reports from FGDs shows that four (4) out of seven (7) schools involved in the study had adequate WASH facilities for school going girls. In four (4) out of seven (7) schools studied, the common types of sanitation facilities available in the four schools are flush and pit latrines. However, the flush toilets reported regular blockage due to inadequate water in most schools making its use difficult. Four (4) schools had situated their toilets in the classroom blocks but had no water for washing hands after change of pads. Further analyses show that, inadequate sanitary disposal facilities has forced some learners to carry their used menstrual products in their bags to dispose them by burning, or burying at home. This compels learners to carry wrapping papers like newspapers and nylons to school when menstruating. One of the girl narrated that;

“You wrap them in a newspaper, which you put in the school bag and burn them in the evening when back home”

This creates psychological disturbance to the learners as must stay near their bags to ensure no one has access to it. Another reason for not disposing the menstrual products in the latrine was the fear of them being seen which might render them sterile.

Another girl hinted that

“On the days when you are having heavy flows, you just stay at home as there is nowhere to wash or clean yourself while at school. Because if you mess yourself it is embarrassing”

## CHAPTER FIVE

### 5.0 DISCUSSION

#### 5.1 Introduction

This chapter presents the discussion and interpretation of research findings based on the research objectives. The study sought to establish the knowledge, attitude and menstrual hygiene management practices among school girls between the two age groups 10-19 years and 15-19 years in the Mulundi sub-Location. The study encompassed 280 school going girls respondents and 7 teachers who were engaged as key informants. The results have been discussed in detail below.

#### 5.2 The Knowledge School-going Girls have on MHM

Among the various sources of menstrual information, parents were ranked as the most contributors to this knowledge. Up to 39.1% of girls' overall knowledge about menstruation hygiene came from parents. The girls confirmed that they learned about typical physiological changes during menstruation as a normal life phase from their parents. Girls made hints that there were other changes occurring in their bodies during puberty for which their parents had not adequately prepared them. Girls who responded to the survey gave their mothers high marks for mentoring them on premenstrual and menstrual concerns.

Even when they couldn't afford it, most students whose parents at least have a tertiary degree were well-versed in menstrual concerns, including the most absorbent materials to use during menstruation flow. The results of this study are completely consistent with data from a study by Carlson and Wilson (1996), who found that 52.5% of life learning is carried out by mothers. For girls who pass on the same knowledge to their progeny, this aids in maintaining a healthy reproductive tract.

The study findings reported by FGDs are well incongruent with revelations by school-going girls in other regions where similar studies have been done. A study on the status of menstrual knowledge by Lawan *et al.*, (2010) in Nigeria reports similar challenges of misconceptions. Similar data has been reported in Bengal city in India. Lawan (2010) found in his study that the level of reproductive health knowledge varied because of reliance on

information from different sources. Further research reveals low data on knowledge of the physical characteristics of menarche and menstruation among schooling adolescent girls.

Poor perception and generally inadequate knowledge of menstruation and menstrual hygiene management were cited in many studies and seemed to be common problems. This observation is further reinforced by a study by WaterAid 2009 in Nepal which noted that the girl child has no due preparations before the Menarche which subsequently affects menstrual practices. Studies by Adinma (2008) and Shanbhag (2012) well agree with the knowledge landscape in Kenya. Researches further attributed low knowledge on menstrual and reproductive health issues to limitations of formal education.

The study ascertained that a greater number of residents of Mulundi sub-location are reserved and highly stick to keeping their secrets. Strict adherence to cultural and traditional values was noted to limit public discussion on the subject regarding it as disrespectful. Findings from FGDs point out that all girls who has never had menarche and men should be kept out of talks pertaining menstruation. The study agrees well with a study on mother-daughter communication on menarche (Costos, Ackerman, & Paradis, 2002). This cultural pathway has bred misunderstanding and inadequate knowledge of menstruation across pre-pubertal school-going girls.

