

**KNOWLEDGE ATTITUDE AND PRACTICES TOWARDS MENSTRUAL  
HYGIENE AMONG SECONDARY SCHOOL GIRLS IN MAKINDYE  
DIVISION, KAMPALA DISTRICT**

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## **DECLARATION**

I, declare that this research dissertation on “Knowledge, attitude and practices towards menstrual hygiene among secondary school girls in Makindye division, Kampala district” is my own effort and it has never been presented in any other institution for an academic award.

Researcher’s Name.....

Signature .....

Date .....

**APPROVAL**

This is my validation that the research on “Knowledge, attitude and practices towards menstrual hygiene among secondary school girls in Makindye division, Kampala district” by Nakaye Zainah has been closely supervised by Ms. Apio Judith AllSaints as assigned by International Health Sciences University.

Supervisor’s Name.....

Signature.....

Date.....

## **DEDICATION**

I dedicate this research to my lovely mother Mrs Walusimbi Halimah who has tirelessly worked hard to see me finish this course with success and my father Mr Kasamitala Tarish.

## **ACKNOWLEDGEMENT**

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## **OPERATIONAL DEFINITIONS**

### **Attitude**

This is an inclination to respond positively or negatively towards a given idea, object, person, or condition.

### **Culture**

These are the notions, customs, and social behaviour of specific people or society

### **Knowledge**

These are facts, information, and skills achieved through experience or education either as the theoretical or practical understanding of a subject.

### **Menstruation**

Menstruation is the repeated breakdown of the inner lining of the womb, endometrium, which is influenced by hormones of the hypothalamo-pituitary axis.

### **Menarche**

This is the first manifestation of menstruation.

### **Menstruation Hygiene Management**

This is when adult females and adolescent girls use clean material to absorb menstrual blood, whereby the absorbent napkin can be changed in privacy as often as desired for the menstrual period.

### **Practices**

This is the actual application or use of an idea, belief, or method, as opposed to theories relating to it.

## LIST OF ACRONYMS

IJRCOG	International Journal of Reproduction, Contraception, Obstetrics, and Gynecology
HCPs	Health Care Practitioners
MHM	Menstruation Health Management
RTIs	Reproductive Tract Infections
SNV	Stichting Nederlandse Vrijwilligers
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNICEF	United Nations Children's Fund
WASH	Water, Sanitation and Hygiene
WHO	World Health Organization
PIDs	Pelvic Inflammatory Diseases

## ABSTRACT

**Background:** Menstrual hygiene is a significant issue that every girl and woman has to deal with in her life. Unfortunately, health talks surrounding menstrual hygiene are minimal owing to the fact that the topic of menstruation is not discussed at all because teachers choose to avoid the taboo subject. We sought to assess the knowledge, attitude, and practices towards menstrual hygiene among secondary school girls in Makindye division Kampala district.

**Methods:** A descriptive cross-sectional study was carried out among secondary school girls in two selected schools in Makindye, Kampala district, Uganda. Stratified sampling method was used to select participants whereas data was collected using a self-administered questionnaire developed by the researcher. Data analysis was performed using SPSS version 20 and a level of significance of 95% was considered in this study.

**Results:** 193 participants out of 196 invited participants fully completed the study. The mean age of the respondents was 14 years (S. D =2.6). A significantly high number of girls had good knowledge 133 (69%) and good attitude 124 (64.2%) towards menstrual hygiene. Menstrual hygiene practices included: use of sanitary pads, satisfactory facilities for menstrual hygiene at school, disposal of used sanitary materials in the toilet/latrine. Restrictions during menstruation included: not being allowed to read the Quran or the Bible and cultural practices such as menstruation being seen as a disease and debilitating for women.

**Conclusion:** The plight of menstrual hygiene among adolescent girls is challenging. There is need to create awareness on healthy menstrual practices. Formal as well as informal channels of communication such as teachers, school senior women, mothers, sisters and friends, need to be emphasized for the delivery of information on menstrual hygiene, however, it is very important that they have the right knowledge, attitude and practices on reproductive health. It is also essential to include menstrual hygiene as part of the package taught in the school curriculums or during health education.

## CHAPTER ONE: INTRODUCTION

### 1.0 Introduction

This chapter presents the background of the study, problem statement, study objectives, research questions, the significance of the study and the conceptual framework.

### 1.1 Background

It is projected that 9% of the global population is in the age group of 10-19 years and while they are transitioning from childhood to adulthood, they undergo a number of physical as well as psychological pressures due to the changes taking place in their bodies (Eswi, Helal and Elarousy, 2012). Adolescence is characterized by physical, psychological, and social changes.

Menstruation is a physiological process in female adolescents which approximately starts at age of 9–12 years old (Balqis, Arya, and Ritonga, 2016). Averagely, 49.6% women of the global population menstruate 6-7 years of their lifetime (Mahon and Fernandes, 2010). Menstrual hygiene is an issue that every girl and woman has to deal with in her life, but there is lack of mindfulness of the process of menstruation and correct necessities for handling menstruation among teenage girls (Channawar and Prasad, 2016).

Menstruation is connected to numerous fallacies and untruthful practices, which sometimes result in negative health outcomes (Sharma et al., 2013). Some of these traditions and restrictions including restrictions on taking a bath, restriction on consuming hot and cold diets, restrictions on exercise, have no scientific backing and need to be disregarded to release menstruation anxiety among teenagers (Boosey, Prestwich, and Deave, 2014).

Menstrual troubles are the commonest presenting complaint in the adolescent age group which makes the frequency of reproductive tract complications like Pelvic Inflammatory Diseases (PIDs) and barrenness 3 times higher among adolescents who practice poor menstrual hygiene (Shanbhag et al., 2012).

Consequently, menstrual hygiene-related practices are considered significant in lessening the danger of infections among women (Sudeeshna and Aparajita, 2012). In order to achieve safe practices, adolescent girls need acceptable knowledge regarding menstruation and menstrual hygiene. This is because females who have good knowledge and practices regarding menstrual hygiene are less exposed to Reproductive Tract Infections (RTIs) and its consequences (Kamaljit et al., 2012).

Generally, women have 13 menses yearly and about 400 menses in their life even though menstruation has been surrounded by secrecy, negativity, and myths in much society (Anusree et al., 2014). 10 % of females are exposed to genital infections including urinary tract infections and bacterial vaginosis, and 75 % of women have a history of a genital infection every year worldwide. Explicitly, the common risk factors for vaginal infections include pregnancy and poor hygiene; both perineal and menstrual hygiene (Sarvade and Nile, 2016).

Kaiser, (2015), revealed that, about 52% of the female population is of reproductive age and most of them are menstruating every month. The largest proportion of them lack access to clean and safe sanitary material, or to a clean and private facility in which to change menstrual cloths or pads and to wash them.

1 out of 3 girls in South Asia lacked information on menstruation prior to getting it while 48% of girls in Iran and 10% of girls in India accept as true that menstruation is a disease (Water Aid, 2013). In Africa, over 70% of adolescents have inadequate information about menstrual hygiene, not more than 50% believed that menstruation is a normal occurrence during life (Boosey, Prestwich, and Deave, 2014).

Of the 10 girls in Sub-Saharan Africa, one fails to go to school while they are in their menstrual cycle which is equal to as much as 20% of the school year(World Bank, 2016). Nigeria revealed that 31% to 56 % of the schoolgirls use toilet tissue or cloth to absorb their menstrual blood as opposed to menstrual pads while in Ethiopia, although 92 % of the students were aware of menstruation before menarche, their utilization of sanitary material was as low as 37.6 % and 62.4 % were using rags and pieces of cloth while 11% of girls change their menstrual cloths once a day(Fehintola et al., 2017). The use of sanitary pads is as low as 18 % amongst Tanzanian women with the remainder using cloth or toilet paper (Upashe, Tekelab and Mekonnen, 2015).

Currently, the proportion of women who have consistent menstrual periods is increasing in developing countries including Uganda due to later childbirth hence fewer children. But many lack the financial and social circumstances to satisfactorily manage menstruation sanitation (Thakur et al., 2014). A predominantly susceptible group in this aspect is young women in poor families.

In Uganda, Forum of African Women Educationists (FAWE - Uganda) reported that among three girls one missed all or part of a school day throughout their menstrual cycle(Kirk and Sommer, 2006).

A cross-sectional study that was conducted in Kamuli district in Uganda by Hennegan et al., (2016) found out that 90.5% of the girls had inadequate menstrual hygiene management with no substantial difference between those using reusable pads and those using other existing methods like cloth, disposable sanitary pads, other methods including toilet paper and underwear alone.

Majority of studies on menstrual hygiene have been conducted in the rural setting and very few among urban populations. It is therefore not clear the level of menstrual hygiene among secondary school students in urban areas and whether they have adequate knowledge, therefore, this study aims at investigating knowledge, attitude and practices towards menstrual hygiene among secondary school girls in Makindye division in Kampala district.

## **1.2 Statement of the problem**

Menstruation is an ordinary reproductive change in teenage females that is anticipated to occur every 28 days. A menstruating teenage girl is supposed to maintain good hygiene by timely padding and taking a regular shower (WHO, 2015). In Uganda, menstruation is seen as a natural occurrence, a gift from God, and is considered essential as it gives womanhood. Nevertheless, women's perceptions of menstruation and related hygiene vary among different cultures, social groups, and religions.

The United Nations introduced the WASH program under Millennium Development Goal 6 which was adopted by all UN countries to improve water and sanitation services and menstrual hygiene management. During menstruation, emphasis is put on the use and regular change of absorbent material and cleaning of the genitalia to ensure menstrual hygiene. This can only be achieved by having safe, private and single gender sanitation facilities in schools, access to water supply and a means of safe disposal of menstrual waste at school. In addition, child-friendly education talks and campaigns on menstruation and its hygiene have been organized by various Non-government organizations like AFRIPads, Begirl, and Pulse Uganda Limited to educate the adolescent girls on menstruation and menstrual hygiene in Uganda.



The girl child is the responsibility of the family, government and the community where she thrives. This implies the parents or even the whole family, the school matrons, teachers and school nurses have an important role in the issues concerning the girls like menstruation. However, based on the researchers' preliminary observation, menstrual hygiene knowledge and practices are left for the girl child to discover as a mystery. This lives a knowledge and practical gap. In addition, in the African tradition, issues surrounding menstruation are secretive issues which the girl child should discuss in the privacy with her parents or senior women in the community (Aziato, Dedey and Clegg-Lampsey, 2014).

Unfortunately, majority of the schools especially in resource restricted nations, the topic of menstruation is not discussed at all, because teachers choose to avoid taboo subject (Mahon and Fernandes, 2010; Water Aid, 2009).

Furthermore, even at home, even though mothers are the main source of information concerning menstruation in Africa, the conversation of the topic is discouraged by local culture or religion and mothers often do not wish to talk about it for fear that it will lead to discussions about reproductive health to their teenage girls (Umeora and Egwuatu, 2008). In turn, this leads to unnecessary fear, anxiety, and undesirable practices in a bid to save their fate which could be related to poor knowledge, attitude, and practices.

Consequently, teenage girls turn to using unhygienic practice or staying at home while menstruating which affects their school attendance and performance rates. Poor menstrual hygiene also leads to low self-esteem among girls, school absenteeism and predisposition to PIDs with severe consequences and significant negative outcomes including chronic pelvic pain, dysmenorrhea and infertility in severe cases.

### **1.3 Objectives of the Study**

#### **1.3.1 General Objective**

To determine the Knowledge, attitude, and practices towards menstrual hygiene among secondary school girls in Makindye division Kampala district.

### **1.3.2 Specific Objectives**

- i. To assess the level of knowledge on menstrual hygiene among secondary school girls in Makindye division Kampala district.
- ii. To determine the attitude towards menstrual hygiene among secondary school girls in Makindye division Kampala district.
- iii. To establish the practices towards menstrual hygiene among secondary school girls in Makindye division Kampala district.

### **1.4 Research Questions**

- i. What is the level of knowledge on menstrual hygiene among secondary school girls in Makindye division Kampala district?
- ii. What is the attitude towards menstrual hygiene among secondary school girls in Makindye division Kampala district?
- iii. What are the practices towards menstrual hygiene among secondary school girls in Makindye division Kampala district?

### **1.5 Significance of the study**

- i. The Government/Ministry of Health may use the research findings to disseminate information to the public to raise awareness about the most appropriate ways they can help adolescent girls maintain good hygiene during the menstrual period. This will be done with basis on the examples drawn from the recommendations of the study.
- ii. The study may help researchers and scholars in future who will carry out more insight studies to modify concepts and theories about menstruation and menstrual hygiene. Findings will also contribute to the existing literature and also can be used by future researchers.
- iii. Findings of this study may also help school administrators to devise better ways they can help adolescent girls maintain good hygiene during menstruation period. This will focus on describing the knowledge and practices of adolescent girls towards menstrual hygiene among secondary school girls in Makindye division. This will enable the schools to improve on girl education regarding menstruation and menstrual hygiene practices.
- iv. Findings may also enable the ministry of health to plan for the girl child by issuing free disposable and re-usable pads to help improve menstrual hygiene

- v. The girls may be educated about the significance of menstruation, selection of ideal sanitary menstrual absorbent and proper disposal depending on the findings of the study.
- vi. The findings of the study may enable the researcher to acquire a bachelor's degree in Nursing from International Health Sciences University.

