EXPLORING BARRIERS AND CONTRIBUTING FACTORS TO MENSTRUAL HYGIENE MANAGEMENT AMONG SCHOOL GIRLS IN RURAL PRIMARY SCHOOL: KIBOGA DISTRICT

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DEDICATION

This thesis is dedicated to my family for their endless love, support and encouragement

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LIST OF ABBREVIATIONS

CDC	Center for Disease Control
CSOs	Civil Society Organizations
DEO	District Education Officer
FDGs	Focus Group Discussions
GDP	Gross Domestic Production
IDIs	In-depth Interviews
JMP	Joint Monitoring Program
KIIs	Key Informant Interviews
LMIC	Low Middle Income Countries
MHM	Menstrual Hygiene Management
MoES	Ministry of Education and Sports
NGOs	Non-Governmental Organizations
PTA	Parents Teachers Association
SEM	Social Ecological Model
SDGs	Sustainable Development Goals
UBOS	Uganda Bureau of Statistics
UNICEF	United Nations Children's Fund
UNESCO	United Nation Education, Scientific and Cultural Organization
UPE	Universal Primary Education
UTIs	Urinary Tract Infections
WASH	Water, Sanitation, and Hygiene
WHO	World Health Organization

OPERATIONAL DEFINITIONS

Adolescents: This is a time of intense physical and emotional change for young people between the ages of 10 and 17.

Menstruation: Also known as a period or monthly is the regular discharge of blood and mucosal tissue (known as menses) from the inner lining of the uterus through the vagina.

Menstrual Cycles: This refers to the changes that occur naturally in a woman's body to prepare it for pregnancy.

Menstrual Hygiene Management (MHM): This is the absorption of menstrual blood onto clean material which can be changed in privacy. It also incorporates the availability of soap and clean water, to wash re-usable sanitary materials and the body, as well as a suitable place of disposal for used materials.

Puberty: This marks a transition between childhood and adulthood that impacts adolescents' physical, emotional and social wellbeing.

ABSTRACT

In spite of the vast studies on menstruation that have majorly focused on cultural influences and misconceptions as well as poor educational outcome due to mismanagement, there is lack of formative evidence on systems, structures and processes that present as obstacles to the hygienic management of menstruation in rural primary schools in Kiboga district. In this study, school environments both the social and physical have been found to be discriminatory in nature making it extremely difficult for girls to manage their menses. The problem is further confounded by lack of comprehensive accurate information, resources and facilities for effective menstrual hygiene management.

This has prompted the exploration of barriers of menstrual hygiene management, their propagating factors and overall impact on school aged adolescent girls. The outcomes are intended to inform district leadership and the entire rural communities on the importance of supporting schools to create positive enabling environments the are hygienic, safe, and private for girls to manage their menses with dignity.

In this qualitative exploratory study with a narrative strategic approach to inquiry, data collection has been characterized with in-depth unstructured interviews. The units of study and participants have been purposively selected with a primary focus on menstruating girls aged 13 to 14 years. Qualitative data collection methods and instruments have been used to collect data across the cascades of the ecological model. Group discussions and interviews have generated data that has been thematically analyzed to identify themes central to the phenomenon of menstrual hygiene management hence forming the categories of analysis for the study.

Among the current practices identified; school management committees together with the parents' teachers' associations do not consider menstrual hygiene matters on their agendas, school health programs meant to foster health regulations at school were non-existence. As much as school systems have a designated structure among their staff of a senior woman teacher as point of reference when girls seek for assistance in case of menstrual emergencies, they are not supported neither do they have guidance of a policy on how to proceed with menstrual management in school settings. These are some of the glaring gaps that this study was able to identify and hence their impact on the girls stay in school.

In conclusion, school aged adolescent girls in low resource settings lack adequate preparations when they begin their menses. They are limited to access of information, products, and infrastructure hence compromising their comfortability in school. This places them in a vulnerable positions affecting their self-esteem and confidence in school. Recommendations are drawn to attract social responsibility at all levels including civil society organizations to ensure that the psycho-social and physical barriers affecting menstrual hygiene management in schools are addressed. Furthermore, there is need to design policies and create practices that will support school systems in provision of long term solutions to a problem that has dragged for so long.

CHAPTER ONE

INTRODUCTION AND BACKGROUND

1.1: Introduction to the Chapter

After a history of silence, Menstrual Hygiene Management (MHM) in schools is being recognized as a public health challenge rising steadily to the level of global public health awareness with a call for urgent action (Sommer, et *al*. 2010). Globally, there are growing efforts from academia, the development sector, and beyond to understand and address the challenges facing menstruating schoolgirls in Low- and Middle-Income Countries (LMIC). This is supported with evidence from recent qualitative research that has documented challenges girls face in managing their menses, highlighting health, education and psychosocial wellbeing as some of the consequences of poor management (House, et *al*. 2012; Crichton, et *al*. 2013; Dolan, et *al*. 2014; Sommer, et *al*. 2014). Amidst the growing and unrelenting local and global efforts to address MHM in schools and how it is impacting on schoolgirls, there still exist the need to understand dynamics affecting the management of menstruation in a rural primary school setting.

Of recent, research has addressed the neglect of MHM in schools as a significant development issue and a barrier to attaining gender equality. Studies in both qualitative and quantitative works suggest that poor MHM in schools has resulted into absenteeism, distract, and disengagement (Hennegan and Montgomery, 2016). More to this, there is a shortage of literature addressing the impact of MHM on female teachers, however it is believed that, them being part of the school system, it is most likely that poor MHM poses a barrier to female teachers' school attendance as well as student engagement (Grant, Lloyd, and Mensch, 2013).