A belief that menstrual blood or used menstrual products can be used for black magic. Consequently, menstruating girls are keen that when menstruating nobody should know to avoid being bewitched. Some discussant reported that when used pad or menstrual cloth is disposed in anti-hill the owner becomes barren. The findings from this research well compares with findings from urban Malawi where residents believes menstrual products can be used for making witchcraft rendering the owner barren (Roxburgh et al., 2020). Generally, custom norms and practices hampered information dissemination on menstrual-related topics especially in the Mulundi sub-location studied. Therefore, girls' percent exceeding 20% who learnt about menarche and menstruation from their friends.

This thus exposes girls transiting from girlhood to womanhood to potential danger as peer learning has been prone to error due to inadequate know how on menstruation by peer friends.

The profiling menstrual landscape in the studied schools reports inadequate prior preparation on menstruation right from menarche. As such, the girl's respondents were caught by their first encounter unaware, which the FGDs report to have caused fear, confusion and discomfort among girls. A sample of girls who had prior preparation towards the menarche and onset of menstruation had confidence and high self-esteem. Such learners reported good menstrual hygiene practices like the use of sanitary pads and at least cleaning their hands and the change of pads. Similar observations were reported on a research on menstrual life (Golub, 2017).

A study by Warenius 2007 on reproductive health among Zambian secondary girls substantiates the above findings. The study findings reveal the issue of menstruation in Nzambia is treated with high levels of secrecy as public sharing of the information is a taboo, a fact which leaves girls with little preparation. Similar studies in India by Nagar and Aimol (2011) recommend prior sensitization of girls on menstruation subject. Related studies in Eastern Nigeria by Nkandi (2011) assert adequate knowledge on menstrual hygiene promotes good practices when it comes to menstrual hygiene. A study by Anjum 2010 recommends prior menstrual education ahead of puberty. The study further recommend the incorporation of menstrual hygiene issues in the educational curriculum to promote healthy life more so for school-going girls.

The findings presented above are supported by studies conducted in other developing nations by Shanbhag et al. (2012) as well as Warenius et al.'s (2007) investigation of vulnerability and sexual and reproductive health among secondary school students in Zambia. Menstruation was a taboo topic that was primarily, if not entirely, dealt with in secret in Zambia, according to the Warenius et al. (2007) study, leaving the girls unprepared. Based on what Shanbhag et al. (2012) concluded was the necessity for early sensitization of girls about the menstrual cycle, Reddy et al. (2006) and Shanbhag et al.

(2012) as quoted by Nagar and Aimol (2011) in their study note analogous cases from India.

The girls who took part in the FGDs openly discussed how unexpected and perplexing their adolescent experiences had been for them, saying that this was because they had not been adequately prepared for it. This demonstrates how it's crucial to give girls before menarche access to knowledge on the menstrual cycle and how to manage their periods hygienically. This is in line with the suggestions of Nkandi (2011), who discovered that having an adequate understanding of menstruation and menstrual cleanliness was likely to encourage excellent menstrual hygiene habits. Nkandi's study focused on Eastern Nigeria. Before menarche, adolescent girls should be given enough information about menstruation and menstrual hygiene, according to the author.

Anjum et al. (2010), who advise early menstrual instruction, or before puberty, also support this. The goal is to emotionally prepare the girls and prevent stress and shame. Similar conclusions have been reached by other investigations. For instance, Thakre et al. (2011) and Nagar and Aimol (2011) suggested that reproductive health and menstrual hygiene be incorporated into school curricula and home education, respectively, in their studies of comparable issues in Nagpur District, India, and Maghalaya, India. This would enable girls to manage their menstruation properly and right from the start, allowing them to live a healthy life.

### **5.3 Attitude toward menstruation among school-going girls**

A moderate percentage of (56) 40% of the respondents reported traditional beliefs to have influenced their perception of MHM. A relatively higher number 98 (70%) of girl respondents reported stigma from male peers in school and from home. Such reports were prevalent more so where the girls soiled their clothes while at school. More than a quarter of girls population (32) 23% hinted that back at home they are not supposed to participate in domestic chores particularly cooking which makes them feel dirty and lesser. This observation well agrees with a research conducted by Jogdand and Yerpude (2011) which showed menstruation has suffering and embarrassment as some studies report.