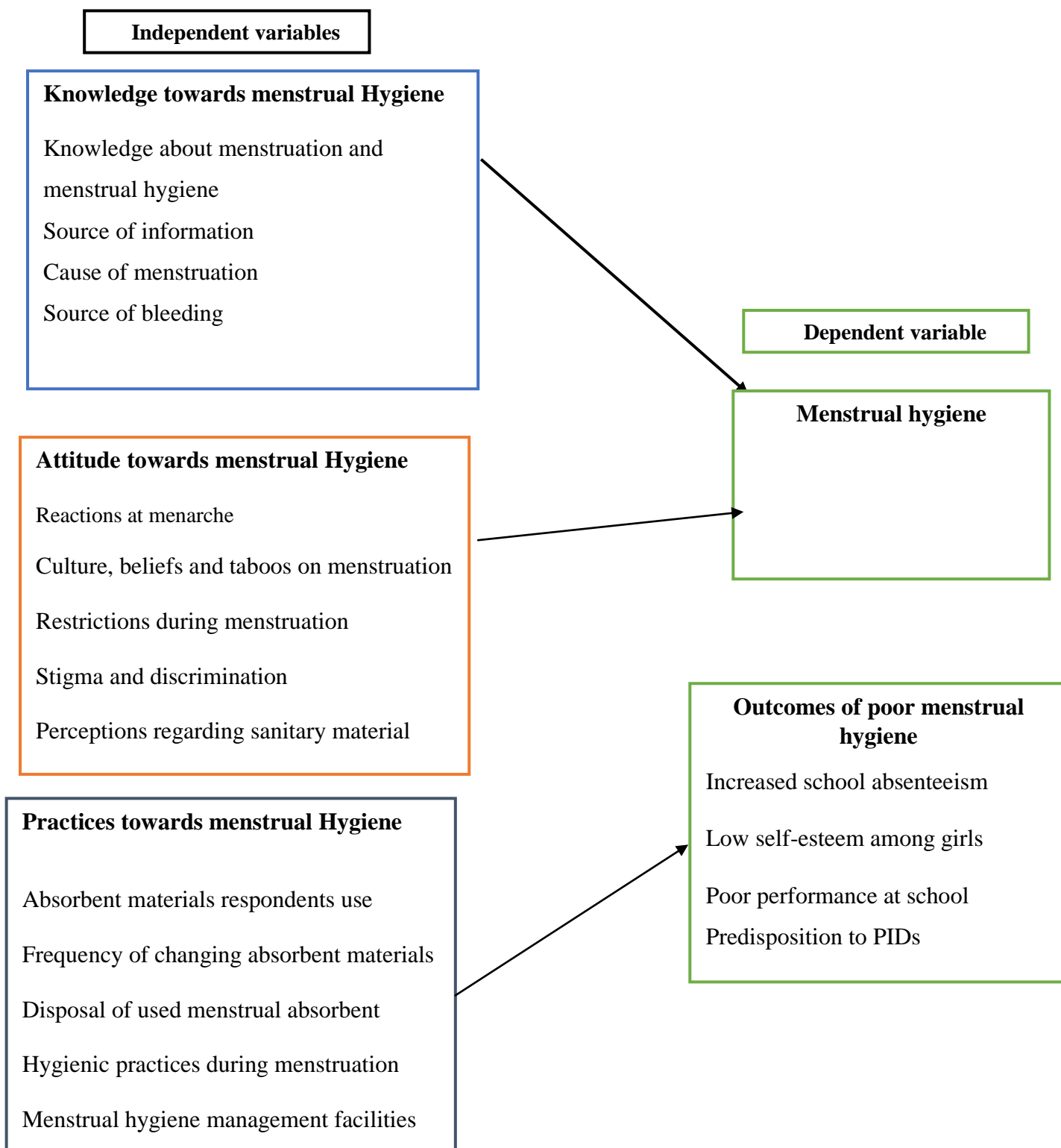


Figure 1: showing the proposed conceptual framework

## **1.6 Description of the conceptual framework**

Figure 1 above shows the relationship between knowledge, attitude, and practices towards menstrual hygiene among secondary school girls in Makindye division Kampala district between April and May 2018.

The independent variables are Knowledge towards menstrual Hygiene which include; knowledge about menstruation and menstrual hygiene, source of information, cause of menstruation and source of bleeding, Practices towards menstrual Hygiene which entails; absorbent materials respondents use, frequency of changing absorbent materials, disposal of used, menstrual absorbent, hygienic practices during menstruation and menstrual hygiene management facilities and attitudes towards menstrual Hygiene reactions at menarche, culture, beliefs and taboos on menstruation, restrictions during menstruation, stigma and discrimination, perceptions regarding sanitary material.

## **CHAPTER TWO: LITERATURE REVIEW**

### **2.0 Introduction**

This chapter presents the literature review cited by other scholars about the knowledge, attitude, and practices towards menstrual hygiene among secondary school girls in Makindye division Kampala district.

### **2.1 Menstruation**

Menstruation is a biological marvel which is exclusive to women that begins in adolescence. It is a monthly uterine bleeding for 4-5 days coming/occurring regularly every 28 days. The first menstruation is called “menarche”. The age of menarche is between 10- 19 years as per WHO (Anusree et al., 2014). Menstruation and the menstrual cycle is characterized by variability in volume, pattern, and regularity, which at the early stages of the growth of the teenage girl can bring about emotional discomfort, mainly to the poorly knowledgeable girl. However, it is exciting to see how some girls come up with their own tactics to handle this phenomenon (Raina and Balodi, 2014).

Women and girls are exposed to numerous prohibitions which may be i) religious like fasting, praying or going to holy places; ii) food-related like ice cream, peanuts, lemon and sugar; iii) domestic like doing laundry, going to the fields and braiding or iv) sexual like sharing the conjugal bed or having sexual relations when menstruating (WSSCC/UN Women, 2014).

### **2.2 Menstrual hygiene**

Menstruation Hygiene Management (MHM) is a concept defined as “women and adolescent girls using the clean material to absorb or collect menstrual blood, and this material can be changed in secrecy as frequently as needed for the period of the menstrual period”. It comprises the use of water and soap to wash the body as required and access to facilities to dispose of used menstrual management materials (Phillips-Howard et al., 2016).

According to UNICEF,(2016) access to basic facilities for MHM is critically important for women’s health, safety, and dignity. Several essential elements are required, including clean materials to absorb or collect menstrual blood, a private place to change these materials as often as necessary, soap and water for washing body as required; and access to safe and convenient facilities to dispose of used materials.

Lack of good hygienic practices such as reuse of unclean napkins or the inadequately dried cloth results in harbouring of micro-organisms, hence increasing the risk of Reproductive tract infections (Seenivasan et al., 2016). Other problems girls face include; insufficient planning for young girls not yet experiencing menstrual hygiene, lack of water to clean and wash the body, lack of materials for handling menstrual hygiene, no secluded space and shower rooms and unsuitable facilities for disposal of materials for those who have used pads.

Worldwide, about 52% of the female population (26% of the total population) is of reproductive age (SNV, 2013). In Egypt, because of cultural and religious beliefs, menstruation is not considered a suitable topic of conversation that leads to lack of precise information for girls to manage their menstruation hygienically (Kitesa, 2016).

In the Nigerian culture, on the other hand, the subject of menstruation and puberty hygiene discussed at home as well as at school in most parts of the country especially in the rural areas was inadequate. This problem was detected mainly in more traditional and poorly educated environment primarily due to some cultural restrictions preventing the flow of correct information given to youngsters (Busari, 2012).

According to 2012 census, the population of women in Uganda was 18,124,684. 24.5% of whom were adolescents, between 10-19 years. 84% of whom were rural and assumed to be unable to sufficiently access and/or have enough money to pay for sanitary pads. Therefore, approximately 3.75 million girls are short of proper sanitary care (SNV, 2014).

## **2.3 Knowledge of menstrual hygiene among adolescent girls**

### **2.3.1 Knowledge of menstruation and menstrual hygiene**

Several studies that have been carried out, predominantly from low-income countries, confirm that a majority of girls start menstruating without having any idea of what is happening to them or why (McMahon et al., 2011; Jothy and Kalaiselvi, 2012).

A cross-sectional study of government and non-government adolescent schoolgirls aged 13-19 years that was carried out by Hakim, Shaheen, and Tak, (2017) in Jodhpur City, India found out that 59.6% of nongovernment school girls and 48.8% of government school girls had knowledge of the menstrual cycle earlier before their menarche. On a contrary, Umeora and Egwuatu, (2008) in a cross-sectional study that was carried out in Doti district, Nepal among 276 students revealed that only 26.4% of the participants had good knowledge on

menstrual hygiene management while 67.4% and 6.2% had fair knowledge and poor knowledge of menstruation respectively.

Other findings from a school-based cross-sectional study by Upashe, Tekelab, and Mekonnen, (2015) revealed that 404 (60.9 %) of the participants had good knowledge about menstruation and its hygiene. 637 (76.9 %) of girls knew that menstruation was a physiological process, 80 (9.7 %) of the girls believed that it was a curse from God. 677 (79.3 %) knew about menstruation before getting menstruation. 622 (75.1 %) of girls knew about menstrual hygiene. 527 (63.6 %) knew that there was a foul smell during menstruation

Fehintola et al., (2017) in a cross-sectional study that was conducted in Ogbomoso High School among secondary high school girls in Oyo State, Nigeria, where the majority (96.4%) of the participants had heard about menstruation before menarche although only 55.9% were conversant with what menstruation is. It was however reported that they did not have the comprehensive experience of menstruation because they were uninformed of the discomfort it comes along with and how it really appears and presents. Additionally, in Nigeria, 56.5% of girls had good knowledge, attitude, and practices towards menstrual hygiene (Lawan, Yusuf, and Musa, 2010).

Ramathuba, (2015) in a quantitative descriptive study of 273 secondary school girls doing Grades 10–12 conducted in the Thulamela municipality of Limpopo Province, South Africa reported that 27% of the participants reported knowledge of the physical changes that relate to menarche, 94% were aware of the social and religious restrictions, while (48%) were aware of hygienic practices and 98% were informed about the use of absorptive materials. The study also reported that 80% of the participants were aware that menstruation is a monthly bleeding, and that it happens to every female; 90% said it is a sign of adulthood. 15% reported that it is the elimination of dirt from the stomach and abdomen.

A study by Miiro et al.,(2018) among 352 compliant girls and boys aged 14–17 years in Entebbe sub-district, Uganda, reported that 23.8% of the respondents had not learnt about menstruation before their first period while a cross-sectional study involving 293 female undergraduate students in Northern Ghana conducted by E. P. K. Ameade and H. A. Garti (2016) stated that 73.4% of the respondents were aware of menstruation before the onset of menarche.



### **2.3.2 Source of information on menstruation and menstrual hygiene**

A school-based cross-sectional study that was conducted by Gultie, Hailu, and Workineh, (2014) among 492 students in Amhara Province, Ethiopia, reported that girls revealed that their main source of information about menstrual hygiene was teachers for 43.1% followed by mothers (22.96%). 38.4% adolescents reported that they had ever had conversations with their friends about menstrual hygiene whereas 25.8% didn't learn about menstrual hygiene in their class.

Similar findings were reported in a cross-sectional study involving 293 female undergraduate students in Northern Ghana that was conducted by Ameade and Garti, (2016) which revealed that 54.3% of the students reported that teachers were their earliest source of information. El-Gilany, Badawi, and El-Fedawy, (2005) reported in a study among 664 schoolgirls aged 14–18 in Mansoura, Egypt that other sources of information besides teachers and parents were mass media, peers and friends.

Omidvar and Begum, (2010) in a study carried out on determinants of menstrual hygiene in South India, reported that girls never thought of their teachers as a better source of information on menstrual hygiene or looking for information regarding it from teachers. They felt uncomfortable to discuss issues concerning menstrual hygiene with their teachers as they felt ashamed before them. Participants thought that some teachers never had offsprings thus were not good examples to be asked how to sustain good hygiene during menstruation.

Tamiru et al., (2015) reported in a baseline survey that was conducted in five countries (Ethiopia, Uganda, South-Sudan, Tanzania, and Zimbabwe) that more than 80% of the girls interviewed agreed that mothers are their source of information. A cross-sectional study that was conducted by Umeora and Egwuatu, (2008) in Nigeria reported that although mothers are the main source of information regarding menstruation in Africa, conversation on menstruation is discouraged by local culture or religion and mothers often do not wish to talk about it for fear that it will lead to discussions about reproductive health to their young girls. Miiro et al., (2018) in a feasibility study on menstrual health and school absenteeism among adolescent girls in Uganda revealed that about half the girls (52.4%) said they did not discuss their periods with their fathers.

Guya, Mayo, and Kimwaga, (2014) in a descriptive cross-sectional study among 12 secondary schools of Kinondoni and Bagamoyo district in Tanzania stated that 55.7% of girls preferred menstrual hygiene teaching to be provided at schools, 42.3% preferred at home and 2% preferred to other places like places of religious worship.

### **2.3.3 Cause of menstruation**

Multiple studies highlighted the cause of menstruation as being hormonal. Tegegne and Sisay, (2014) reported that only 8.35% and 23.05% of them knew precisely as menstruation is due to hormones. Fehintola et al., (2017) found out that about 38.93% of respondents said it is caused by hormones. Upashe, Tekelab, and Mekonnen, (2015) reported that 62.9 % knew that the cause of menstruation was a hormone. Adhikari et al., (2007) found out that only 6.0% of girls knew that menstruation is a physiologic process, 36.7% knew that it is caused by hormones.

On the contrary, Kitesa, (2016) in a descriptive cross-sectional study to assess knowledge and practice of adolescent school girls towards menstrual hygiene and its determining factors in Boset district, Ethiopia reported that 19.1% of the respondents mentioned that menstruation is a curse from God, 5.6% of the respondents mentioned that menstruation is a disease and only 3.5% mentioned as they do not know about cause of menstruation. Similar findings were reported by Seenivasan et al., (2016) where only 14.6% of the respondents didn't know the cause of menstruation while only 8.8% of the girls recognized it as due to hormonal changes and only 2% mentioned disease or curse/sin as the cause of menstruation.

Similarly, Balqis, Arya, and Ritonga, (2016) in a descriptive cross-sectional study on knowledge, attitude and practice of menstrual hygiene in Jatinangor among 238 female high school students reported that all of the participants knew that menstruation was a normal process for women but about 19.33% of them did not know that menstruation occurs because of a hormone.

### **2.3.4 Source of bleeding**

Chandra-Mouli and Patel, (2017) in a study that examined 81 studies published in peer-reviewed journals between the years 2000 and 2015, reported that a knowledge gap among girls is a lack of mindfulness regarding the origins of menstrual blood. Not more than a third of girls correctly identified the uterus as the source of menstrual blood in rural Nepal. Almost

no girls were aware of the source of their blood (2.5%), with closely two-thirds (63.3%) being aware. In cities in Pakistan and Nigeria, 37.2 and 78.7% identified the uterus as the source, respectively, related to 82.9% of school-going girls in rural Uganda.

A study that was conducted in India to assess menstrual hygiene knowledge, practice and restrictions among 150 girls between 12 to 20 years reported that only 12% of the girls were aware that the uterus is the source of blood flowing during the menstrual cycle while the largest proportion of girls (55.33%) were not (Raina and Balodi, 2014). Similar findings were reported by Sudeeshna and Aparajita, (2012) in a study on determinants of menstrual hygiene among adolescent girls reported that only 17.9% of the adolescent girls knew that uterus was the source of blood during menstruation.

On a contrary, Ramathuba, (2015) in a quantitative descriptive study on menstrual knowledge and practices of female adolescents in Vhembe district, Limpopo Province, South Africa among 273 secondary school girls reported that 65% the vagina, while 11% stated that it is from the abdomen, with 5% of the girls mentioning that menstrual blood is from the stomach. Similar findings were reported in a cross-sectional study that was conducted among 500 school going adolescent girls in Chennai reported that in a study from Navi Mumbai, only 33.6% of the girls correctly stated the uterus as the source of bleeding whereas 52.1% girls mentioned the urethra (Seenivasan et al., 2016).