Furthermore, qualitative work has revealed psychosocial consequences of poor MHM which have significantly affected girls' stay in school due to the feeling of shame, fear, anxiety, and distraction (Sommer, 2009). Studies on MHM have often focused on menarche, reporting high proportions of girls feeling unprepared and afraid at this time. This is further exacerbated by school environments being gender discriminatory in nature making it complicated for schoolgirls to manage their menses with safety, dignity, and privacy, hence impacting negatively on their abilities to succeed and thrive within the school environment (Sommer, et *al*. 2015; Mason, et *al.* 2013; and Sommer, et *al.*2013).

The WHO/UNICEF Joint Monitoring Program (JMP), the Hygiene Working Group defines menstrual hygiene as: Women and adolescent girls using a clean menstrual management material to absorb or collect menstrual blood, that can be changed in privacy as often as necessary for the duration of a menstrual period, using soap and water for washing the body as required, and having access to safe and convenient facilities to dispose of used menstrual management materials (WHO-UNICEF, Joint Monitoring Program; 2012). This definition encompasses the knowledge, facilities, services and behaviors required for good menstrual hygiene to be practiced at personal level (safe use and disposal of menstrual materials, changing and washing) and public level (disposal of menstrual materials).

Having critically considered the major concepts contained in the unified working definition of menstrual hygiene management, this forms the basis upon which the study explores MHM in school settings. MHM practices are explored to identify its barriers, and contributing factors together with overall impact among rural primary schoolgirls of Kiboga district. Preliminary review of both primary and secondary information prior to this study was clearly indicating a lack

of adequate guidance on MHM, with poor quality and an inadequate supply of water, disposal facilities and privacy for changing in many schools in the district. This study, therefore, reveals how schoolgirls struggle to manage their menses in rural school settings, highlighting their experiences, challenges, and overall impact on their health and education, addressing key gaps that require MHM program interventions.

1.2: Background to the Study

Before getting to the details of this study, it is important to have a deep understanding of menstruation and its hygienic management. Menstruation or a menstrual period is a natural physiological phenomenon that is part of a woman's reproductive health which involves the periodic discharge of the lining of the uterus. It is one of the phases of the menstrual cycle were the uterine lining breaks down into a bloody substance which is then passed through the cervix and exits through the vagina. The duration of the process usually lasts from three to five days with an amount of menstrual flow that vary from period to period and from woman to woman (Zareen, et al. 2016). Furthermore, the cycle of building and shedding of the uterus is called the menstrual cycle. A typical cycle is 28 days, although cycles from 21 to 45 days can often occur. Women do not have periods until puberty. The average age for a woman's first period is age 12. The menstrual cycle continues regularly until menopause occurs, around age 50. The menstrual cycle also ceases during pregnancy (Zareen, et al. 2016).

Menarche, the onset of the first menstrual experience, traditionally signifies the transitioning from girlhood to womanhood by young girls (Zareen, et *al*. 2016). According to World Health Organization (WHO), 52% of the female population globally, are of reproductive age and commence menstruation between the ages of 10 and 19 (House, and Mahon et *al*. 2012). This

period is known to represent critical moments for young adolescent girls filled with overwhelming challenges of public health importance, but still under recognized both at global and national stages. The same period is also marked by a number of physiological, behavioral and psychological changes as argued by Datta et *al*. (2012). These challenges vary widely across the world according to geographical locations, racial factors, nutritional standards, environmental influences and indulgence in strenuous physical activities (WaterAid 2009).

Research conducted in Sub-Saharan Africa, Asia and South America, has concentrated on understanding girls' experiences of the onset of menstruation and the subsequent Water, Sanitation and Hygiene (WASH) challenges they face managing their menstruation in school (Sommer 2015). Furthermore, studies have also revealed inadequate social support, ongoing gender inequality, and social and hygiene taboos around menstruation in numerous countries which leave girls experiencing shame, fear, and confusion when trying to cope with their menstrual flow (McMahon, et *al*. 2011; Oruko, et *al*. 2015; Van Eijk, et *al*. 2016; Montgomery, et *al*. 2012). This has presented clear evidence that MHM still remains a latent issue compounded by health related hazards which affects women and girls particularly in poor rural communities (Oruko, et *al*. 2015).

The transition through puberty and the experience of menarche are critical moments in the life course of girls around the world. These moments as mentioned earlier, present public health challenges for adolescent girls that are under-recognized (Sommer, et al. 2015). Much as the social and cultural significance of first menstrual experiences and other pubertal body changes may vary between societies, the need to cope with a changing body, new emotions and monthly menses is a shared phenomenon among girls globally. Evidence especially from low resource countries indicates that many girls start their menstruation uninformed, unprepared, and unsupported to

manage their monthly menstrual periods (McMahon, et *al*. 2011; Sommer, et *al*. 2009; Sommer, et *al*. 2013).