Nevertheless, the finding does not concur with literature on past studies by Gupta, Tiwari, and Wavare (2015)) among Maroons and Creols, which showed that adolescent girls were gifted jewels as an indicator that one has matured. However, other studies shows that menstruating girls are kept at home when they start menstruating which suspects them to the verge of dropping out of school.

A percentage slightly higher than a quarter (30%) of the girls reported that the teaching they get from their mothers is purely done in a secluded hidden place when their male's siblings are not aware to ensure they do not feel ashamed. A significant number of 62 % reported that their mothers advise them to keep their menstrual products in places where their dads and brothers cannot see them which is in agreement with a study done in Tanzania which reports that menstruating girls hide their menstrual clothes for the fear of being cursed (Sommer, 2010).

Girls in a sample size of 48% argued that even when their fathers can't buy them sanitary clothing, they still discover and regard menstrual-related things unfavorably. Girls' practical requirements related to MHM are frequently not recognized or properly treated because of the impression that they have not received basic factual education, which is made worse by the prevalence of false beliefs.

One explanation for this could be that boys find menstruating girls smelly and objectionable. This finding is in line with a study conducted by Jogdand and Yerpude (2011), who found that menstruation could result in misunderstanding, confusion, and prejudice. 36% (50) of the studied sample reported using derogatory words, terms, or phrases to describe girls while they were menstruating. This implies that the girls' rights to bodily integrity, equality, privacy, and health, as well as their freedom from abuse and violence that is brutal and degrading, are not upheld.

Further, girls reported that they are laughed off by the boys when they soil their clothes while in school. This limits menstruating girls from answering questions and participating in games for the fear of soiling their clothes. The girls' respondents also reported that most



of the girls wrap their sweaters around their waists to be sure that in case of soiling the bloodstain will not be visible. Findings from similar studies in rural Uganda reveals 32.6% of menstruating girls exempted themselves from class activities like cleaning and participation on class work to avoid shame (Hennegan, Dolan, Wu, Scott, & Montgomery, 2016).

The findings from this work show that only 51 % of the girls had a positive attitude towards the use of artificial sanitary wear. However, 49 % of the girls' respondents thought that the artificially made sanitary pads might cause some forms of cancer while others thought that the use of the same can cause sterility in women.

56 people, or more than 40% of the sample under study, said that they received no special treatment from their educational institution when they began their period at school. Few of the females said they were given an edge at school when they were menstruation. This is due to the lack of programs in schools that cater to the needs and challenges of girls who are menstruating. This was also seen in a study that WASH (2014) carried out in Cambodia.

The results of a cross-sectional study among Tamil Nadu residents in South India, who invited family and friends to the celebration and gave the adolescent girls expensive gifts, did not support this conclusion, however (Narayan, Srinivasa, Pelto, & Veerammal, 2001). According to this, SDG 3 (promote gender equality and empower women) cannot be reached either since girls are left behind and do not have equal opportunities. Over 48% of the girls were found to have experienced their menarche while attending school, and a significantly greater number, 22%, reported feeling disturbed upon first meeting, which may have been caused by apprehension about being embarrassed in front of other kids and guys making fun of them.

This conclusion is consistent with one made by Walker (2012) in a cross-sectional study. Girls encounter periods in school, which serves as the foundation for their later attitudes on their bodies and menstruation; as a result, girls grow to have a negative view of themselves.

#### **5.4 Menstrual management practices among school-going girls**

Generally, a high percentage 51% (71) of the girls reported use of disposable sanitary pads as a menstrual absorbent, The rest of the girls' respondents reported having used cotton wool, Tampons, tissue paper, old clothes and mattresses whose numbers are represented as 17%,7%,12%,14% and 9% respectively. Additionally, the practice of wearing outdated garments was seen among girls in the current study and may be related to young girls' ignorance of health-related practices. The lower socioeconomic status could potentially be the cause of this. This result agrees with a cross-sectional study carried out by Vaughn (2013).