Fehintola et al., (2017), in a study on assessment of knowledge, attitude and practice about menstruation and menstrual hygiene among secondary high school girls in Nigeria reported that above 40% of the participants reported that the source of menstrual blood is vaginal while only 22.37% said it is from the uterus.

## **2.4 Attitude on menstrual hygiene among adolescent girls**

### **2.4.1 Reactions at menarche**

The varied responses to menarche may depend on the degree to which the girls have been prepared (Kamath et al., 2013). A cross-sectional study involving 293 randomly selected female undergraduate students in Northern Ghana revealed that 38.5% of the respondents were struck by fear and panic on seeing blood flowing from their genitals for the first time at menarche (Ameade and Garti, 2016). Other reactions at menarche as reported by Tiwari, Oza and Tiwari, (2006) in a survey regarding knowledge, attitudes and beliefs about menarche of adolescent girls in Anand district, Gujarat stated that when the girls were asked if they felt

they had been mentally ready, 48.2% of them felt that they were not mentally ready for menarche whereby at the time of their first menstrual period, 28.3% felt shame, 12.6% felt guilty and 20.6% had a sense of fear.

Ramathuba, (2015) on the other hand in a qualitative descriptive study carried out in Vhembe District, Limpopo Province, South Africa found out that almost three quarters of the respondents feared and had anxiety at menarche and could not sustain good hygiene as some regarded it was abnormal and no need to regularly clean the bleeding. Some of the participants thought the bleeding would go with time thus no need to clean it off time to time. A community-based interventional study was conducted among 217 adolescents of Kalamboli, Navi- Mumbai, Maharashtra, India reported that out of the 197 girls who had attained their first menstrual bleeding, the reaction to first menstruation was noted. 23.35% of them felt dirty and 20.81% of them became angry thinking that why only girls should have it while boys don't. 20.30% girls felt weird, 19.30% got irritated while 8.63% felt good that they grew up and 7.61 % girls did not react in any manner (Nemade, Anjenaya and Gujar, 2009).

Mohamed, Mohamed and Al-ajeal, (2011) in a cross-sectional study to assess knowledge, beliefs and practices regarding Menstruation among adolescent schoolgirls in Seiyun City, Yemen among 498 adolescent girl students reported that the majority of girls (81%) had felt sad, tense and/or scared at the first time of menstruation, while only 19% had normal feeling.

#### **2.4.2 Culture, beliefs and taboos on menstruation**

Menstruation problems are highly reinforced by cultural, religious, traditions, local customs and taboos concerning menstruation. For example, some of the children were taught not to use disposable sanitary pads as it brings cancers and if the used materials disposed of in open spaces where people can see them, will be used for witchcraft and girls failing to conceive or will die, mother or father cannot dialogue with their children about menstrual hygiene issues and if will do so, they could die or some were taught to have sex when they feel pain during their menstruation (SNV, 2014).

A study regarding the knowledge level of 150 girls of Dehradun-the capital of Uttarakhand, India reported that menstrual blood was seen as dangerous, where women observed to wash the wrapper they wore only during menses at night when others were asleep because of a belief that menstrual fluids could be misused for sorcery (Raina and Balodi, 2014). Similar

findings regarding the need to hide menstrual cloths for fear of being cursed were found in Tanzania, Ghana, Kenya, and Ethiopia (Kirk and Sommer, 2006; McMahan et al., 2011).

Sapkota et al., (2014) reported in a descriptive study done among 61 female adolescents of Shree Himali Secondary School, Panchkanya, Sunsari that more than half of the respondents (55.7%), stated that menstruating ladies are not allowed to do household chores, followed by 41% who said that menstruating ladies are not allowed to attend religious functions and go to temples. Almost one in every five respondents (16.4%) reported that there is still a practice of keeping menstruating ladies away from home or in corner of the room.

Kaiser, (2015) in a study on Menstrual Hygiene Management reported that in in some cultures, women and girls are told that during their menstrual cycle they should not bathe (or they will become infertile), touch a cow (or it will become infertile), look in a mirror (or it will lose its brightness), or touch a plant (or it will die).

### **2.4.3 Restrictions during menstruation**

Isolation of the menstruating girls and restrictions being imposed on them in the family have reinforced a negative attitude towards this phenomenon resulting in adolescent girls remaining ignorant of the scientific facts and hygienic health practices, necessary for maintaining positive reproductive health. In India, restrictions are laid on young girls by participating in household and other religious activities during menstruation. These restrictions extend to eating certain foods like jaggery and papaya as well (Raina and Balodi, 2014).

Shoor P., (2017) in a study carried out in India on knowledge, attitude and practices of menstrual health among adolescent school girls in urban field, showed that out of 452 girls that participated in the study, majority 402 (88.92%) of the adolescents had restrictions during menstruation and the general study response reported that majority (53.98%) were not allowed to read the Quran or perform Pooja (lead prayers), 54.51% were forced by their family members to follow restrictions. Few (37.7%) of the girls had restrictions on food preparation during menstruation. They were not allowed to prepare food for the family members as they were perceived as being unclean.

Sapkota et al., (2014) reported in a descriptive study was done among 61 female adolescents of Shree Himali Secondary School, Panchkanya, Sunsari that 19.7% of the respondents

practiced any restrictions while 80.3% girls did not practice any restrictions during menstruation. Among them, 58.4% weren't allowed to cook and visit temples and 25.0% girls were not allowed to do the household work (cooking) and touch male family member.

Dunnivant and Roberts, (2013) in a study carried out in Ghana on the paradoxes of religious women's experiences of menstruation revealed that various religious rituals restricted girls from some activities thus having a negative attitude towards menstruation hygiene. Islam unlike Christianity highly considered menstruation as a period of impurity due to uncontrolled blood flow.

Kirk and Sommer, (2006) revealed that discussion of menstruation highlights was a taboo and uncultured topic among most of the community members which led to a negative attitude towards management of hygiene during their menses.

A cross-sectional study to assess Knowledge, Beliefs and Practices Regarding Menstruation Among Adolescent Schoolgirls in Seiyun City, Yemen among 498 adolescent girl students reported that many students (55.8%) believed that girls must avoid physical exertion and play during menstruation, as well as they must avoid showering (32.2%), and avoid hair cutting (24.7%) (Mohamed, Mohamed and Al-ajeal, 2011).

#### **2.4.4 Stigma and discrimination**

A Pilot Study on sanitary pad interventions for girls' education in Ghana by Montgomery P, Ryus CR, Dolan CS, Dopson S, (2012), found out that most respondents had a positive attitude towards menstrual hygiene where most of the girls feared to stain their school uniforms with menstrual bleeding. They preferred the use of effective absorbents and frequent mentoring of their private parts to ensure there was not bleeding leakage which would make them uncomfortable.

A baseline survey report on School Girls' Menstrual Hygiene Management issues in eight districts of Tanzania; (Chato, Magu, Sengerema, Karatu, Babati, Siha, Njombe and Mufindi districts) revealed that, during menstruation respondents mentioned that they usually feel like they smelt bad similar to a rotten egg due to the absence of appropriate facilities at schools and home places hence feeling ashamed, embarrassed and restricted. They hence decide to isolate themselves from others by staying at home throughout the menstrual period without attending school. 70% of the interviewed girls revealed that using disposable sanitary pads

will relieve them of those stigmas hence improving the attitude towards menstrual hygiene (SNV, 2014).

A study on menstruation and body awareness through linking girls' health with girls' education among 149 girls by Kirk and Sommer, (2006) reported that fathers, uncles, brothers and male cousins appear to have very little factual information on menstruation. They understand it as a mysterious weakness of women rather than a biological and normal recurring experience of life for post-pubescent girls and women. A series of myths, euphemisms, and mysterious language have been adopted to hide this lack of knowledge and understanding; for example, the phrase 'going to the moon' is commonly used to refer to the menstrual period and yet Forum of African Women-Uganda (FAWE U) discovered that few men and boys had any idea of what this actually was. This likely serves to reinforce misunderstandings about natural bodily processes and to perpetuate the stigma that is attached to menstruating women and girls which leads to a negative attitude towards menstruation.

Guya, Mayo and Kimwaga, (2014) in a study on Menstrual Hygiene Management in Secondary schools in Tanzania reported that some girls suggested that boys must be educated on Menstrual Hygiene Management, on grounds that boys need to know what is happening to girls and support them where necessary. Some girls reported that boys contribute so much to the girls' school dropout rate due to their teasing behaviour. However, other girls were doubtful if the education of boys would be necessary and beneficial as it may lead to increase in mocking to girls.

The Menstrual Hygiene Management Charter- Uganda 2015 highlights that quite too often, women and girls who suffer from stigma, are inadequately prepared to manage menstrual hygiene, lack washrooms, are deprived of clean water and necessary materials for managing menstrual hygiene and lack facilities for disposal of menstruation materials/pads. As a result, girls experience irregular school attendance, while others drop out of school and women experience similar workplace challenges associated with their menstrual cycle (Government of Uganda, 2015).

#### **2.4.5 Perceptions regarding sanitary material**

A study that aimed at reviewing the current evidence concerning menstrual hygiene management in resource-poor countries by Kuhlmann, Henry and Wall, (2017) reported that qualitative studies indicate that girls who know about commercial sanitary products may prefer these products because they are seen as more comfortable and less likely to leak, but for many girls such products are usually unavailable and/or unaffordable. Use of commercially produced sanitary pads was reported to be more common among girls in private schools, which typically serve wealthier families.

A cross-sectional study that investigated perception as well as behaviour on the use of sanitary pads during menstruation among 140 girls in Bayelsa State, Nigeria reported that revealed that 67.1% of adolescent girls had the perception that on using sanitary pads they felt good and nice, 10.8% of adolescent girls perceived it was confusing at first, 12.1% of adolescent girls felt it was frightening, while 10.0% of adolescent girls were expectant. Over 40.0% of the adolescent girls perceived a new-found confidence on use of the sanitary pad, 29.3% felt no staining with use, and 17.1% of adolescent girls perceived no difference on use of sanitary pads, while 13.6% perceived they had a reduction of pain on use of sanitary pads. 60.0% of adolescent girls on use of sanitary pads felt protected, 18.6% felt clean and 13.6% felt grown up on use of the sanitary pad. 67.1% felt satisfied and positive on use of sanitary pad during menstruation. Most girls are left to cope as best as they can with rags or other insufficient protection (Adika, V.O, Yabga, J, Apiyanteide, F.A, Ologidi, P.W and Ekpo, 2011).

A survey on Menstrual hygiene in South Asia showed girls' reasons for not using sanitary pads included lack of awareness about them (41%), high cost (39%), the fact that they were not easily available(33%) (Mahon and Fernandes, 2010).

Trinies et al., (2015) in a qualitative study regarding uncovering the challenges to menstrual hygiene management in schools in Mali among 26 girls and key informant interviews with 14 teachers and school directors reported that girls who had tried pads generally preferred them to cloths, but cost and access hindered their use.



## **2.5 Practices of menstrual hygiene among adolescent girls**

### **2.5.1 Absorbent materials respondents use**

Suhasini and Chandra, (2016) in a community based cross-sectional study that was carried out over a period of one year, in Ashoknagar of J. N. Medical College, Belagavi among 625 late adolescent girls between 16 - 19 years reported that 43.4% of the adolescent girls used sanitary pads, 33.1% used cloth, 22.2% used both sanitary pads and cloth as per the availability and as low as 1.3% used tampon. Among the 346 cloth users, 63.0% were using reused cloth and 37.0% used afresh cloth every cycle.

A mixed-method research combining quantitative and qualitative methods in Northeast Ethiopia among 595 adolescent school girls reported that 35.38% of students used sanitary napkins and the rest (55.60%) and (9.01%) of them used homemade cloth and underwear as menstrual soak-up during their last menstrual period respectively. Among 294 students who had used soak-ups other than sanitary napkins, 91.84% of them reused the material (Tegegne and Sisay, 2014).

Ameade and Garti, (2016) in a study carried out in Ghana found out that, materials such as ash, soil, cotton wool, cloth, old pieces of mattresses, newspapers among others were used before the introduction of sanitary pads though many of them are still be used by girls especially those from low-income families.

Kuhlmann, Henry, and Wall, (2017) in a study on menstrual hygiene management in limited-resource countries reported the use of menstrual cups during menstruation. Despite their use, few of the girls could access the cups due to lack of money to buy them. Similar findings were reported by Oster and Thorn (2011) in a study carried out in Scandinavian countries.

Crofts, T. and Fisher, J., (2012) reported that blood absorption by tampons and menstrual cups was rare. Only one girl knew about (and used) tampons although most girls were fascinated by them. A lack of knowledge of and accessibility to tampons were the main reasons given for not using them. In reality, low demand meant high prices, which was also assumed to be a significant limiting factor; a few teachers associated tampons with the “rich classes”. Despite being curious, most girls stated that they would not use insertion products even if they became more widely available for fear they would “get stuck”, be difficult to insert or painful. Insertion materials generally were seen as culturally inappropriate, with girls questioning their effects on fertility and health.

A study carried out in Nigeria discovered that 31% to 56 % of the schoolgirls use toilet tissue or cloth to absorb their menstrual blood as opposed to menstrual pads while in Ethiopia, although 92 % of the students were aware of menstruation before menarche, their utilization of sanitary material was as low as 37.6 % and 62.4 % were using rags and pieces of cloth while 11% of girls change their menstrual cloths once a day (Fehintola et al., 2017).

A study that reviewed the literature on hygienic practices in adolescent girls found out that 79% of the adolescent girls used pads and 21% used clothes. The use of pads was higher which was probably because the availability was high in these areas and also due to the influence of television which has increased awareness regarding availability and use of sanitary napkins (Eram, 2017).

A study among 664 schoolgirls aged 14–18 in Mansoura, Egypt reported that 66.8% of the girls used sanitary pads, while 15.9% and 12% used re-usable cloths or old pieces of cloth thrown away after use, respectively. The use of sanitary pads was significantly higher among girls enrolled in general secondary schools (El-Gilany, Badawi and El-Fedawy, 2005).

Udayar, Kruthika and Devi, (2016) in a cross-sectional study that was carried out among 583 adolescent girls aged 10-19 years in the Paramasamudram village of Kuppam Mandal of Chittoor District, Andhra Pradesh found out that sanitary pad usage was highest among the materials used during menstruation (78.5%), followed by usage of new cloth (13%). 43% of subjects used to change the absorbent once.

Miiró et al., (2018) in a feasibility study on menstrual health and school absenteeism among adolescent girls in Uganda found out that during their last period, 86.9% girls reported using disposable manufactured sanitary pads 12.5% used a locally-manufactured re-usable pad (e.g. AFRIPads), and about a third of girls (32.2%) used a combination of methods.