Despite the growing evidence of challenges faced by girls while managing their menstruation periods in school in LMICs and the increasing efforts to address these challenges, there still lacks concentrated efforts at global or national levels to identify key priorities to catalyze actions to transform the school-going experiences for girls (Sommer, et *al*. 2016). In an effort to systematically focus these significant but disparate efforts, in 2014, UNICEF a United Nations program known for providing long-term humanitarian and developmental assistance to children, took the lead of mapping out a ten-year agenda for MHM in schools. This has brought together a range of actors, including academics, donors, non-governmental organizations (NGOs), United Nations agencies and the private sector, from a variety of sectors. Some of the private sectors included WASH, education, gender, sexual and reproductive health and adolescent development with an overall objective of improving MHM especially in schools by 2024 (Colombia University and UNICEF 2015).

Issues relating to menstrual hygiene are not comprehensively incorporated into school curricula and WASH programs, and as such, participation of girls in schools is affected (UNESCO, 2014). In many curricula, there is emphasis on the reproductive process but not on the practical issues girls need to learn to manage menstruation (Sommer, 2010; Mahon, et *al*. 2010). Development partners working on WASH in School (WinS) programs and emergencies have recognized the problem and they are addressing these challenges (Colombia University and UNICEF, 2012). The approaches followed by the different partners vary and they are not at scale. Interventions in MHM should deeply include sanitary material supply, access to information, policy support, and

infrastructure facilities. These are some of the key issues that have been brought to lime lights and addressed in this study.

Every day, schoolgirls in low income countries around the world discover blood on their underwear for the first time, feeling uncomfortable cramping in their lower abdomen, and find themselves in a setting without toilets, water, or a supportive female teacher to explain the changes happening in their bodies (Sommer and Sahin 2013). Their problems are further compounded by culture, taboos and secrecy, as discussed in this study, which complicate the management of menstruation and hence affecting a girl child's education, health and psychosocial wellbeing. UNICEF estimates that one in ten menstruating girls skip school for 4-5 days for every 28 days' cycle or drop out completely. Losing 4-5 days translates to 13 learning days which is equivalent to 2 weeks and 104 hours of school every term (UNICEF, 2013). In Uganda, about 23% of adolescents between ages of 12-18 drop out after they begin menstruating (MoES, 2014).

Evidence clearly shows that, in Uganda, the onset of menstruation highly contributes to the dropout, absenteeism and low completion rates for girls' education and hence compromising the quality of their education (Mpyangu, 2014). In addition, MHM amongst girls in rural government-run primary schools in Uganda is an under-examined area of research (Boosey, et *al*. 2014). Girls in these settings are unlikely to have access to what they need to manage their menstrual flow and are thus more at risk of absenteeism from school, distraction, and disengagement (Wilson, et *al*. 2012). Hence, this study critically examines and focuses on MHM challenges that are negatively impacting on a girl child health and education with recommendable action lines for possible program interventions.

UNICEF (2012) estimates that about 1 in 10 school-age African girls do not attend school during menstruation or drop out at puberty because of the lack of cleanliness and private sanitation facilities in schools. From a practical perspective, girls who lack adequate sanitary materials may miss school each month during their periods. If girls attend schools which lack adequate latrines and water supplies to comfortably change sanitary materials and wash themselves in privacy, they may be unable to remain comfortably in class during their menstrual cycle (Kabir, and Barua, et *al*. 2012). The absence of clean and private sanitation facilities that allow for menstrual hygiene may discourage girls from attending school when they menstruate.

Where the girls are able or determined to attend school throughout menstruation, insufficient facilities and sanitary protection may nevertheless create discomfort in the classroom and an inability to participate (Mahon, and Tripathy, et *al*. 2016). For example, menstruating girls may hesitate to go up to the front of the class to write on the board, or to stand up as is often required for answering teachers' questions, due to fear of having an 'accident' and staining their uniforms (Mahon, Tripathy, and Singh 2016). This creates discomfort and loss of confidence among the girls in class which affects their school performance in the long run.

Studies on WASH programs in schools have also revealed that poor sanitary facilities in schools do not only affect school girls but also the women teachers as well (WaterAid, 2013; WSSCC, 2014). Inadequate sanitary facilities in schools has forced women teachers to share the same facilities with the students or even sharing facilities that are not gender segregated, subjecting them to severe traumatic MHM experiences that eventually pushes them to abscond from duties. This is common practice that has been observed in rural community schools across Uganda (Mpyangu, 2014; MoES, 2014). Given the unavailability of substitute teachers due to teacher shortages all

over the developing world, this leads to reduced teachers' instruction time by 10-20% (WORLD BANK 2005). This directly impacts on the school pupils because of the reduced teacher-student contact time; hence the female teachers intentionally do not attend to their classes in preference to staying at home for the duration of their menses.

Schools should not only aim to help students to grow intellectually, but also to guide them through their physical and emotional aspects as they transition to adulthood by providing them with the information and skills needed to manage their personal and social development (Fakhri, et *al*. 2012). In particular, by providing menstrual-hygiene-related education and services, schools can help ensure students are equipped to understand and manage these changes before they have to confront them personally. Therefore, this study took particular interest to explore the management of menstrual hygiene in rural school settings with specific interest on how it is practiced, its challenges and impact on the adolescent schoolgirls.

1.3: Background to the Study Area

The study was conducted in Kiboga district, located in the central region of Uganda about 120 Kilometers from Kampala by road. The district total population according to the 2014 population and housing census is approximately 159,965 of which, 81,583 are males and 78,383 females with a 2.95% growth rate and average household size is 4.2. More than 70% of the population is under 18 years of age with a population density of approximately 58.9 per Sq.Kms.