However, a lack of sanitary supplies could make students uncomfortable in class and prevent them from participating, which could lead to girls skipping class each month when they are on their period. According to the study's findings, 42% of the teenage ladies did not switch absorbents while at school.

The girls' lack of knowledge and access to facilities is likely the cause of their failure to change the absorbents. These results are in line with a study by Vaughn (2013) in Ethiopia, where it was discovered that 25% of schoolgirls use nothing and normally isolate themselves during menstruation, compromising their right to privacy and leading in a basic violation of their human rights. With the odor of menstrual blood putting females at risk of being stigmatized, frequent absorbent changes may increase susceptibility to infection.

A lower percentage 60 (43%) of the girls did not wash their hands after replacing the sanitary item. This was ascribed to the lack of sufficient water sources to comfortably change and wash sanitary items in private. The continued education of the girls regarding the significance of hand hygiene for menstrual hygiene may be the cause of the slightly greater percentage of girls 80 (57%) who practiced hand washing after changing sanitary materials.

These results are in line with those of recent studies by Kirk et al. (2016) and UNICEF (2014). The spread of illnesses like thrush and hepatitis B might be facilitated by failing to wash your hands after changing sanitary materials.

The study's findings showed that 32% of the adolescent females reused sanitary clothing, which is a somewhat higher percentage than average. The reason for this observation may be related to their low socioeconomic position (SES), the fact that there are fewer pads available in rural locations, and a lack of awareness. These results are not identical to those of a study carried out in Nepal by Vaughn (2013), which showed that a significant portion of the girls reused the sanitary items.

Girls who reuse sanitary products risk increased odor, the development of further illnesses, and discomfort. According to the study's findings, only 21% (30) of the girls washed their sanitary items with soap and water. Because people are aware of the resources and can use them, soap and water are used. This result is comparable to another study by Girls' Education (2012) and Narayan, Srinivasa, Pelto, and Veeramal (2001), which found that the majority of rural girls reused old cloths after cleaning them with soap and water as menstrual pads. Girls may find it difficult to sit through class during their menstrual cycle if the schools they attend lack sufficient water supply for them to wash privately.

The percentage of girls who successfully cleansed their genitalia in remote locations was much lower. Lack of awareness regarding menstrual hygiene and privacy concerns, the latter of which is a serious issue, may be the causes of failure to clean the external genitalia. These results are in congruent with a study by Omidvar and Begum (2010), which found that 57% of participants chose soap and water as their primary cleaning agents for the external genitalia. This result, however, conflicts with a study carried out in Bangladesh by Narayan et al. (2001), which revealed that the majority of the females used simply water to clean their external genitalia. Inadequate genital hygiene can make it easier for bacteria to enter, which could lead to local infections that could spread up to the uterus.

In the current study, the most popular techniques for getting rid of spent absorbents were burning it (12%), dumping it in a pit latrine (56%) or throwing it out with regular trash (32%). This was brought on by a lack of suitable disposal methods. Other investigations by (Ali & Rizvi, 2010; Gupta et al., 2015) revealed similar results. Lack of facilities for disposing of old sanitary products can cause latrines to clog and pits to fill up quickly.

A significantly greater number, 55 (39%) of the females, said there weren't enough restrooms at the school. The financial state of the school and the administration's lack of awareness and education regarding menstrual hygiene are both contributing factors to the lack of proper sanitary facilities. These results are consistent with research done by Vaughn (2013). Menstruating girls may be forced to drop out of school temporarily and occasionally permanently due to a severe lack of facilities.

88 (63%) of the girls in the study adhered to various restrictions, which may have been influenced by local customs, erroneous beliefs about menstruation, a lack of knowledge, and the identification of greater stigmas with menstruation with distinct rituals, beliefs, and beliefs in their communities. These results were in line with those from other research Thakre et al. (2011) had also undertaken. Many girls have been forced to stay at home when they begin menstruating because of restrictions, either indefinitely (drop-out) or momentarily (during the days they menstruate). When females fall behind in their studies, this might eventually result in school drop-out.