A cross-sectional study by Boosey, Prestwich and Deave, (2014) that explored the menstrual hygiene practices and knowledge of 140 girls in the Rukungiri district in Uganda reported that even though girls report using mixed methods, the most common product used to absorb menstrual blood is cloth. A cross-sectional study among 498 adolescent girl students from five randomly selected schools in Seiyun city, Hadramot, Yemen found out that about half of the participants were using sanitary pads during menstruation, while most of the remaining girls (47.6%) were using old cloth pieces or towels (Mohamed, Mohamed and Al-ajeal, 2011).

### **2.5.2 Frequency of changing absorbent material**

A cross-sectional study carried out among 140 adolescent girls in Bayelsa State, Nigeria reported that 46.4% of the adolescent girls used 2 pads per day, 30.0% used three pads, with 12.9% using one pad while only 10.7% used more than three pads daily (Adika, V.O, Yabga, J, Apiyanteide, F.A, Ologidi, P.W and Ekpo, 2011).

Miir0 et al., (2018) in a feasibility study on menstrual health and school absenteeism among adolescent girls in Uganda revealed that most girls (81.9%) reported changing their protection fewer than 4 times in a 24 hours period, and almost two-thirds (64.3%) reported ever having experienced leakage of menstrual blood on to their outer clothes, with 18.7% reporting having stained their outer clothes during their most recent menstrual period.

Jitpure, (2016) in a study on assessment of menstrual hygiene, menstrual practices and menstrual problems among 100 adolescent girls living in Urban Slums of Bilaspur (Chhattisgarh) reported that out of 79 girls who used sanitary napkins, 1.3% girls changed it once a day, 35.4 % twice a day, 40.5% girls thrice a day, 18.9% of girls changed it 4 times a day, and 3.8% girls less than 4 times a day.

A study on menstrual hygiene in Ugandan schools investigating low-cost sanitary Pads by Crofts, T, and Fisher, (2012) reported that sanitary protection materials were usually changed at least once a day in school. A few girls avoided changing due to poor hygiene conditions and lack of privacy.

### **2.5.3 Disposal of used materials**

Lawan, Yusuf, and Musa, (2010) in a study carried out among adolescent schoolgirls in Kano Nigeria, revealed that most of the girls never wrapped up the absorbent materials well after use. They even never disposed of them in toilets which led to the breeding of insects and vermines that were also dangerous to their personal hygiene as they were a source of infections. This led to overall poor hygiene among most of the respondents.

Similar findings were reported by Gultie, Hailu and Workineh, (2014) in a study carried out in Ethiopia where the majority of the respondents indiscriminately disposed of the absorbent materials they used to control menstruation. Findings had indicated a positive association between adolescent good hygiene practice and their parents' level of education where adolescents from families with parents with less than secondary education had poor menstrual hygiene as compared to adolescents whose parents had greater than secondary education. Well

educated mothers were more likely to know the proper hygiene and sanitary practices during menstruation and talk to their children unlike mothers with low levels of education who never very little about menstrual hygiene.

Madhusudan et al., (2014) in a study on knowledge and practices of menstrual hygiene among secondary school girls of Hasokote, rural Bangalore showed that majority of the respondents practiced safe and sanitary disposal of absorbent materials used during menses. They safely disposed of absorbent material without wrapping in the toilets. Dasgupta and Sarkar, (2008) also showed safely disposal of absorbent materials. Findings indicated that respondents burnt or wrapped the absorbent materials used during menses and disposed of it in places where solid waste was disposed of.

A descriptive, cross-sectional study that was carried out among 190 adolescent girls of a rural secondary school of West Bengal reported that most of the girls threw sanitary napkins and reusable cloth indiscriminately in a pond (53%) or in the nearby bamboo garden (45%). It is worthwhile to note that these ponds were being used for daily chores like the washing of utensils, clothes or even for taking bath (Sudeeshna and Aparajita, 2012).

A community-based cross-sectional study that was carried out over a period of one year, in Ashoknagar of J. N. Medical College, Belagavi among 625 late adolescent girls between 16 - 19 years reported that of the 410 sanitary pad users, 69.3% of them wrapped the pad in paper and disposed of it in dustbin, 11.2% flushed the pad in the toilet, 16.3% threw it indiscriminately and 3.2% of the girls burnt the pad (Suhasini and Chandra, 2016).

Hakim, Shaheen, and Tak, (2017) in a cross-sectional study reported that almost two-thirds of girls from both study groups had a practice of throwing the absorbent material with domestic waste. Burning was reported as a second commonest method of absorbent disposal. Difficulty in disposing of was reported by 8.33 % of non-government school and 20.6 % of government school non-sanitary pad user girls.

#### **2.5.4 Hygienic practices during menstruation**

Good menstrual hygiene practices include the use of sanitary pads and adequate washing of the genital areas. It is essential for women and girls of reproductive age to have access to clean and soft absorbent sanitary products in order to protect themselves from RTIs. Thereby in turn preventing the complication of RTIs like chronic pelvic pain, dysmenorrhea and in severe cases infertility.

A cross-sectional study that was carried out in Doti district, Nepal among 276 found out that 68% of the respondents washed hands after changing a sanitary pad and 61 % used soap and water for washing hands (Yadav et al., 2017).

A study that reviewed the literature on hygienic practices in adolescent girls reported that 40% of the girls washed their genitalia with soap and water, 41% with only water and only 19% with water and disinfectant. Therefore it was concluded that personal hygiene practices were unsatisfactory in the study (Eram, 2017). Similar findings in a school-based cross-sectional study to assess the knowledge and practice of 430 adolescent school girls towards menstrual hygiene and its determining factors in Boset district, Ethiopia, stated that the majority of the respondents, (67.9%) washed their genitalia area with soap and water. However, there is frequency gap taking bath or washing genitalia area. As a result, only 56.5% of the respondents take bath or wash their genitalia areas daily while 3% do not take bath at all during the menstrual episode (Kitesa, 2016).

Miiró et al.,(2018) in a feasibility study on menstrual health and school absenteeism among adolescent girls in Uganda revealed that that only 4 girls reported adequate menstrual hygiene management at their last period using four components of the standard definition that were asked about directly including, a proportion (35%) who only used manufactured products (which may be locally-made re-usable pads (e.g. AFRI- pads, disposable manufactured pads (e.g. Always) or tampons) during their last period, a proportion (35.5%) who use disposable pads or tampons and dispose of them in a bin or incinerator, a proportion (14.2%) who reported always having access to water and soap at school and a proportion of girls who said they do not feel anxious about their next period.

A cross-sectional study regarding menstrual hygiene management amongst schoolgirls in the Rukungiri district of Uganda and the impact on their education reported that one of the girls' school toilets assessed in any of the schools were adequate for good menstrual hygiene management due to their lack of cleanliness, light, access for girls with disabilities and soap and water, in addition to the poor ratio of toilets for the number of girls (Boosey, Prestwich and Deave, 2014).

Crofts, T. and Fisher, J., (2012) reported in a cross-sectional study that most of the schools visited, water and sanitation facilities were inadequate for menstruating girls to clean themselves during the day. Latrine blocks and bathing shelters had no toilet paper for anal

cleansing, so girls relied on old pieces of paper, or hands and water. Half the schools visited had onsite water such as an outside standpipe or hand pump, but only one sanitation block had water with an inconsistent supply. In all other cases, water was collected by the bucket, basin or jerry can and taken into the latrine block or bathing shelter. It was acceptable for boarders to be seen carrying water into sanitation facilities before or after school, but girls were reluctant to carry water during the day as it would indicate they were menstruating. This resulted in poor hygiene and embarrassment.

A study among six rural schools in the Nyanza Province of Western Kenya found out that girls reported that it is difficult to manage their periods in school due to a lack of water and an inability to bathe, which is a preferred practice if a girl is menstruating while at home. Girls reported that bathing is difficult or impossible because school washrooms are not private, lack water, or have cold water (McMahon et al.,2011).

A descriptive cross-sectional study among 250 students in Tehran found out that while most of the students in all three groups believed in the effectiveness of personal hygiene practices on the reduction of menstruation pain, only 79 girls said that they take a bath on the first days of their menstrual period. Additionally, 162 girls reported not taking a bath at the beginning days of their period, from which, 85 girls reported not taking a bath even after eight days from the beginning of their menstrual period (Poureslami and Osati-Ashtiani, 2002).

Shanbhag et al., (2012) in a study carried out among adolescent girls in resource-limited settings around Bangalore City, Karnataka, India found that, majority 83.26% of the respondents took bath daily during menstruation where 56.22% reported more than twice a day of cleaning of the external genitalia which was good menstrual practice.

Shah, Khisro, and Rahman, (2012) in a study carried out in Bangladesh revealed that nearly all the girls had good personal hygiene. A vast majority (99.58%) of the girls took bath daily during menstruation using water and soap. This could be due to the fact that most of the residents in Jatinangor were Muslims and this religion necessitated them to regularly take care of personal cleanliness before prayers even though they were restricted to perform prayers, they were still required to take frequent baths in order to maintain their personal dignity.

On the contrary, Ramathuba, (2015) in a study carried out in Vhembe District of Limpopo Province in South Africa, the majority of respondents had poor menstrual hygiene practices

where 58% of the adolescents bathed once during menstruation while a few 48% bathed twice.

SNV, (2013) in a study that was carried out in seven districts (Arua, Adjumani, Bundibugyo, Kasese, Kyenjojo, Lira, and Soroti) on menstrual management in Uganda reported that cleaning of cloths is often done without soap or with unclean water and drying may be done indoors rather than in sunlight or open air due to social restrictions and taboos.

Awasthi, (2016) in a cross-sectional study among 100 adolescent girls residing in a slum area of Lucknow reported that the personal hygiene was good in 30% of urban girls and fair in 63.33% girls. Among slum girls, the personal hygiene was good in 25%, fair in 52.5% and poor in 7.5 %. The urban adolescent girls in respect to good personal hygiene significantly outnumbered the slum adolescent girls.

Uganda Red Cross Society, (2015) in a menstrual hygiene survey project that was carried out in Arua and Adjumani districts revealed that 38% of the participants acknowledged the rope, bucket, pegs as very useful items for enabling proper washing and drying of the reusable pads.

### **2.5.5 Menstrual hygiene management facilities**

Adams et al., (2009) in a study on water, sanitation and hygiene standards for schools in low-cost settings stated that the majority of adolescent girls had no facilities at school to bath from or change their underwear after the menses. “Most of the toilets in schools were unclean and lacked soap, water, had insufficient light and lacked privacy”. Similar findings were reported by Pilitteri, (2012) in a study carried out in Malawi which revealed that there were no private facilities for body washing. The study added that open-plan showers in boarding schools were unpopular, even when they could be used, the lack of water often prevented this. Girls got up at four in the morning to shower and wash menstrual cloths before anybody could see. They were rarely washed correctly due to lack of water and soap. Such problems were eventually responsible for high rates of absenteeism among most of the school girls.

Uganda Red Cross Society, (2015) in a menstrual hygiene survey project that was carried out in Arua and Adjumani districts reported that 39% to have difficulties in finding a private, comfortable place to change disposable pads. Other findings on menstrual management in Uganda by SNV, (2013) revealed that a total of 70% of the head teachers and 80% of the senior head teachers stated that they are not satisfied with menstrual facilities at their schools.

In addition, over 60% of the girl pupils stated that they need better facilities. Similarly, Girls in Control (GiC) project that was implemented in 606 primary schools in the districts of Dokolo, Lira, Mubende, and Mukono in Uganda in 2016 which mainly targeted adolescent school girls stated that the schools lacked hand washing and water facilities, as well as incinerators to properly dispose of menstrual products. Also, girls often shared the few existing latrines with boys, and exclusive changing rooms for girls were largely nonexistent (SNV, 2016).

### **Conclusion**

Menstruation is an important pubertal development. A lot of misconceptions about this process translates into poor knowledge and hygienic practices on menstruation. Adequate knowledge of menstruation and its hygienic practices will prevent reproductive ill-health.



## **CHAPTER THREE: METHODOLOGY**

### **3.0 Introduction**

In this chapter, the description of the research method is given. It includes the study design, study setting, study population, sample size determination, sampling method, the definition of study variables, data collection method and tools, quality control for data, data presentation and analysis, ethical issues, limitations of the study, and plan for dissemination of the study results.

### **3.1 Study design**

A descriptive-cross sectional study was employed involving the use of quantitative methods of data collection. This was aimed at collecting detailed information on knowledge, attitude and practices towards menstrual hygiene at one point in time in a short period with no lost-to-follow-up of study participants.

### **3.2 Study area**

The study was carried out in two selected secondary schools in Makindye Division, Kampala District. These included Kibuli Secondary School located on Kibuli Hill in the south-central part of Kampala and Ebenezer secondary School located in Kisugu along Kiwuliriza Road in Kampala. The coordinates of the district are 00°18'49" N, 32°34'52" E. This study area was used because the majority of the studies on menstrual hygiene have been conducted in rural settings and very few among urban populations.

### **3.3 Study population and study participants**

The target population comprised of all adolescent girls in Makindye division, Kampala district. The accessible population comprised of adolescent girls between S.1- S.4 attending Kibuli Secondary School and Ebenezer Secondary School.

### **3.4 Sources of data**

The major source of data was primary data from adolescent girls. This was collected using researcher administered questionnaires. Secondary data was collected from published journal articles and books, review of records and programme reports.

### 3.5 Eligibility criteria

#### 3.5.1 Inclusion criteria

The study included all adolescent girls from S.1- S.4 in Kibuli Secondary School and Ebenezer secondary school who had got their menarche.

#### 3.5.2 Exclusion criteria

All adolescent girls who were not present at the time of data collection, those who were critically ill and incapable of providing informed consent were excluded from the study.

### 3.6 Sample size determination

The sample size adopted the Kish and Leslie sample size formula given below, (Kish, and Leslie, 1965).

$$N = \frac{Z^2 (1-P) P}{d^2}$$

Where:

N = sample size

z = 1.96, critical value at a significance level of 95%

d= Margin of error 5% (0.05)

P is prevalence of knowledge about menstruation at 85.7% (Jalane Mekonnen et al, 2014) N

$$N = \frac{z^2 P (1-P)}{d^2}$$

$$N = \frac{1.96 \times 1.96 \times 0.857 (1-0.857)}{0.05 \times 0.05}$$

$$N = \frac{3.8416 \times 0.1226}{0.0025}$$

$$N = \frac{0.4708}{0.0025}$$

**N = 188 respondents**

However, to account for non-response, the researcher added a 4% of the above calculated sample size

$$4 \times \frac{188}{100} = 7.52 \text{ which is approximately } 8$$

188 + 8 = 196 respondents were employed in this study.

**Therefore, the sample size comprised of 196 respondents.**

### **3.7 Sampling technique**

Both probability and non-probability sampling techniques were employed. Purposive sampling was used to select the study schools including Kibuli Secondary School and Ebenezer Secondary School because the schools were more accessible to the researcher than other schools in the area. The researcher used systematic random sampling in the selection of the adolescent girls from each class to participate in the study. This was done to give all girls an equal opportunity to participate in the study.