Kiboga district is regarded as a poor district based on the district poverty indices where majority of the population is residing in rural areas (Uganda National Planning Authority, 2015). Problems encountered by schoolgirls in the district with regard to MHM, are poor school attendance and

poor academic performance as well as school dropout. In addition, these problems impede on the realization of the Sustainable Development Goals (SDG-4) on universal education and SDG-5 on gender equality and women empowerment (Kiboga District Annual Report, 2014).

The office of the District Education Officer (DEO) reveals that the primary school net and gross attendance rates in Kiboga district, the boy's rates are higher as compared to that of the girls (District Education Annual Report, 2014). However, much is not documented but school-absenteeism and dropout are a common problem among girls in rural primary schools of the district. In reality, both qualitative and quantitative works have suggested that poor MHM results in school dropout, absenteeism, distraction, and disengagement (Grant et.al; 2013).

Organizations such as World Vision Uganda and Child Fund that are working in the rural settings of Kiboga district, promoting child rights and supporting girl child education have time and again reported how schoolgirls from low income families often struggle to manage their monthly periods (World Vision annual report, 2015 and Training Report, 2014). They have clearly reported how girls are constrained by practical, social, economic and cultural factors. These organizations that work closely with the district education department have further revealed that much as their concerted efforts to increase girls' school enrollment, lack of basic needs, like sanitary napkins that facilitate routine activities of girls at early adolescence are observed to deter girls' school-attendance (District School Inspection Reports, 2014 and 2015).

However, Kiboga as a district is giving less attention to MHM issues and studies on menstruation and its hygienic management as well as its influence on girls' education are limited and scarce in the district (World Vision Report, 2014 and District Education Report, 2013). This study is therefore conducted with the aim of assessing the prevailing knowledge about menstruation and

identifying factors that affect its hygienic management. In addition, the study analyzes the associated consequences of menstruation related problems in relation to rural primary school settings.

1.4: Statement of the Problem

An ideal school setting committed to protecting adolescent girls and maintaining their menstrual hygiene status should ensure that girls and women teachers are able to break taboos and demand adequate facilities for MHM that suit their needs. Such a school should holistically meet the essential components of MHM such as articulated information, creating awareness and confidence for girls to manage their menses with safety and dignity using safe hygienic materials. More to this, schools should have adequate WASH facilities accessible to menstruating girls to wash and bathe with soap and plenty of clean water. In addition, there should be safe and convenient facilities to dispose of used menstrual management materials with privacy and dignity (WHO-UNICEF, Joint Monitoring Program; 2012).

In his study, Creswell (2014) states that, educating a girl child has significant benefits for her family, community and country at large. In this respect, MHM is being recognized as a critical human right and development problem, one that influences poverty levels and even a country's Gross Domestic Production (GDP). However, according to UNICEF, one out of ten African schoolgirls skip school or drop out of school entirely due to lack of menstrual products and poor access to proper sanitation. Consequently, dropping out of school altogether has been attributed to girls being unable to manage their menses hygienically at school, hence posing risks of missing substantial proportions of their education and falling behind (Jasper, et *al*. 2012).

Poor protection and inadequate washing facilities may increase susceptibility to infection, with the odor of menstrual blood putting girls at risk of being stigmatized. Infections due to lack of hygiene during menstruation have been reported in various studies (Poonam et.al, 2016; Mudey et.al; 2010; Ayalew et *al*., 2008). These studies further reveal that most adolescent girls have incomplete and inaccurate information about menstrual physiology and hygiene hence predisposing them to menstrual related infections such as bacterial vaginosis. However, this study does acknowledge the fact that a limited body of evidence supports the premise that Bacterial Vaginosis (BV) may be more common in women with unhygienic MHM practices (Balamurugan, and Bendigeri 2012).

Basing on the 2012 census, the population of women in Uganda is 18,124,684 of which 24.5% (4,440,547) are adolescents between 10-19 years and 84% of whom are rural and assumed to be unable to sufficiently access and/or afford sanitary pads. That is an estimate of 3.75 million girls living without proper sanitary care (UBOS, 2014). These numbers keep increasing, as Uganda has the third highest fertility rate in the world - averaging six children per House Hold (HH) in 2013. These national indicators when directly manipulated, they best fit the Kiboga context; revealing how schoolgirls have limited access to proper menstrual products and hence inappropriate sanitary care.

Formative research across the world (World Bank, 2013; WaterAid, 2013; Sumpter and Torondel, 2013) has continuously shown that girls in low-resource settings such as Kiboga face numerous challenges managing menstruation in school. Furthermore, literature is revealing (Sommer, 2010; Caruso, et *al*. 2013; Grant, et *al*. 2013; McMahon, et *al*. 2011) how school environments are discriminatory in nature making it difficult for menstruating girls to adequately manage their monthly menses with safety, dignity and privacy. The Kiboga District School Inspection Reports

(2014 and 2015) have highlighted inadequate WASH facilities at school, limited access to effective, hygienic menstrual materials and inaccurate information about menstruation and the biology of puberty as some of the common challenges of MHM in schools. Therefore, the inability to effectively manage menstruation contributes to absences of up to four to five school days each month, equating to as much as 20% of the academic year intentionally skipped, simply due to menstruation as revealed by Caruso, et al. (2013).