## **CHAPTER SIX**

### **6.0 CONCLUSION AND RECOMMENDATION**

#### **6.1 Introduction**

This chapter summarizes the inferences made from the research findings and offers suggestions for the future. A conclusion has been done based on the study objectives and questions. Recommendations on how to enhance adolescents who are enrolled in school in the sampled area's knowledge, attitudes, and practices regarding managing menstrual hygiene has been outlined.

#### **6.2 Conclusion**

The study findings reveal that 68% of the girls were knowledgeable about menarche and menstruation. However, 32 % of girls without correct menstrual knowledge attributed the state to cultural taboos associated with menstruation. Some religions barred girls from accessing menstrual information. Not only did 32% of the girls lack knowledge about menstruation, but also about pre-menarche. The parents of the school-going girls (39.1%) provided the majority of the information. As dads were typically prohibited from addressing matters affecting girls in many family structures, moms made up a larger portion of the 39.1%. This study also showed that menstruation was not adequately addressed in government schools because it was not covered in any level of the curriculum. The teacher's contribution to MHM knowledge, at 33.2%, was still minimal, and the culture's influence reduced its accuracy. 32% of people were unable to correctly define menstruation and MHM. Peers, religious organizations, and other sources made negligible contributions to schoolgirls' understanding about MHM, and the material that was reported was false.

Generally, despite the data privacy guarantee, most of the respondents shied away from participating in the survey as they termed it shameful. These study findings showed that the respondents' girls had negative attitudes towards menstrual hygiene. The attitude of the school going girls towards the subject of menstruation was influenced by cultural beliefs and taboos.

The teacher's low input on menstrual knowledge suggests they equally shied from tackling the subject. A sample represented by 22% of the school-going respondents felt angry when menstruation caught them while at school. Further, 47% of the 66 respondents felt ashamed when on menstruation suggesting low knowledge of the subject led to a poor attitude. Sample equivalent to 40% of the learners reported an influence of traditional beliefs on the learners' attitude. The use of unkind words to menstruating girls was reported to suggest low knowledge, which influenced attitude negatively.

Menstrual hygiene practices involve the use of sanitary wear and cleaning practices during menstruation. The current menstrual practices by school-going girls were relatively good. among the most used sanitary products were cotton wool, sanitary pad, tampon, tissue, clothes and mattresses. A great number equivalent to 65% of the population used disposable sanitary wear. However, 14% and 9% used clothes and mattresses respectively. Menstrual practices adopted by the schoolgirls were dependent on the family background. Well, up families provided the correct menstrual hygiene products to their girls. All the studied schools reported no arrangements for menstruating learners like sanitary wear and special WASH facilities. A percentage of 58 of the studied learners' population could change their menstrual sanitary wear easily. Only 16 % of the girls reported having access to water and soap after the change of their menstrual wear. However, 56% of the population used plain water after the change of their sanitary wear. A further percentage of 27% of the girls reported the use of plain water to clean their genital area while at school.

Infrastructure wise, learners reported they had to queue with other learners, as there were no special changing rooms. The learners' toilet ratio was inadequate in all the sampled institutions. A sample represented by 32% of the learners reported throwing their sanitary material into routine waste in school while 56% threw their sanitary wear in pit latrines. A percentage of 12% reported burning their used sanitary wear more so when at home.

### **6.3 Recommendations**

To improve the knowledge on menstrual hygiene management, the study recommends incorporation of reproductive health and menstrual hygiene into the curriculum in learning

institutions for all relevant sectors (WASH, protection, health, community development as stipulated in MHM policy. Further, the school managers invite experts in the area sometimes to break the monotony of the classroom teachers handling talks on health and life skills. The female teachers to locally engage the female learners on the preparedness for the menstruation, expected body changes and the appropriate sanitary wear.

To minimize the negative attitude among the affected school-going girls, there is a need to sensitize the key players, girls, boys and parents so that they have the correct knowledge on the subject. With correct knowledge of the menstruation subject by the aforementioned groups, the cultural input will be minimized and menstrual associated stigma will be less. The school's guidance and counselling office needs to popularize the subject in special sessions involving the homogeneous learners' sample.