### **3.8 Sampling procedures**

Prior to the research, the researcher informed the schools of the selection criteria that respondents have to meet to participate in the study. Systematic random sampling was used to select study participants from different classes namely; S.1, S.2, S.3 and S.4.

The researcher carried out the study over a period of 10 days (That is; from Monday to Friday on each of the two weeks). Out of the 196 respondents needed for the study, 98 respondents participated in the study from each of the two schools.

On accessing each of the schools every day, the researcher tossed a dice to determine which class to start with and the process continued until the four classes were determined. The researcher then introduced herself to the class then briefed them about the intentions of the study and seek their consent to participate. Attendance forms for each class were obtained and using systematic random sampling, 98 respondents were chosen by selecting every third girl's name on the list of each class (S.1-S.4). This was done from classes S.1 to S.4 until the desired sample size was obtained.

Inclusion into the study was entirely on a voluntary basis and girls agreed to participate in the study were reassured that all information obtained was confidential and secure.

### **3.9 Study variables**

#### **3.9.1 Dependent variable**

The dependent variable of this study was **practices of menstrual Hygiene** which include; absorbent materials respondents use, the frequency of changing absorbent materials, Disposal of used menstrual absorbent, Hygienic, practices during menstruation, menstrual hygiene management facilities

### **3.9.2 Independent variables**

The study was influenced or guided by three independent variables which included;

- i) **Knowledge on menstrual Hygiene** which includes; knowledge about menstruation and menstrual hygiene, Source of information, Cause of menstruation and source of bleeding
- ii) **Attitudes towards menstrual Hygiene** which include; reactions at menarche, culture, beliefs, and taboos on menstruation, restrictions during menstruation and stigma and discrimination and perceptions towards the sanitary material.

### **3.10 Data collection tool**

Data was collected using a self-administered, semi-structured, pretested questionnaire with both open and close-ended questions which were pre-coded for easy data entry and analysis. It consisted of questions on knowledge, attitude and practices regarding menstrual hygiene. The research questions were developed by the researcher according to the study objectives, literature review and theoretical framework of the study.

The questionnaire was divided into four sections. The first section consisted of questions regarding socio-demographic characteristics such as age, class, school, religion and age at menarche.

The second section consisted of questions on knowledge on menstrual hygiene. Five questions were used to assess the level of knowledge of the respondents. A total score of 5 was generated for the knowledge score. Two sub-scales were used to categorize the level of knowledge: 1-2 out of a total score of 5 represented low knowledge while 3 to 5 out of a total score of 5 represented good knowledge.

The third section consisted of questions on attitude towards menstrual hygiene. Five questions were used to assess the attitude towards menstrual hygiene of the respondents. A total score of 5 was generated for the total attitude score. Two sub-scales were used to categorize attitude: 1-2.5 out of a total score of 5 represented negative while 2.6 to 5 out of a total score of 5 represented positive attitude. The mean attitude score of the respondents was 1.3 (S. D=0.5) out of a total attitude score of 5. The fourth section consists of questions on menstrual hygiene practices.

Questions from the participants relating to menstrual and reproductive health were clarified by the researcher. The pretested questionnaire was administered under the supervision of the researcher to prevent the participants from sharing responses.

### **3.11 Data collection techniques and data management.**

#### **3.11.1 Pre-visiting**

A visit to the study areas was made before data collection. This helped the researcher to get prior knowledge and further insight into the study area, the administrative protocols necessary, the target respondents and informal permission to go to the study area.

#### **3.11.2 Pre-testing**

Before undertaking data collection, the questionnaire was piloted on 10 respondents from Pride academy Kisugu in order to identify problems with the data collection process and areas of improvement and necessary modifications were made. This secondary school had similar characteristics to that of Kibuli Secondary School and Ebenezer Secondary School where the study was based. Pre-testing ensured credibility, accuracy, validity and reliability of the questions. Where necessary, this resulted in adjustments in the tools so that some questions were deleted, rephrased, eliminated or even added.

#### **3.11.3 Editing**

Editing of the questionnaire was done in the field immediately. This involved checking for completeness of the responses for each question. It also required checking that each question had an appropriate and complete response.

#### **3.11.4 Coding**

Coding means assigning a numerical number to a response. A coding frame was made for each question, which has a set of options to tick(check). The questionnaire was pre-coded. This facilitated data entry and analysis. Post-coding was also done after field for other specific responses and elaborates responses which the researcher had not predicted.

#### **3.11.5 Data entry**

After field data collection, data entry followed. This required construction of template or master sheet into which data was exported from the questionnaires. The template was constructed with the help of computer software SPSS Version 20.0.

#### **3.11.6 Data storage**

Data storage is critical for quality of data. There were boxes for storage of the questionnaires. One for the empty questionnaires, the second for the filled questionnaires until the sample

size was reached. Both boxes were strictly kept by the researcher. Upon entry to capture data in the template the entered questionnaires were kept in the third box until data cleaning. The computer template and draft reports were stored on soft copies all of which had passwords known by the researcher only. This was done to avoid alterations by unauthorized people. Variety of soft copies provided a backup, in case of corrupted documentation

### **3.11.7 Data cleaning**

Data cleaning was done for entered data to check for errors and omissions traceable in the field data tools. This ensured that quality data was presented and analyzed.

### **3.12 Data analysis**

The analysis of the data collected was done with the help of computer software SPSS Version 20.0. Questionnaires were checked for completeness, coded and data entered in Microsoft Excel 2010 spreadsheet. Data obtained was then transferred to Statistical Package for Social Sciences (SPSS) programme Version 20. Then, analysis of the quantitative data was done using software SPSS and descriptive and analytical statistical inferences were employed to show the level of association between the variables under study. Presentation of the study findings was done using charts, graphs and tables in order to provide summarized and simplified picture of the outcome of this research study.

### **3.13 Quality control issues**

Quality control measures were employed to ensure validity and reliability of collected data in the following ways;

The researcher pre-tested the questionnaire on 10 respondents from Pride Academy Secondary School Kisugu before application to the study area to ensure that there were no errors. The aim of the study and the way of filling out the questionnaire was thoroughly explained in each classroom to the students by the principal investigator. Questionnaires were checked for consistency and completeness of information obtained from the study participants so as to ensure the reliability of the collected information. At the conclusion of this research study, all questionnaires were kept in safety lockers under lock and key only accessible by the principal investigator to ensure confidentiality.

### **3.14 Ethical consideration**

Ethical considerations were taken into account so that the study is done as per the acceptable norms of the university. The following were considered key;

- i. The study protocol was presented for review and approval by the Institutional Review Board of International Health Sciences University School and approval for data collection was provided. The approval number for this study was IHSU REC/0083.
- ii. Data collection letters were presented to the administrations of Kibuli Secondary School and Ebenezer Secondary School, and then written informed consent was sought from all study participants before enrolment into the study.
- iii. For all children below the age of 18 years, an assent was sought from the girls as an affirmative agreement to participate in the study.
- iv. No participant was coerced to participate in the study.
- v. Respondents were informed of their rights especially the right to refuse to participate in the study at any stage, should they feel so.
- vi. Confidentiality was maintained by use of identification numbers instead of student names as to get more reliable answers from the participants.
- vii. Data was safely stored in a safety box under lock and key only accessible to the principal investigator.
- viii. There was no psychological harm caused by asking very personal questions on menstrual hygiene during the course of the study.

### **3.15 Limitations of the study**

- i. Low transparency among respondents in answering the questions.
- ii. Some information from some respondents was not reliable since they felt they may be stigmatized when they reveal their true behavioural practices, knowledge and attitude regarding menstrual hygiene.
- iii. Recall bias in case the respondents forgot some of the information relevant to the study.
- iv. Poor time management in the case where some respondents took a lot of time to complete the questionnaire

### **3.16 Plan for dissemination**

Results from the study are presented in a dissertation copies of which will be submitted to International Health Sciences University and the administrations of Kibuli Secondary School and Ebenezer Secondary School. A manuscript will be written for submission to a medical journal and presentation at various conferences.



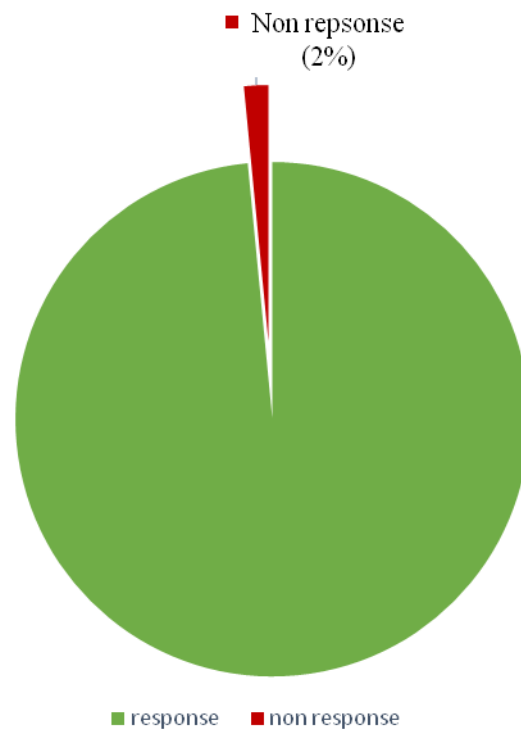
## CHAPTER FOUR

### DATA PRESENTATION, ANALYSIS AND INTERPRETATION OF RESULTS

#### 4.0 Introduction

This chapter presents findings on menstrual hygiene among secondary school girls in Makindye division, Kampala district. Knowledge, attitude and practices on menstrual hygiene were evaluated in a sample of 196 participants from two selected secondary schools in Makindye division, Kampala district. 193 respondents fully completed the questionnaire making a 98% response rate. 2% of participants did not respond as shown in Figure 2 below.

*Figure 2: Response rate*



*Source: Primary field data.*

#### 4.1 Socio-demographic characteristics of the respondents.

Table 1: Distribution of respondents by their Socio-demographic characteristics (n=193).

Variable	Categories	Frequency (n=193)	Percentage (%)
Age range	11 to 12 years	76	39.4
	13-17 years	111	57.5
	18-19 years	6	3.1
School	Kibuli Secondary School	96	49.7
	Ebenezer Secondary School	97	50.3
Class of respondent	S1	43	22.3
	S2	44	22.8
	S3	43	22.3
	S4	63	32.6
Religion	Muslim	106	54.9
	Catholic	41	21.2
	Protestant	35	18.1
	Seventh Day Adventists	2	1.0
	Others	9	4.7
Age when you experienced menarche	12 years	79	40.9
	13 years	73	37.8
	14years	33	17.1
	Above14 years	8	4.1

Source: Primary field data

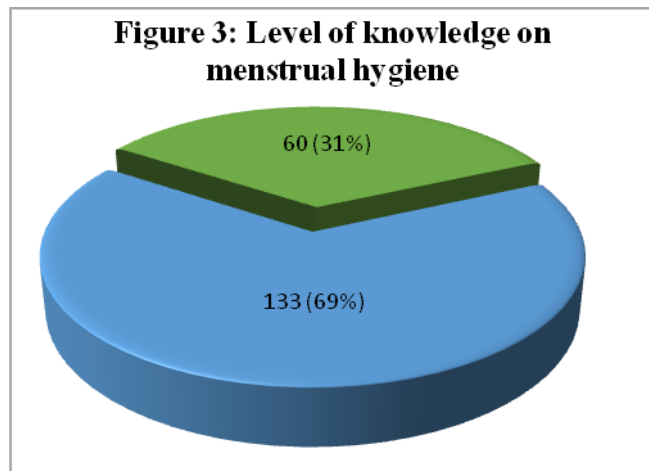
The findings in Table 1 above reveal that the mean age of the respondents was 14 years (S. D =2.6). More than half 115 (58.1%) of the respondents were aged between 15 to 18 years while 6(3.1 %) were aged above 18 years. The two selected settings that are: Kibuli Secondary School (KSS) and Ebenezer Secondary School (ESS) contributed an almost equal number of respondents (49.7% and 50.3% respectively). Slightly more than one third (32.6%) of the respondents were in Senior Four (S4); whereas those in Senior One (S1), Senior Two (S2) and Senior Three (S3) contributed almost equal proportions of the sample (22.3%, 22.8% and 22.3% respectively).

With regards to religious denominations of the respondents, the highest percentage 106 (54.9%) of the respondents were Muslims followed by Catholics (21.2%) and Protestants (18.1%). A fair proportion of the respondents 79 (40.9%) experienced menarche at the age of 12 years while only 8 (4.1%) experienced menarche at the age of 14 years.

## 4.2 Knowledge on menstrual hygiene among adolescent girls (n=193).

### 4.2.1: Level of Knowledge on menstrual hygiene among adolescent girls (n=193).

Figure 3: Level of knowledge on menstrual hygiene



Source: Primary field data

Key

- Poor knowledge
- Good knowledge

Figure 3 results indicate that; regarding the level of knowledge on menstrual hygiene, 69% (n=133) of the respondents had correct scores on questions assessing knowledge indicating good knowledge on menstruation whilst those with wrong responses to questions assessing knowledge represented 31% (n=60) of the respondents.

Table 2: Univariate analysis of knowledge of adolescent girls on menstrual hygiene among secondary school girls in Makindye division, Kampala district. (n=193)

Variable	Attributes	Frequency (n=193)	Percentage (%)
Heard of menstruation hygiene before menarche*	Yes	157	81.3
	No	36	18.7
What is menstruation? *	Normal interval between menstrual cycles	12	6.2
	A period in a menstrual cycle when a woman is most fertile	39	20.2
	Monthly shedding of the uterine endometrial lining	106	54.9
	I don't know	31	16.1
	Others	5	2.6
Source of information	Health facility	15	7.8
	Friend	22	11.4
	Parent	83	43.0
	Media	1	0.5
	Teachers	69	35.8
	Textbook	3	1.6
Cause of menstruation*	Hormone	159	82.4
	Curse	28	14.5
	Don't Know	6	3.1
Origin of menstrual blood*	Uterus	43	22.3
	Vagina	97	50.2
	Stomach	16	8.3
	Urinary bladder	34	17.6
	Don't know	3	1.6
Ideal material to use during menstruation*	Disposable sanitary pad	179	92.7
	Newspapers /toilet paper	1	0.5
	Pieces of cloth	3	1.6
	Re-usable pads	10	5.2

Source: primary field data. \*=Variable used to assess knowledge on menstrual hygiene

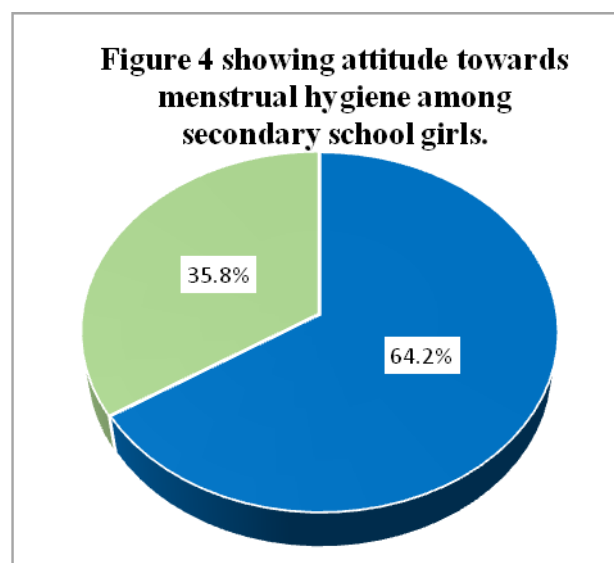
Table 2 above shows that the highest proportion of girls 157(81.3%) had heard of menstruation before their onset of menarche, with the main sources of knowledge being parent 83(43%) followed by teachers 69 (35.8%), friends 22(11.4%) and health facilities 15(7.8%). Media 1(0.5%) and textbooks 3(1.6%) played a very small role. More than half 106 (54.9%) of the girls correctly defined menstruation as the monthly shedding of the uterine endometrial lining. Majority 159 (82.4%) of the girls had knowledge that hormone is the actual cause of menstruation whereas only 22.3% of the adolescent girls knew that the

uterus is the source of blood in menstruation. A significant majority 179 (92.7%) of the girls had knowledge that disposable sanitary pads are the ideal menstrual absorbent.