The health, education and WASH sectors of Kiboga district do not have any MHM incorporated in their programming. This is a clear indication that the district does not have any guidance or support on how to proceed with the management of menstrual hygiene in schools hence presenting critical implications for girls' health and educational outcomes. Failure to address MHM needs in schools may push girls to resort to unconventional means of managing their menses that are considered unhygienic. Unhygienic menstrual management practices raise concerns of reproductive tract infections and inflammatory disorders (Sumpter and Torondel, 2013). Using unclean materials, insertion of unclean materials into the vaginal canal, use of highly absorbent materials, frequent vaginal douching, and lack of hand-washing have been suggested to increase the risk of infection (House, et al. 2012). Yet in many communities such as those of rural Kiboga, these potentially harmful practices are assumed to be common amongst adolescent girls.

Currently, there is no research at all about MHM in Kiboga district, particularly among young adolescent school-aged girls. Consequentially, the challenges and impacts of MHM among schoolgirls are not well understood and hence, there is lack of evidence required by organizations such as World Vision and Child Fund to guide their programming and interventions to improve MHM in rural schools. This study therefore intends to address these gaps with an aim of exploring

current MHM practices, identify barriers and their contributing factors which impact on school-going young adolescent girls.

1.5: Research Questions

1. What experiences and challenges do schoolgirls of 13-14 years face while managing their menstrual periods in rural primary schools of Kiboga district?
2. What are the barriers and contributing factors to the existing menstrual hygiene management practices affecting schoolgirls in rural primary schools of Kiboga district?
3. What are the gaps affecting menstrual hygiene management in rural primary schools of Kiboga district and their consequent implications?

1.6: Theoretical Model for the Study

This study adopted a five-level Social Ecological Model (SEM) to better understand MHM in rural primary schools with a major focus on its potential barriers, associated challenges and overall impacts on school-aged girls of Kiboga district (Dahlberg, et al. 2002). This model considers the complex interplay between individual girls, their immediate relationships, and the community in which they stay and overall societal factors affecting MHM. The model serves as a guide to understand the range of factors that put schoolgirls at risk for their health, education, and psychosocial wellbeing while experiencing menstrual management challenges in rural schools. In addition, the model also suggests that in order to have good MHM standards in schools, it is important to act across multiple levels of the model at the same time (CDC 24/7).

The ecological model has its origins in the fields of psychology and human development. In the mid-20th century, works of Lewin, Barker, and Bronfenbrenner, and others began to understand

behavior in a context of the interplay of the individual and the environment (Stokols, 1996). Therefore, this study is utilizing the theoretical underpinning of the SEM to lay emphasis on the linkages and relationships among the multiple factors affecting MHM in rural primary schools.

Poor MHM in rural primary schools of Kiboga district is assumed to have multiple levels of influence explored by this study as guided by the SEM. The ecological model places emphasis on the importance of the socio-cultural and physical environments that are strongly believed to shape patterns of MHM in rural school settings. In addition, the model views poor MHM as the outcome of interaction among many factors at five levels - the biological, the personal, the interpersonal, the environmental and the societal. Furthermore, the SEM in this study is used as a comprehensive health promotion framework to explore girl's individual menstrual experiences in relation to the norms, beliefs, and social and economic systems that contribute to poor MHM in rural primary school settings (Jewkes, et al 2002). The following is the cascade of the SEM:

1.6.1: Biological Factors

At the center of the model are the biological factors experienced by menstruating girls individually. At this level, the study considered personal history and physiological factors affecting each girl while managing her menses. Example of these factors included age, severity of menstrual pains, including headaches and cramps, influence on behavior and school experience, intensity of menstrual flow and ability to manage menstruation in school settings, weakness, fatigue and ability to concentrate in class. This forms the foundational level, though the model recognizes that many external forces influence these individual experiences (Ruderman, 2013). In order to facilitate change toward the improvement of MHM in rural schools, it is important to address these external influences.