The study noted 39 % of the school institutions do not have enough WASH facilities and therefore recommends an increase in WASH facilities. Some of the infrastructures (toilets) meant for changing menstrual wear more so in the primary school had no locks and it's recommended that they are fitted with locks to enhance learners' privacy.

To minimize queuing by menstruating girls as reported from some institutions, there is a need to secure some special rooms for changing the sanitary wear with no congestion as some learners attributed the failure to change their pads to long queues in the toilet area. The study further recommends the inclusion of the disposal bins around the changing rooms, which uses a flushing system.

The schools' newsletter to the parent to quote the expected sanitary wear quality and quantity enough to last for a whole term for the case of boarding schools. To minimize absenteeism by school-going girls, parents need to be sensitized to the menstrual issues, which hamper the girls learning.

The heads of the schools should implement long-term plans, policies, and procedures for providing girls in public basic education institutions with free, adequate, and high-quality menstruation management supplies as well as procedures for their disposal in the schools.



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## **APPENDIX 1: INTRODUCTION LETTER**

Mercy Kalio

South Eastern Kenya University

P.O BOX 170 - 90200

5<sup>th</sup> February 2020

Dear Respondent,

### **RE: COLLECTION OF RESEARCH DATA**

I am a postgraduate student at South Eastern Kenya University (SEKU). To fulfil the master's degree requirement, I am undertaking a research project on "*Knowledge and Practices on Menstrual, Hygiene Management by School Going Adolescents in Mulundi sub-Location, Kitui County*".

Your school has been selected to form part of this study. By this letter, I kindly request that you assist me to collect information by filling out the accompanying questionnaire, which I will then collect from you.

The information you provide will be used exclusively for academic purposes. My supervisor and I assure you that the information collected will be treated with strict confidence. A copy of the final paper will be availed to you on request.

Your cooperation will be highly appreciated.

Thank you,

Yours faithfully,

Mercy K.

MA. Student, South Eastern Kenya University

## APPENDIX 2: INTERVIEW GUIDE

To be directed to the key informant;

### Demographic Information

1. Name/position (optional) .....
2. What is your age group?  
Below 30 [ ], 30-40 [ ], 40-50 [ ], above 50 years [ ]  
Educational background
3. What is the highest level of education you have received?  
Secondary [ ] College/University level [ ] Others (specify) .....
4. Tell me about any other education or training that you have received before relevant to your job/position.  
Knowledge and roles in menstrual hygiene management among school-going girls
5. What makes you different in dealing with gender-related issues?
6. Based on your knowledge, whom do you think are the key players in educating the girl child about menstrual hygiene and management?
7. How often do you provide platforms or sessions to educate the girls in your school about menstruation health and hygiene?
8. Do you think lack of personal hygiene is a major challenge among the girl students in your school?
9. To what extent do the girls and boys in this school understand the whole menstruation process?
10. Have you found ways to make girls more confident during their menstruation?
11. To what extent do you think traditions and cultural misconception has influenced the way girls to behave during menstruation periods?
12. In your own opinion, what do you think is the current perception toward menstruation among students in your school?  
Availability of waste disposal facilities and conducive environment in schools
13. Does your school provide free sanitary towels?
14. What do you like best about waste management facilities within the school compound?
15. Are there enough toilets in the school?
16. Is there a regular supply of water in your school?

17. Are there any governmental initiatives supporting personal hygiene or menstruation health?
18. Does your school provide personal hygiene and puberty education?
19. To what extent are you satisfied that you have the necessary measures put in place to support menstrual hygiene management among female students in your school?
20. What new ideas or suggestions would you give to enhance knowledge and practices on menstrual hygiene management among school-going girls?

Thank you for accepting to take part in this interview!

### APPENDIX 3: QUESTIONNAIRE FOR THE GIRLS

To be filled by students;

**Section A: Demographic Information**

1. Age        Below 12 [ ],    12-15 [ ],    15-18 [ ], 18 and above [ ]
2. Family status:    Single parent [ ], Both parents [ ], Guardian [ ]  
Others (specify) .....
3. Highest level of education of the parent/guardian  
Primary [ ],        Secondary [ ],        College/University level [ ]  
Others (specify) .....
4. Occupation of the parent/guardian  
Self-employed [ ],    Employed [ ],    Not employed [ ]

**Section B: Knowledge on menstrual hygiene management.**

5. Based on your experience, who do you think are the key players in your understanding about menstrual hygiene and management?