#### 4.3 Attitude of adolescent girls towards menstrual hygiene

Figure 4 below shows that majority 124 (64.2%) of the respondents had a positive attitude towards menstrual hygiene while 69(35.8%) of the respondents had a negative attitude towards menstrual hygiene.

Figure 4: Showing attitude towards menstrual hygiene among secondary school girls



Source: Primary field data

#### Key

- Positive attitude
- Negative attitude

Table 3: showing the attitude towards menstrual hygiene among secondary school girls in Makindye division, Kampala district.

Category	Frequency (n=193)	Percentage (%)
<b>Did your first period cause any emotional changes? *</b>		
Strongly disagree	22	11.4
Disagree	28	14.5
Agree	109	56.5
Strongly agree	34	17.6
<b>What was your reaction when you saw your first period?</b>	12	6.2
Excited	10	5.2
Cried	145	75.1
Scared	6	3.1
Casual	20	10.4
Irritated		
<b>Sanitary napkins are the ideal material to be used during menstruation. *</b>		
Strongly disagree	2	1.0
Disagree	7	3.6
Agree	69	35.8
Strongly agree	115	59.6
<b>Perception regarding sanitary napkins (Advantages).</b>		
Comfortable	98	50.8
Adequate absorption	43	22.3
Do not stain clothes	51	26.4
No itching	1	0.5
<b>Ever encountered secondary stigma as a result of menstruation</b>	171	88.6
Yes	22	11.4
No		
<b>Bad words, terms, or phrases are used to describe girls who are menstruating at school. *</b>		
Strongly disagree	50	25.9
Disagree	114	59.1
Agree	14	7.3
Strongly agree	15	7.8
<b>A girl may be treated differently if others know she is menstruating. *</b>		
Strongly disagree	11	5.7
Disagree	79	40.9
Agree	17	8.8
Strongly agree	86	44.6
<b>You may feel embarrassed in case you get menstrual blood stains during the course of the day at school. *</b>		
Strongly disagree	29	15.0
Disagree	24	12.4
Agree	43	22.3
Strongly agree	97	50.3

Source: Primary field data. \*=Variable used to assess attitude towards menstrual hygiene.

According to Table 3, when girls were asked if their first period caused any emotional changes, more than half of them 109 (56.5%) agreed while 22 (11.4%) of girls strongly disagreed that their first period caused emotional changes. Three quarters 145 (75.1%) of the girls reported that they felt scared, 20 (10.4%) felt irritated, 6 (3.1%) felt casual, 12 (6.2%) felt excited while 10(5.2%) of the girls cried when they saw their first period.

When asked about if sanitary napkins are the ideal material to be used during menstruation, the majority of the girls strongly agreed while only 2(1%) of the girls strongly disagreed that sanitary napkins are the ideal material for menstrual hygiene. More than half 98 (50.8%) of the girls reported that sanitary pads are comfortable, 43 (50.8%) reported adequate absorption, 51(22.3%) reported not stained clothes and 1 (0.5%) no itching with sanitary pad use. Less than a third 22 (11.4%) of the girls reported having encountered secondary stigma as a result of menstruation.

When asked if bad words, terms, or phrases are used to describe girls who are menstruating at school, more than half 114 (59.1%) of the girls disagreed while only 14 (7.3%) agreed. 86 (44.6%) of the girls strongly disagreed that a girl may be treated differently if others know she is menstruating while 97 (50.3%) admitted that they felt embarrassed when menstrual blood stains their cloth during the course of the day at school.

#### 4.4 Practices of Adolescent girls on menstrual hygiene

Table 4: showing practices of adolescent girls on menstrual hygiene among secondary school girls in Makindye division, Kampala district (n=193).

Variable	Attributes	Frequency (n=193)	Percentage (%)
Absorbent used during menstruation.	Disposable sanitary pad	178	92.2
	Re-usable pads	15	5.7
Do you change your absorbents while at school?	Yes	148	76.7
	No	45	23.3
Frequency of sanitary material change in a day.	Once	103	53.4
	Twice	20	10.4
	Thrice	31	16.1
	More than four times	38	19.7
Do you reuse the sanitary cloths?	Yes	34	17.6
	No	159	82.4
Do you bath during your menstrual period?	Yes	138	71.5
	No	55	28.5
Frequency of bath during menstruation	Once	3	1.6
	Twice	54	28.0
	Thrice	107	55.4
	More than four times	29	15.0
What do you use for bathing during menstrual periods?	Water only	12	6.2
	Lukewarm water	11	5.7
	Water and soap	167	86.5
	Antiseptic	3	1.6
Storage of used pants during periods	Soaked in detergent	43	22.3
	Suitcase	142	73.6
	Bucket	6	3.1
	Others	2	1.0
Storage of knickers after washing them	Wash and expose under direct sunlight	130	67.4
	Wash and hide	15	7.7
	Wash and dry under shade	48	24.9
Disposal of used sanitary materials	Toilet/Latrine	122	63.2
	Burnt	50	25.9
	Rubbish pit	15	7.8
	Burying	6	3.1
Are there sanitary facilities at school?	Yes	181	93.8
	No	12	6.2
Are the sanitary facilities at your schools satisfactory?	Yes	166	86.0
	No	27	14.0

Source: Primary field data.

Table 4 above shows that the highest percentage 178 (92.2%) of the girls reported the use of sanitary pads. More than three fourths 148(76.7%) of the girls agreed to changing their



absorbents while at school. Slightly more than half 103 (53.4%) of the girls changed their sanitary material two times in a day.

A significant percentage 159 (82.4%) of the girls reported no reuse of sanitary material. When asked about the frequency of bathing during menstruation, nearly three fourths 138 (71.5%) of girls took a bath thrice during their period with 167 (86.5%) using water and soap. More than half 130 (67.4%) of the girls washed and exposed their knickers under direct sunlight. Regarding sanitary facilities at school, the highest proportion 181 (93.8%) of the girls reported they were present and 166 (86%) agreed that they were satisfactory. The highest proportion, 142 (73.6%) of the girls stored their used knickers in their suitcases as compared to 43 (22.3%) of the girls who soaked them in detergent. More than half 122 (63.2%) of girls disposed of used sanitary materials in the toilet/latrine.

### **Cultural practices and restrictions practiced during menstruation**

*Table 5: showing cultural practices and restrictions during menstruation among secondary school girls in Makindye division, Kampala district.(n=193)*

<b>Variable</b>	<b>Frequency</b>	<b>Percentage (%)</b>
<b>Any cultural beliefs associated with menstrual hygiene</b>		
Yes	73	37.8
No	120	62.2
<b>Cultural practiced during menstrual period</b>		
Being perceived as unclean or embarrassing	7	3.6
Menstrual blood being impure	52	26.9
Burying cloth used during menstruation so that it is not used for witchcraft	27	14.0
	3	1.6
Period seen as a disease and debilitating for women	104	53.9
<b>Some of the restrictions you face during menstruation</b>		
Do not read Quran or bible	117	60.6
Do not enter the kitchen	6	3.1
Do not play/physical work/exercise	19	9.8
Do not go to school	2	1.0
Do not talk to boys	12	6.2
Segregated in the house	6	3.1
No restriction	31	16.1

**Source:** *Primary field data.*

Table 6 above shows that 31(16.1%) girls said that they had no restrictions during menstruation. More than half 117 (60.6%) of the girls reported that they were not allowed to read the Quran or the Bible.1 girl was segregated in the house during periods. Other

restrictions included, 6 (3.1%) of the girls were not allowed to enter the Kitchen, 19 (9.8%) of the girls were not allowed to play and do physical work, 2(1.0%) of the girls were not allowed to go to school and 12 (6.2%) of the girls were not allowed to talk to boys. Of the 120 (62.2%) of the girls who had cultural belief associated with their periods, majority 104 (53.9%) of the girls believed that a period is a disease and debilitating for women.

## **CHAPTER FIVE: DISCUSSION OF RESULTS**

### **5.0 Introduction**

This chapter discusses the research findings in relation to the problem being researched, previous study findings review conducted elsewhere with and in line with the specific objectives of the study. It also explains the obtained results from the study.

### **5.1 Socio-demographic characteristics of the sample.**

The mean age of the respondents was 14 years while the majority of the respondents were aged between 15 to 18 years. This is an expected trend among urban schools in Uganda where the age of school going children at the secondary level is approximately 11 to 18 especially at the Ordinary Level of education. This age group also represents a female subpopulation that has just started to experience menstruation and acknowledging the changes in the female reproductive cycle.

Muslims constituted the majority (54.9%) of the respondents, followed by Catholics (21.2%). The higher proportions of respondents towards the Muslim religious denomination is contrary to the national statistics regarding the distribution of the entire population with regards to religious denomination. In Uganda, the Catholic denomination contributes the majority followed by Protestant and Muslims respectively (UBOS, 2015). The findings of this study may be explained by the fact that one of the participating schools is a Muslim majority school which could have contributed to that larger number of Muslim respondents.

The mean age at menarche in this study was 12 years (S.D = 0.9). Menstruation is a physiological process in female adolescents which approximately starts at age of 9–12 years old (Balqis, Arya, and Ritonga, 2016). Indeed, the majority of girls' age at menarche is between 12 to 14 years and finding from our study was not exceptional. Similar findings have been reported elsewhere including studies in Indonesia Alam et al., (2016) and in a systematic review on menstrual hygiene in LMIC (Chandra-Mouli & Patel, 2017).

### **5.2 Knowledge of menstrual hygiene**

A significantly high number of girls had good knowledge 133 (69%) of menstrual hygiene compared to those with low knowledge 60 (31%) in this study. This could be attributed to the study settings had which are good information sources on menstruation. Our findings are contrary to those reported from Boosey's study which showed that in Africa, over 70% of

adolescents have inadequate information about menstrual hygiene (Boosey, Prestwich, and Deave, 2014)

Before bringing any change in menstrual practices, the girls should be educated about the facts of menstruation, physiological implications, about the significance of menstruation and above all, about proper hygienic practices with a selection of disposable sanitary menstrual absorbent. Mothers must play a very important role in their health education freely discussing all aspects of menstrual matters including clean practices without any hesitation with her daughter before her attainment of menarche. The next best are the teachers who may conduct classes on menarche, menstrual hygiene, RTI/STI under the routine school curriculum.

In this study, mothers were the first informants in 83 (43%) of the girls. This may be because mothers are the first-hand source of knowledge regarding menstruation from home. This finding is similar to Dasgupta's and Sarkar's, (2008) study where 37.5% cases mother was the key informant.

It was evident that a high percentage 157 (81.3%) of the participants were aware of menstruation before menarche. This may be due to a number of factors that include school programs and apparent knowledge from various sources of information like mothers, friends and multimedia. This finding regarding the good level of knowledge on menstrual hygiene is similar to that reported in Ethiopia, although a much higher percentage (92 %) of the students were aware of menstruation before menarche (Upashe, Tekelab and Mekonnen, 2015).

Only 106 (54.9%) of the girls knew correctly that menstruation is a monthly shedding of the uterine endometrial line. The above observation may be due to lack of proper health education programs in the school, which focused on the menstrual health and hygiene among girls. Additionally, this could also be due to the assumption that some of these girls were still very young provided that issues of sexuality still have cultural restrictions in our society making them vulnerable to limited sources of information. This finding is similar to a study conducted by Mwita, C., (2012) in Kenya among females living in an informal urban settlement which revealed that only a minority of the participants were able to describe menstruation in biological terms. This means that girls often grow up with limited knowledge of menstruation hence poor MHM practices.

It is very sad to note in the present day that only 43 (22.3%) of the participants were aware that menstrual bleeding came from the uterus with majority 97 (50.2%) pointing to the vagina as the source of bleeding. This finding may be due to lack of inadequate health education programs in schools that focus on the menstrual health and hygiene among girls. Similar studies have also noted that few girls are able to identify the uterus as the source of menstrual bleeding in rural Nepal, In cities in Pakistan and Nigeria rural Uganda (Chandra-Mouli and Patel, (2017) Raina and Balodi, 2014) Sudeeshna and Aparajita, (2012); Fehintola et al., (2017).

A very high proportion 179 (92.7%) of the adolescent girls knew that the ideal material to use during menstruation is the disposable sanitary pad. The awareness of sanitary pad is higher, which is possibly due to the interplay of a number of factors like availability, accessibility, and cost, exposure to mass media, local customs as well as storage and disposal issues. The study findings are in line with a study conducted by Kounteya Sinha, (2011).

The majority (82.4%) of the girls reported that hormones are the main cause of menstruation. Indeed, many well-conducted studies highlighted the cause of menstruation as being hormonal. This finding may be attributed to the fact that girls are well informed by their teachers, friends and media that menstruation is caused by hormones. The finding may also perhaps be explained by the fact that more girls (32.6%) from the S.4 class participated and in this level of secondary education, the subject of menstruation and reproduction, in general, is covered with better detail. This study reports a higher proportion than those of Tegegne and Sisay, (2014), Kitesa, (2016) and Seenivasan et al., (2016) who reported that minority of their study samples knew precisely that menstruation is due to hormones. The finding is similar to that of Upashe, Tekelab, and Mekonnen, (2015) who reported that majority of their study sample knew that the cause of menstruation was a hormone. Similarly, Balqis, Arya, and Ritonga, (2016) in a descriptive cross-sectional study on knowledge, attitude and practice of menstrual hygiene in Jatinangor among 238 female high school students reported that all of the participants knew that menstruation was a normal process for women and that menstruation occurs because of a hormone.