THE SOCIOECOLOGICAL FRAMEWORK

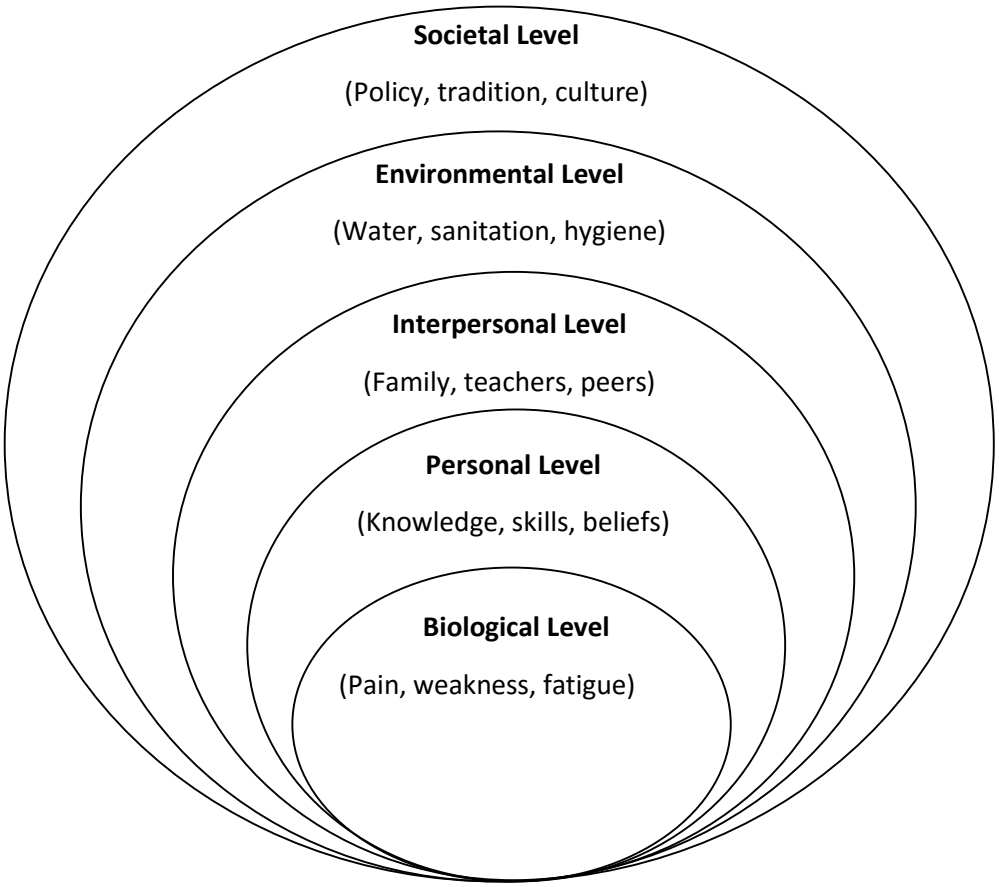

Figure 1: The Social Ecological Model representing a social system

1.6.2: Personal Factors

The next level of the SEM presents personal factors considered as the first of these external influences. At this level, the study considers the importance of knowledge, skills and beliefs acquired by the girls in relation to their menstrual behaviors (Ruderman, 2013). The study reviews the literature on biological knowledge about menstruation and practical knowledge about menstrual hygiene management, coping mechanisms and behavioral adaptations, needs, attitudes and beliefs about menstruation, and self-efficacy in regards to management.

1.6.3: Interpersonal Factors

At this level, primary groups of social interaction, such as family and friends are considered. This is the level where social norms operate, and processes such as relationships with family, teachers and peers come into play. These primary interactions represent the associations that provide social identity and role definition (Jewkes, et *al*. 2002). At this level, the study specifically focuses on girls, boys, and mothers, their perceptions of changes in gender roles post-menarche, relationships with family, peers and teachers, access to support for information, practical guidance and supplies, role of teachers in supporting girls, and changes in girls' interactions with others.

1.6.4: Environmental Factors

School forms an environment to which the girls belong to most of the time, it is composed of assemblies of primary interpersonal associations. Schools are social institutions, with rules and regulations for operations that affect how or how well, for example, MHM knowledge and skills can be provided to an individual or a group of girls (Moss, et al. 2005 and Stokols, 1996). In regards to MHM, school environmental factors include water, sanitation, physical structures and availability of menstrual resources. The study took keen interest in observing school WASH conditions, availability and cost of MHM supplies, availability of resources and support for WASH, teachers' role in educating girls, perceptions of the school administrators, and use of WASH facilities.

1.6.5: Societal Factors

Finally, the outermost level of SEM is the social structure/ public policy level. This is the broadest level of the model and can influence all the other levels. The study reviewed policies, traditions

and cultural beliefs that are believed to determine the way menstruation is being managed in schools. Special consideration was given to school/gender WASH policies, curriculum and teacher training standards, reports, national and community-level government officials, non-governmental organization staff, solicitation of norms, beliefs and local knowledge from girls, boys, teachers, mothers and education managers at district level.

The cardinal purpose of this theoretical model (SEM) in this study is to provide a research framework for exploration of the barriers and contributing factors to poor MHM that affect the comfort of adolescent girls' stay in school in the rural primary schools of Kiboga district. Therefore, using the cascades of the SEM in this qualitative narrative research has focused the study on the school-aged girls, boys, mothers and school teachers to reveal their present experiences of menstrual management in rural primary school settings.

1.7: Study Goal

The overall goal of this study is to explore the barriers, their contributing factors, and overall impacts of menstrual hygiene management among school aged adolescent girls in rural primary school settings of Kiboga district. The intent is to inform the district leadership and the entire rural communities in Kiboga district on the relevance of creation of school supportive environments for all school aged girls to be able to manage their menses hygienically, safely, in privacy, and with dignity hence improving girl child education, health and psychosocial wellbeing.

1.8: Aim of the Study

Guided by the Social Ecological Model (SEM) as a theory-based framework, this study intends not only focusing on practical MHM experiences of individual girls, but also characterize their

social and physical school environments into systems, structures, and processes that directly present barriers which determine how girls manage their menstrual cycles. Ultimately, the study will trigger off menstrual hygiene matters in the district with special attention to the top leadership and all other stakeholders, fostering schoolgirls to acquire practical skills that can enhance their management of menstruation in school settings.

1.9: Specific Objectives

This study fulfilled the following objectives:

1. To describe challenges that influence school-aged girl's personal experiences while managing their menstrual cycles in rural primary school settings of Kiboga district.
2. To identify gaps in the existing menstrual hygiene management practices in rural primary school settings of Kiboga district.
3. To explore contributing factors to the existing menstrual hygiene management practices in rural primary schools of Kiboga district.

1.10: Justification

In Uganda the education sector has overlooked aspects of the school environment that hinder girls' pubertal transitions in schools across rural communities. In Kiboga district, minimal empirical attention is given to structural and environmental factors which affect menstruating girls both physically and socially. Furthermore, schools in the rural community settings are impacting on pubescent and newly menstruating girls' school attendance and participation and, ultimately, their health and psychosocial well-being. Consequently, maintaining hygienic standards during menstruation is of utmost importance for the well-being, dignity and mobility of schoolgirls.