	Tick here (√)
Teachers	
Parents	
An individual	
Peer educators	
Religious individuals / groups	
Others (specify)	

6. Based on your answer in question 5, how would you rate the person that you rely on in terms of gathering knowledge on menstruation health and hygiene management?

	Poor	Fair	Good	Very good	Excellent
Teachers					
Parents					
An individual					
Peer educators					
Religious individuals / groups					
Others (specify)					

7. Have you ever heard of menstruation?
- a. Yes
- b. No
8. Have you ever heard of menstrual hygiene management before attaining menarche?
- a. Yes
- b. No
9. What causes menstruation?
- a. Body hormones
- b. Diseases
- c. No idea
- d. Others, specify.....
10. What do you understand about menstrual hygiene management?
- a. Frequency of sanitary pad exchange
- b. Frequency cleaning of genitalia
- c. Proper disposal of used sanitary pad
- d. Other, specify.....

**Section C: Attitude on menstrual cycle hygiene management.**

11. . Have you ever had your period while at school?
- a. Yes
- b. No
12. If yes, how many times?
- a. Once
- b. Twice
- c. Thrice
- d. More than thrice
13. How was the feeling?
- a. Excited
- b. Fear
- c. Confused and stressed
- d. Others, specify.....

14. How do you feel when discussing about menstrual hygiene management?
- a. Shame [ ]
  - b. Uncomfortable [ ]
  - c. Discouraged [ ]
  - d. Others, specify.....
15. Does your parent/guardian support you during menstruation?
- a. Yes [ ]
  - b. No [ ]

**Section D: Practices on menstrual cycle hygiene management?**

16. What is best absorbent material to use during menstruation?
- a. Disposable sanitary pad [ ]
  - b. Napkin [ ]
  - c. Cotton wool [ ]
  - d. Tissue paper [ ]
  - e. Others, specify.....
17. When menstruating, do you change your pants before you change your absorbent material?
- a. Yes [ ]
  - b. No [ ]
18. How many times in a day do you change your absorbent material during menstrual period?
- a. Once [ ]
  - b. Twice [ ]
  - c. Thrice [ ]
  - d. Others, specify.....
19. How often do you bath in a day during periods?
- a. Once every cycle [ ]
  - b. Twice [ ]
  - c. Never [ ]
  - d. Others, specify.....

20. What material do you use to clean your genital area during menstruation?
- a. Water and soap [ ]
  - b. Water only [ ]
  - c. Tissue paper [ ]
  - d. Cotton wool [ ]
  - e. Other, specify.....
21. Do you come to school during menstruation?
- a. Yes [ ]
  - b. No [ ]
22. If no, why don't you come to school during your menses?
- a. Fear [ ]
  - b. Lack of absorbent material [ ]
  - c. Others, specify.....
23. Have you ever been unable to buy sanitary pads?
- a. Yes [ ]
  - b. No [ ]
24. If yes, what was the reason for inability to buy sanitary pads?
- a. No money [ ]
  - b. Fear of stigma [ ]
  - c. Shop unavailable/ far [ ]
  - Other, specify.....
25. Where do you dispose your used absorbent material to maintain hygiene?
- a. Pit latrine [ ]
  - b. Dustbin [ ]
  - c. Burn [ ]
  - d. Other, specify.....

Thank you for your time!

#### **APPENDIX 4: LIST OF SCHOOLS IN MULUNDI SUB-LOCATION**

1. Kalawa Primary School
2. Mulundi Primary School
3. Makutano Primary School
4. Kalawa Mixed Day Secondary School
5. Mulundi Mixed Day Secondary School
6. Kwa Ngindu Primary School
7. Kwa Ndindu Mixed Day Secondary School



## APPENDIX 5: RESEARCH PERMIT NACOSTI

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