### **5.3 Attitude of the respondents towards menstrual hygiene**

Majority of the respondents had a positive attitude towards menstrual hygiene 124 (64.2%) while 69 (35.8%) of the respondents had a negative attitude towards menstrual hygiene. The varied responses to menarche may depend on the degree to which the girls have been prepared. Similar findings were reported by Tegegne and Sisay, (2014) that girls who had information about menstruation before menarche had a positive attitude towards menstruation and menstrual hygiene. Shanbhag et al., (2012) also reported that among the girls who had attained menarche only 43 (14.07%) showed a positive attitude.

Majority of the girls reported that they experienced emotional changes during their first experience of periods. These were expressed as scary 145 (75.1%), irritability 20 (10.4%) excitement 12 (6.2%) and emotional cries 10 (5.2%). This could be attributed to the experience of a novel yet scaring experience on seeing blood flowing from their genitals for the first time at menarche. Additionally, the girl's psychological reactions to menarche are the result of a complex interplay of biological, psychological and social influences. Genes, hormones, environmental factors and nutrition influence the initiation process of menstruation although peer relationships, self-esteem and the way she feels about being a woman determine how she adapts to the changes menarche imposes. These findings have also been reported elsewhere that first experiences of first menstrual periods are always frightening to the novice causing fear and panic (Kamath et al., 2013, Ameade and Garti, (2016); Ramathuba, (2015).

Misconceptions about menstruation amongst adolescents cut across cultures and countries. Studies conducted in both developed and developing countries indicate the varying degree to which adolescents exhibit a faulty perception of menstruation and menstrual cycle (Adinma and Adinma, 2008). Majority 120 (62.2%) of the girls had such cultural beliefs where the highest proportion 104 (53.9) saw periods as a disease and debilitating for women. This is only slightly higher than that reported by Tiwari, Oza and Tiwari, (2006), 31.0%, in India.

A fair proportion (42.0%) of girls had a perception that sanitary napkins were comfortable. The explanation for this observation could be related to the interplay of several factors such as increased awareness and sensitization and exposure to mass media. This finding is consistent with a cross-sectional study conducted by Kuhlmann, Henry and Wall, (2017) which showed that most of the qualitative studies indicate that girls who know about

commercial sanitary products may prefer these products because they are seen as more comfortable.

It was also observed that the highest percentage 171 (88.6%) of the girls had ever encountered secondary stigma as a result of menstruation, this observation could be due to menstrual disasters associated with staining which school communities have not embraced, hence the stigma. This finding concurs with a study conducted by Kitesa, (2016) which revealed that Women and girls in rural settings and in particular girls in schools suffer most from stigma and lack of services and facilities to help them cope with the physical and psychological pains they undergo during their menstrual periods. Nevertheless, this finding does not concur with a cross-sectional study conducted among the Creols and Maroons of Surinam, Ten, (2009), which showed that pubescent girls would be given gifts such as jewellery as a sign and symbol of maturity.

A generally high percentage 114 (59.1%) strongly agreed that bad words, terms or phrases are used to describe girls who are menstruating, the explanation for this could be that boys have inadequate knowledge on menstruation and a negative perception towards a menstruating girl; this finding is in line with a study conducted by Nadira Parvin et al, (2016), who revealed that the embarrassment surrounding menstruation is a somewhat universal phenomenon, found in most cultures of the world and with many associated code words, euphemisms and phrases used as linguistic substitutes.

Majority 86 (44.6%) of the girls strongly agreed to being treated differently when menstruating. Only a smallpercentage of the girls reported receiving advantages while at school when menstruating. This would be because schools have no programs addressing the challenges and needs of menstruating girls. This was also observed by in a study conducted in Cambodia by Water Aid, (2014).

#### **5.4 Practice of menstrual hygiene among adolescent girls**

The hygiene-related practices of women during menstruation are of considerable importance, as they affect their health by increasing their vulnerability to infections, especially infections of the urinary tract and the perineum. The methods of managing menstruation seen in these urban secondary schools are different from those in rural Uganda, where most students in rural settings primarily use re-usable pads, like Afripads and Makapads which are Ugandan-made, low-cost pads sold or given directly to schoolgirls by NGOs and cloth.

Majority 178 (92.2%) of the girls from this study reported using sanitary pads during menstruation. This may be because the girls are able to afford the disposable sanitary pads and their easy access to information on adequate management of menstrual blood. Additionally, most of the students might also be boarding at school so as part of the school requirement, parents are obliged to provide sanitary pads for them. However, these findings were contrary among 10–19 year-old girls in rural schools in Kamuli district, Eastern Uganda by Hennegan et al., (2016) that only 9% of girls reported using disposable pads as their main protection. Even though the majority of girls reported being able to use disposable pads for every day of their period, more than half 103 (53.4%) of the adolescent girls only changed their absorbents once while at school. The probable reason may be due to ignorance, lack of extra sanitary pads and lack of facilities and privacy. These findings are similar to those reported by Sudeeshna and Aparajita, (2012); El-Gilany, Badawi and El-Fedawy,(2005) that reported that the different aspects of personal hygiene were generally found to be poor, such as not changing pads regularly with lack of privacy being an important problem.

Majority 107 (55.4%) of the girls reported taking a bath twice a day during their menstruation period. This could be due to the fact that most of the girls were Muslims and this religion necessitated them to regularly take care of personal cleanliness before prayers even though they were restricted to perform prayers, they were still required to take frequent baths in order to maintain their personal dignity. Additionally, it may be because the majority of the girls were in boarding schools and the sanitary facilities were readily available. These findings are in line with Shanbhag et al., (2012) in a study carried out among adolescent girls in resource-limited settings around Bangalore City, Karnataka, India found that, majority 83.26% of the respondents took bath daily during menstruation where 56.22% reported more than twice a day of cleaning of the external genitalia which was good menstrual practice.

The study findings reported that 167 (86.5%) of the girls used water and soap for bathing during their menstrual period. The use of soap and water could be because of the awareness and the fact that majority of the girls were in a boarding school with available resources provided by their parents. These findings are in line with those by Omidvar and Begum,(2010)Eram, (2017)Kitesa, (2016) which revealed soap and water were the commonest materials which were used by girls for cleaning their external genitalia. However, these findings are in not in line with those by Miiró et al., (2018) who reported that



improvement of facilities at school was also frequently cited. Participants particularly pointed out the need for a steady supply of water and soap at school. If girls attend schools which lack adequate water supplies to comfortably wash themselves in privacy, they may be unable to remain comfortably in class during their menstrual cycle.

Majority 130 (67.4%) of the girls washed and exposed the nickers under direct sunlight after washing them. This finding was in line with a study conducted by (Nadira Parvin et al, 2016), who revealed that majority of the girls dried the sanitation material under the sunlight and stored them with routine cloths. This could be because the majority of the girls were in boarding schools and the sanitary facilities were readily available. Worth noting is the fact that some students reported drying their sanitation material under shade 48 (24.9%) and hiding 15 (7.7%). This may be because the girls are ashamed of the fact that they are using materials that are not ideal for managing sanitary material like cloths. These practices are disturbing because they can it could give rise to the harbouring of dust and insects.

The proportion of the participants who used the suitcase as a storage place for used pants during the period was as high as 142 (73.6%). The place of storage of the used pants is equally important for their cleanliness; especially the practice of storing them in suitcases rather than soaking them in detergent. This could be because there was no privacy for girls to confidently soak their used pants before washing them hence they preferred to store them in their suitcases. Similar findings were reported by SNV, (2013) that reported that cleaning of cloths is often done without soap or with unclean water and drying may be done indoors rather than in sunlight or open air due to social restrictions and taboos.

181 (93.8%) of the girls reported that sanitary facilities were present and 166 (86%) agreed that they were satisfactory. This may be attributed to the study setting being urban with private clean female toilets that have adequate lighting, water and soap and the administration being knowledgeable of menstrual hygiene needs of the girls. These findings are contrary those by Boosey, Prestwich and Deave, (2014) who carried out a study in Rukungiri District of Uganda where the study revealed that one of the girls' school toilets were inadequate for good MHM due to their lack of cleanliness, light, access for girls with disabilities and soap and water, in addition to the poor ratio of toilets for the number of girls .

More than half 122 (63.2%) of girls disposed of used sanitary materials in the toilet/latrine compared to the girls who reported burning 50 (25.9%) them, which is the ideal method of

disposal. These findings may be attributed to the absence of proper disposal areas for used sanitary material and lack of knowledge as regards to disposal of the used pads. Similar findings were reported by Oduor et al., (2015) that disposal in the of used sanitary pads in the latrine increased to 90% of all girls.

## **CHAPTER SIX: CONCLUSION AND RECOMMENDATIONS**

### **6.0 Introduction**

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

### **6.1 Conclusion**

The study shows that menstrual hygiene among adolescent girls is definitely a challenge. The study establishes that the overall level of knowledge of the adolescent girls on menstrual hygiene was good 133 (69%) although unsatisfactory.

This study also reveals that adolescent girls had generally positive attitude 124 (64.2%) towards menstrual hygiene.

Practices of the adolescent girls towards menstrual hygiene was generally good as it was evident that a large proportion among the adolescent girls practiced safe practices during menstruation.

### **6.2 Recommendations**

Formal as well as informal channels of communication such as mothers, sisters and friends, need to be emphasized for the delivery of such information. In view of the vital role of the mothers, it is very important that the mother is armed with the correct and appropriate information on reproductive health so that she can give this knowledge to her growing girl child. It is also essential for the teachers, who may not have the necessary skills to impart reproductive health education, including menstrual hygiene to their students. They have to be given requisite skills usually through training or workshops. Much more efforts are needed to curb the misbeliefs and taboos among the adolescent school girls.

Schools should highlight issues like the girl child welfare in parent meetings, school days and report days to ensure that every girl child has got enough sanitary pads for the whole term. Matters concerning menstrual hygiene should be discussed with parents and their children and solutions thought to improvise on disposal bins and incinerators.

The government together with the Ministry of Education and Sports should revise policies concerning school construction and settings to suite girl child education for instance in constructing classrooms that have private sanitary facilities.

### **6.3 Implications for Nursing Practice**

Nurses have an important role central to the education of the public on health hygiene and personal growth. These include; the maintenance of optimal menstrual hygiene and self-care practices among female adolescents.

Nurses are always in contact with this vulnerable group and therefore it is necessary for them to have adequate knowledge as well as becoming role models to this delinquent group of the society. It thus becomes as a role to ensure proper education and encouragement of personal hygiene and optimal self-care practices among female juveniles in the community.

### **6.4 Limitations of the study.**

Owing to the fact that one of the schools that is Kibuli Secondary School is a Muslim majority school, this skewed the proportion of participants with regards to religion towards the Muslim denomination, however, this did not affect our data significantly since the two-school contributed almost equal proportions to the sample size.

There was also low transparency among respondents in answering the questions due to the fact that girls found discussing their menstruation experiences uncomfortable

Some information from some respondents was not reliable since they felt they may be stigmatized when they reveal their true behavioural practices, knowledge and attitude regarding menstrual hygiene.

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## APPENDICES

### APPENDIX I: INFORMED CONSENT TO PARTICIPATE IN RESEARCH

Dear respondent, I am **NAKAYE ZAINAH**, Reg. No: **2014-BNS-FT-001**, a student at Clarke International University pursuing a Bachelor's Degree in Nursing. As a course requirement, a research study is supposed to be carried out to fulfil. You are invited to participate in the study under the title, "**Knowledge, attitude and practices towards menstrual hygiene among secondary school girls in Makindye division Kampala district**".

#### **Purpose of the study**

The purpose of this study is to:

- i. To assess the level of knowledge on menstrual hygiene among secondary school girls in Makindye division Kampala district between April to May 2018.
- ii. To determine the attitude towards menstrual hygiene among secondary school girls in Makindye division Kampala district between April to May 2018.
- iii. To establish the practices towards menstrual hygiene among secondary school girls in Makindye division Kampala district between April to May 2018.

#### **Study Procedures**

You are being asked to participate in this study, as you are an adolescent girl who can help us to better understand knowledge, attitudes and practices towards menstrual hygiene.

#### **If you take part in this study, you will be asked to:**

Take part in a one-time, semi-structured questionnaire; answering the questionnaire will take approximately 15 minutes;

The information will be confidentially treated and strictly used for research purpose. Results from this study will enrich ground information about awareness about menstrual hygiene in order to add data for further research.

#### **Benefits**

There may be no direct benefits associated with your participation in the study, but the information you will provide will be useful in increasing awareness as regards to menstrual hygiene in your community and countrywide.

**Risks or Discomfort**

This research is considered to be of minimal risk. That means that the risks associated with this study are the same as what you face every day. There are no known additional risks to those who take part in this study.

**Compensation**

You will not be given any compensation for participating in the study.

**Privacy and Confidentiality**

We will keep your study records private and confidential. Certain people may need to see your study records. By law, anyone who looks at your records must keep them completely confidential. The only people who will be allowed to see these records are:

The research team, including the Principal Investigator and those involved with the study.

I may publish what I have learnt from this study. If I do, I will not include your name. I will not publish anything that would let people know who you are.

**Voluntary Participation / Withdrawal**

You should only take part in this study if you want to volunteer. You should not feel that there is any pressure to take part in the study. You are free to participate in this research or withdraw at any time. There will be no penalty or loss of benefits you are entitled to receive if you stop taking part in this study.

**You can get the answers to your questions, concerns, or complaints**

If you have any questions, concerns or complaints about this study, or experience an adverse event or unanticipated problem, contact the researcher on 0700133050. If you have questions about your rights as a participant in this study, general questions, or have complaints, concerns or issues you want to discuss with someone outside the research, call the IHSU-REC Chairperson Dr Samuel Kabwigu on (0779610100) & the executive secretary of UNCST on (0414 -705500) respectively.



## **ASSENT TO PARTICIPATE IN RESEARCH**

**Study title:** Knowledge, attitude and practices towards menstrual hygiene among secondary school girls in Makindye Division, Kampala District.

**The person leading this study:** NAKAYE ZAINAH

If you want to, you can be part of this research study. People do research to try to find answers to questions.

### **Why are we doing this research study?**

The purpose of this study is to help us to better understand knowledge, attitudes and practices towards menstrual hygiene.

### **Why are you being asked to be in this research study?**

You are invited to participate in this study so that we so that you can tell us what you know about menstruation and menstrual hygiene, what your attitude menstruation and menstrual hygiene is and how you practice menstrual hygiene.

### **What will happen during this study?**

This study will take place at Kibuli Secondary School and Ebenezer Secondary School and will last a period of 10 days for two weeks (Monday to Friday each week).