Therefore, it is upon this study that a range of personal experiences, challenges and needs girls have during menstruation in school settings be explored with intent to foster a broad movement towards mitigating poor MHM in rural primary schools of Kiboga district. The findings of this study are intended to inform ongoing and future initiatives to improve girls' health and education in Kiboga district. Girls' involvement in this study enables identification of recommendations aligned with their voiced concerns.

1.11: Significance of the Study

This study provides evidence on the management of menstrual hygiene in rural schools, giving insight to the district leadership to prioritize and commit MHM in their programming agendas. In addition, the district leadership can base on the findings in this study to advance MHM in schools through comprehensive advocacy and communication to generate by-laws, strategies and guidelines that address MHM in schools. The study also presents findings that can be adopted by Civil Society Organizations (CSO) as benchmark information for aligning MHM program interventions, implementation and advocate for policy changes.

The Directorate of Education in the district together with the school administrators can adopt recommendations from this study to create supportive MHM environments in schools that have accessible water supply, sanitation and hygiene facilities. The study further suggests the importance of integrating MHM into the school curriculum for teachers to break the silence and facilitate change of perception and create positive social norms among school pupils. Schools can also base on the findings in this study to provide knowledge and information on menses and good menstrual hygiene practices.

CHAPTER TWO

LITERATURE REVIEW

2.1: Introduction to Chapter

In this chapter, a review of existing literature on MHM by adolescent school-aged girls is performed to support the study undertaken in this thesis. The overall purpose of the literature review is to substantially explore previous studies on MHM in school settings. Guided by the theoretical framework of the SEM, literature is reviewed and structured basing on the objectives of this study. This is in order to map out the basic requirements of MHM and how they are integrated into school systems, processes and structures highlighting existing gaps to be addressed in this study. The main sources of information for this chapter are books, journal, theses and dissertations and the internet.

World over, girls who are menstruating often do not have their needs fully met in their school environment and this is common in LMICs. This has resulted into a growing focus on MHM being recognized by the international community with specific interest to highlight the profound impacts of this problem on school-aged girls (Sommer and Sahin 2013). This has provided the basis for much needed research, programming, and policy agenda. Therefore, this study is an exploration of barriers of MHM and contributing factors in rural primary school settings of Kiboga district. The overall objectives are, first, to describe girls' experiences while menstruating at school and second, how the school social and physical environments are impacting on girls' health, education and psychosocial well-being.

The WHO - UNICEF, Joint Monitoring Program (JMP) defines Menstrual Hygiene Management as:

> Women and adolescent girls using a clean menstrual management material to absorb or collect menstrual blood, that can be changed in privacy as often as necessary for the duration of a menstrual period, using soap and water for washing the body as required, and having access to safe and convenient facilities to dispose of used menstrual management materials. They understand the basic facts linked to the menstrual cycle and how to manage it with dignity and without discomfort or fear (WHO-UNICEF, Joint Monitoring Program; 2012, page 2).

This definition focuses on the knowledge and behaviors required for good menstrual hygiene, including personal hygiene (using clean materials, being able to change them and wash when needed) and public hygiene behaviors (disposal of used materials). However, it delimits good MHM practice as a hygiene behavior. It does not set out all that is needed for the behavior to be practiced. Furthermore, the definition makes it possible to understand the critical MHM practices necessary for girls and women to manage monthly menses with dignity and comfort, but it does not speak to the broader issues regarding the girls' knowledge and understanding of menarche, which is equally important in assuring the girls' well-being and healthy transitioning through puberty.

The review of the literature in this study and the subsequent research activities and corresponding themes are guided by the theoretical lens of the social ecological framework conforming to the conceptual framework of similar studies undertaken by UNICEF in other countries (UNICEF, Bolivia 2012). Naeem, et *al.* (2015) argues that societal and cultural norms, environmental and social influences, personal perceptions, and personal biology are all determined by how girls experience and manage menstruation in school settings. Therefore, the researcher has examined the personal, social and physical environmental factors that influence girls' MHM experiences in and out of school basing on the ecological model.

2.2: Biological Factors Related to MHM

Biological/behavioral factors related to MHM are at the center of the ecological model and include personal factors that increase or decrease the likelihood of individual girls being challenged while managing their menses in school settings. Some of the biological factors that influence MHM in schools include attitudes, pain, intensity of the flow, weakness, fatigue, headaches and cramps (Jewkes, et *al*. 2002). Exploring the barriers and contributing factors of MHM at this level of the model, provides insight on how schoolgirls experience menstruation on an individual basis. The study eventually suggests interventions and recommendations that are designed to effect individual social and cognitive skills and behaviors at this level.

This study has already discussed menstruation being a normal physiological phenomenon, also known as a period or monthly periods (Women's Gynecologic Health, 2011). Menstruation is the regular discharge of blood mucosal tissue from the inner lining of the uterus through the vagina (Menstruation and the menstrual cycle factsheet 2014). Up to 80% of women report having some symptoms prior to menstruation (Biggs and Demuth, 2011). Common signs and symptoms include acne, tender breasts, bloating, feeling tired, irritability, and mood changes (Premenstrual syndrome (PMS) fact sheets, 2015). These may interfere with normal life, therefore qualifying as premenstrual syndromes, in 20 to 30% of women. In 3 to 8%, symptoms are severe (Biggs and Demuth, 2011). This is an insight for the study on what schoolgirls experience while menstruating in a school environment that is not supportive enough to embrace such pains.