### **During this study,**

You will take part in a one-time, semi-structured questionnaire. Answering the questionnaire will take approximately 15 minutes.

### **What are the problems that might happen in this study?**

Sometimes people have problems with research studies that make them feel bad. Some problems that might happen during this study are: Experiencing psychological harm caused by asking very personal questions on menstrual hygiene during the course of the study.

Not all of these problems will happen to you. Some problems might happen that the researchers don't know about. It is important to let the researchers and your parents know if there is anything that you don't like about the research study right away. Sometimes things that bother one person don't bother another person at all, so you need to let us know when something is bothering you.

### **Who will be told the things we learn about you in this study?**

The information will be confidentially treated and strictly used for research purpose and will only be accessed by the Principal investigator. Your name will not be in any report of the results of this study.

**Will you get any money or gifts for being in this research study?**

You will not receive any money or gifts for being in this research study.

**Who should you ask if you have any questions?**

If you have questions you should ask us. If you or your parents have other questions, worries, or complaints you should call the IHSU-REC Chairperson Dr Samuel Kabwigu on (0779610100) & the executive secretary of UNCST on (0414 -705500) respectively.

**What if you or your parents don't want you to be in this study?**

Your parent needs to give us permission for you to be in this study. You do not have to be in this study if you don't want to, even if your parent has already given us permission

**What if you change your mind?**

You may stop being in the study at any time. If you want to stop, just tell us so and we will stop right away. If you decide to stop, no one will be angry or upset with you. You can ask questions at any time.

**STATEMENT OF ASSENT**

**Person attesting to the above procedure**

I..... parent/guardian of the participant do here attest that all the information concerning the study in question has been well explained to the participant and thereby accepts to participate in the study without any objection and that the participant is in his/her right state of mind.

\_\_\_\_\_  
Name and signature of Witness Parent/ Guardian of the child \_\_\_\_\_  
Date

**Child taking part in the study**

If you sign your name on this page, it means that you agreed to take part in this research study. You may change your mind any time for any reason.

\_\_\_\_\_  
Sign your name here if you want to be in the study \_\_\_\_\_  
Date

\_\_\_\_\_  
Print your name here if you want to be in the study

**Research team member obtaining assent**

I have explained this study to and answered questions of the child whose name is at the top of this form. I informed the child that he or she could stop being in the study and can ask questions at any time. From my observations, the child seemed to agree to take part in the study.

\_\_\_\_\_  
Signature of Research Team Member Obtaining Assent \_\_\_\_\_  
Date

Printed Name of Research Team Member Obtaining Assent  
\_\_\_\_\_

## APPENDIX II: RESEARCH QUESTIONNAIRE

Dear respondent, am **NAKAYE ZAINAH**, Registration Number, **2014-BNS-FT-001**, a student of International Health Sciences University pursuing a Bachelor's Degree in Nursing. As a course requirement, a research study is supposed to be carried out to fulfil. You are invited to participate in the study under the title, "**Knowledge, attitude and practices towards menstrual hygiene among secondary school girls in Makindye division Kampala district**" is carried out. I dearly appeal for your participation to make it a success. The information provided will be treated with privacy and will strictly be used for academic research purposes by the researcher. Your time and cooperation will highly be appreciated.

Instruction: Tick the most appropriate option against the questions

### SECTION A: Social Demographic characteristics of the respondents

1. What is your age range?

a) Between 10-14 years

b) 15-18 years

c) 18 years and above

2. What is the name of your school?

Kibuli Secondary School

b) Ebenezer Secondary School

3. What is your class of study?

a) S.1

b) S.2

c) S.3

d) S.4

4. What is your religion?

a) Muslim

b) Catholic

c) Protestant

d) Seventh Day Adventists

e) Others (specify).....

5. At what age did you get your first period?

a) 12 years

c) Above 14 years

b) 13 years

d) 14 years

### SECTION B: Knowledge of menstrual hygiene among adolescent girls

6. Knowledge about menstruation being a normal condition

(i) Have you ever heard of menstruation?

a) Yes

b) No



If yes, what is menstruation?

- a) Normal interval between menstrual cycles
- b) A period in a menstrual cycle when a woman is most fertile
- c) Monthly shedding of the lining of the uterine endometrial lining
- d) I don't know
- e) Others specify.....

7. Where did you get the information from?

- a) Health facility
- b) Friend
- c) Parent
- d) Media
- e) Teachers
- f) Textbook
- g) Others (specify).....

8. What is the cause of menstruation?

- a) Hormone
- b) Curse
- c) Don't Know
- d) Diseased
- e) Others specify.....

9. Where does menstrual blood come from?

- a) Uterus
- b) Vagina
- c) Stomach
- d) Urinary bladder
- e) Don't know
- f) Others specify.....

10. What is the ideal material to use during menstruation?

- a) Disposable sanitary pad
- b) Re-usable pads
- c) Hand towel
- d) Newspaper/toilet paper
- e) Pieces of cloth
- Others specify.....

**SECTION C: Attitude on menstrual hygiene among adolescent girls**

11. Did your first period cause any emotional changes?

- a) Strongly disagree
- b) Disagree
- c) Agree
- d) Strongly agree

12. What was your reaction when you saw your first period?

- a) Excited
- b) Cried
- c) Scared
- d) Casual
- e) Irritated

Others please specify.....

13. What cultural beliefs are associated with menstrual hygiene?

- a) Yes
- b) No

14. What cultural beliefs do you practice during a menstrual period?

- a) Being perceived as unclean or embarrassing
- b) Menstrual blood being impure
- c) Burying cloth used during menstruation so that it is not used for witchcraft
- d) Period seen as a disease and debilitating for women
- e) None

15. What are some of the restrictions you face during menstruation?

- a) Do not read Quran or bible
- b) Do not play/physical work/exercise
- c) Do not talk to boys
- d) No restriction
- e) Others specify.....
- f) Do not enter the kitchen
- g) Do not go to school
- h) Segregated in the house

16. Sanitary napkins are the ideal material to be used during menstruation.

- a) Disagree
- b) Strongly disagree
- c) Agree
- d) Strongly agree

17. Perception regarding sanitary napkins (Advantages).

- a) Comfortable
- b) Adequate absorption
- c) Do not stain clothes
- d) No itching
- e) Do not know

18. Have you ever encountered secondary stigma as a result of menstruation?

- a) Yes
- b) No

19. In your opinion, sometimes bad words, terms, or phrases are used to describe girls who are menstruating at school.

- a) Disagree
- b) Strongly disagree
- c) Agree
- d) Strongly agree

20. A girl may be treated differently if others know she is menstruating

- a) Disagree
- b) Strongly disagree
- c) Agree
- d) Strongly agree

21. You may feel embarrassed in case you get menstrual blood stains during the course of the day at school?

- a) Disagree
- b) Strongly disagree
- c) Agree
- d) Strongly agree

**SECTION D: Practice on menstrual hygiene among adolescent girls**

22. Which absorbent do you use during menstruation?

- |   |  |
|---|--|
| a) Disposable sanitary pad <input type="text"/> | e) Newspaper/toilet <input type="text"/> |
| b) Re-usable pads <input type="text"/>          | f) Pieces of cloth <input type="text"/>  |
| c) Hand towel <input type="text"/>              | g) Tampon <input type="text"/>           |
| d) Others specify.....                          |  |

23. Do you change your absorbents while at school?

a) Yes

b) No

24. How often do you change your absorbent or sanitary material in a day?

a) Once  d) Twice

b) Thrice  e) Four times and more

c) Others (specify).....

25. Do you reuse the sanitary cloths?

a) Yes

b) No

26. Do you bath during your menstrual period?

a) Yes

b) No

27. How often do you bath during menstrual periods?

a) Once  d) Twice

b) Thrice  e) Four times and more

c) Others (specify).....

28. What do you use for bathing during menstrual periods?

a) Water only  d) Water and soap

b) Lukewarm water  e) Antiseptic

c) Others (specify).....

29. Where do you keep your used pants during menstruation periods?

a) Soaked in detergents  c) In buckets

b) In Suitcase  d) On the floor

e) Others (specify).....

30. Where do you keep your pants after washing them?

a) Wash and expose under direct sunlight  c) Wash and dry under shade

b) Wash and hide  d) Discard them

c) Others (specify).....

31. Where do you dispose of used sanitary materials during menstruation period?

a) Toilet/latrine  c) Rubbish pit

b) Burnt  e) Be buried

c) Others (specify).....

32. Are there sanitary facilities at school?

a) Yes

b) No

33. Are the sanitary facilities at your schools satisfactory for managing menstrual hygiene?

a) Yes

b) No

If no, why?.....

**APPENDIX III: MAP OF THE STUDY AREA SHOWING SELECTED SCHOOLS IN  
MAKINDYE DIVISION, KAMPALA DISTRICT.**



## APPENDIX IV: INTRODUCTORY LETTER



*making a difference in health care*

Office of the Dean, School of Nursing

Kampala, 23rd March 2018

THE HEAD TEACHER.....  
KIBULI SECONDARY SCHOOL.....  
.....

Dear Sir/Madam,

RE: ASSISTANCE FOR RESEARCH

Greetings from International Health Sciences University.

This is to introduce to you **Nakaye Zainah**, Reg. No. **2014-BNS-FT-001** who is a student of our University. As part of the requirements for the award of a Bachelors degree in Nursing of our University, the student is required to carry out research in partial fulfillment of the award.

The topic of research is: **Knowledge, Attitude and Practices Towards Menstrual Hygiene Among Secondary School Girls in Makindye Division, Kampala District.**

This therefore is to kindly request you to render the student assistance as may be necessary for the research.

I, and indeed the entire University are grateful in advance for all assistance that will be accorded to our student.

Sincerely Yours,



The International Health Sciences University  
P.O. Box 7782 Kampala - Uganda  
(+256) 0312 307400 email: [aagwang@ihsu.ac.ug](mailto:aagwang@ihsu.ac.ug)  
web: [www.ihsu.ac.ug](http://www.ihsu.ac.ug)

APPENDIX V: CORRESPONDENCE LETTERS



making a difference in health care

Office of the Dean, School of Nursing

Kampala, 23rd March 2018

THE HEAD TEACHER  
.....  
EBENEZER SECONDARY  
.....  
SCHOOL  
.....

EBENEZER SECONDARY SCHOOL  
DEPUTY HEADTEACHER  
10 APR 2018  
Approved and authorised  
to carry out the data  
collection exercise for  
Ebenezer Sec. Sch.  
Dtm

Dear Sir/Madam,

RE: ASSISTANCE FOR RESEARCH

Greetings from International Health Sciences University.

This is to introduce to you **Nakaye Zainah**, Reg. No. **2014-BNS-FT-001** who is a student of our University. As part of the requirements for the award of a Bachelors degree in Nursing of our University, the student is required to carry out research in partial fulfillment of the award.

The topic of research is: **Knowledge, Attitude and Practices Towards Menstrual Hygiene Among Secondary School Girls in Makindye Division, Kampala District.**

This therefore is to kindly request you to render the student assistance as may be necessary for the research.

I, and indeed the entire University are grateful in advance for all assistance that will be accorded to our student.

Sincerely Yours,

  
INTERNATIONAL HEALTH SCIENCES UNIVERSITY  
23 MAR 2018  
Ms. Agwang Agnes  
Dean, School of Nursing  
P. O. Box 7782, Kampala - Uganda

The International Health Sciences University  
P.O. Box 7782 Kampala – Uganda  
(+256) 0312 307400 email: [aagwang@ihsu.ac.ug](mailto:aagwang@ihsu.ac.ug)  
web: [www.ihsu.ac.ug](http://www.ihsu.ac.ug)





# Kibuli Secondary School

Kibuli Hill, Kampala - Uganda  
P.O Box 4216, Kampala (U)  
Tel: 0414-257339, 0414-347285  
0414-347287, Fax: 0414-252548  
E-mail: info@kibuliss.sc.ug  
headmaster@kibuliss.sc.ug

**KSS/NZ/18**

Our Ref: .....

26 June 2018

**OFFICE OF THE DEAN,  
SCHOOL OF NURSING,  
INTERNATIONAL HEALTH SCIENCES UNIVERSITY,  
P.O BOX 7782,  
KAMPALA (U)**

Dear Sir/Madam,

**Re: MS. NAKAYE ZAINAH**

This is to inform you that we granted Ms. Nakaye Zainah permission to carry out her research in this school on the topic of Knowledge Attitude and Practices of menstrual hygiene among secondary school girls in Makindye Division, Kampala division being part of the requirements for her study.

Yours faithfully,

*Sengendo*

Hajjat Fatumah Ssengendo  
**Deputy Headteacher (Welfare)**

## APPENDIX VI: REC APPROVAL LETTER



making a difference to health care

Research Ethics Committee

UG-REC-015

07<sup>th</sup> May, 2018

IHSU-REC/0083

Ms. Nakaye Zainah  
Principal Investigator  
International Health Sciences University  
P. o box 7782  
Kampala, Uganda



### Category of review

- Initial review
- Continuing review
- Amendment
- Reactivation
- SAEs

**RE: "KNOWLEDGE, ATTITUDE AND PRACTICES TOWARDS MENSTRUAL HYGIENE AMONG SECONDARY SCHOOL GIRLS IN MAKINDYE DIVISION, KAMPALA DISTRICT"**

Reference is made to the above mentioned protocol which was submitted to the International Health Sciences University-Research Ethics Committee (IHSU-REC) for initial review and approval.

You have addressed all the issues earlier raised, and the committee is satisfied with the responses submitted in version 2.0 dated 02<sup>nd</sup> May, 2018.

I am glad to inform you that your study has been approved for a period of one year from 07<sup>th</sup> May, 2018 to 07<sup>th</sup> May, 2019.

The documents approved include the following;

Document	Language	Version	Submission Date
Protocol	English	Version 2.0	02 <sup>nd</sup> May, 2018
<b>Consent forms</b>			
Informed Consent	English	Version 2.0	02 <sup>nd</sup> May, 2018
Assent Form	English	Version 1.0	02 <sup>nd</sup> May, 2018
<b>Data collection tools</b>			02 <sup>nd</sup> May, 2018
Semi-structured questionnaire	English	Version 2.0	02 <sup>nd</sup> May, 2018

Please note that any problem of a serious nature as a result of this study to the participants should be reported to IHSU-REC and Uganda National Council of Science and Technology (UNCST) immediately.

Also note that annual report and request for renewal where applicable should be submitted at least one month before the expiry date of approval. In addition, you are also required to submit copies of the stamped approved documents to the Uganda National Council for Science and Technology (UNCST) before the study can commence.

We would like to congratulate you and wish you a successful conduct of the study.

Yours Sincerely,



Dr. Samuel Kabwigu  
IHSU-REC Chairperson



07 MAY 2018

Date