The first menstruation (menarche) occurs between the ages of 11 and 15, however, periods may occasionally start as young as eight years old and still be considered normal (Women's Gynecologic Health, 2011; Aniebue, et *al*. 2009). The average age of the first period is generally later in the developing world, and earlier in the developed countries (Aniebue et *al*. 2009). The

typical length of time between the first day of one period and the first day of the next is 21 to 45 days in young women, and 21 to 31 days in adults (an average of 28 days). Menstruation stops occurring after menopause, which usually occurs between 45 and 55 years of age (Women's Gynecologic Health, 2011). This is vital information that is required by menstruating girls but often lacking especially in LMICs such as Uganda. Without basic menstrual hygiene information, girls individually go through difficult monthly periods that affect their psychosocial well-being eventually impacting on their health and educational outcomes.

The onset of menstruation (menarche) is a key indicator in pubertal development, serving as a biological and social measure of a girl's healthy transition from childhood into adolescence or young adulthood. From a physiological perspective, the age of menarche serves as an important clinical indicator of a girl's physical maturation, nutritional status, and reproductive health (Sommer, 2013). From a social perspective, particularly in many low-income countries, the onset of menses has traditionally served as a symbol of fertility, sexual readiness, and marriage ability, depending on the local cultural context (ibid). However, in Uganda given the public health importance of tracking menarche within individual girls, the national country data including the demographic health surveys do not capture this important measure.

The effective, hygienic management of menstruation is essential for women and girls to participate in society with dignity and comfort. Effective menstrual hygiene management includes access to clean absorbents, with facilities to change, clean or dispose of these as needed, and access to soap and water for cleaning the body and absorbents (Sommer and Sahin; 2013). Studies across low and middle income countries (LMICs) have reported that more than 50% of girls have inadequate MHM, with higher proportions reported in rural areas (Sommer, 2010; Dasgupta et *al*.; 2008; and

Adinma et *al*. 2009). This has prompted this study to explore further whether MHM practices in rural schools are consistent with the concept definition of MHM.

Poor menstrual hygiene and inadequate self-care are major determinants of morbidity and other clinical complications among adolescent girls. Some of these problems include urinary tract infections (UTIs), scabies (skin rash) in the vaginal area, abnormal abdominal pain, and complications during pregnancy (Lawan et *al*; 2010, Ayalew et *al*; 2008, and Dasgupta et *al* 2008). As a girl progresses from puberty into womanhood, UTI are potentially triggered by poor MHM could affect her reproductive health. Studies have shown women with BV may be at higher risk of adverse pregnancy outcomes like preterm birth (Nelson et *al* 2007), acquisition of sexually transmitted infections and development of pelvic inflammatory disease (Poonam et *al*, 2016).

Kasaro et *al* (2016) states that, bacterial vaginosis is a poly-microbial syndrome characterized by the imbalance of resident bacterial flora in the vagina. The normal vaginal flora is dominated by hydrogen peroxide producing lactobacilli. In bacterial vaginosis, there is a reduction in the population of lactobacilli with a simultaneous increase in a diverse community of bacteria, including *Gardnerellavaginalis*, *Pretovella (sp)*, *Bacterioides (sp)*, *Peptostreptococcus (sp)*, *Mycoplasma hominis*, *Ureoplasma urea*, *Mobiluncus species (sp)*, and other bacterial species. Much as it is important to deal with menstruation comprehensively, this study excludes the clinical aspects and only focuses on MHM as experienced by the schoolgirls in a school setting.

Studies in rural Sri Lanka and India found that 69.0% of adolescent girls were using old pieces of cloth or even no protection at all during menstruation (Haque et al., 2014; Kabir, 2012; and Farhana et *al.*, 2016). This was directly related to the high prevalence of urinary infections that affected the adolescent girls in regards to their menstrual hygiene behaviors. Therefore, lack of MHM

awareness and inadequate access to sanitary facilities are some of the key essentials for menstrual hygiene in schools addressed in this study.

Menstruation can cause discomfort and high incidences of pain for a majority of adolescent girls. It can also cause shifts in mood, depression, vomiting, pyrexia, endometriosis, hemorrhage, migraines, anemia and fibroids (Donimirski, 2013). The same study suggests menstruation being a potential cause of cancer if the cells are mistakenly divided uncontrollably. Exposure to potential risks of contracting blood-borne diseases such as HIV or Hepatitis B through unprotected sex are also increased during menstruation because the high concentration of viruses which are found in blood (UNAIDS et *al*., 2004). As a result, many girls suffer from these diseases and their complications can even lead to infections being transmitted to the offspring when they conceive (Shanbhag et *al*., 2012). These are some of extreme scenarios this study intends to bring to lime lights if MHM in rural schools is to be addressed adequately.

In Bangladeshi, menstruation is still regarded as unclean or dirty in society and as a result girls are often reluctant to discuss this topic with their parents and hesitant to seek help regarding their menstrual problems (Farhana, and Nasreen 2016). Because of various myths, misconceptions and restrictions practiced during menstruation, adolescent girls often develop negative attitudes towards this natural physiological phenomenon. This is because, majority of girls are not informed about menarche or how to manage menstrual bleeding and hence lack scientific knowledge about menstruation and puberty (Kabir, 2012). This study is placing emphasis on the concept definition of MHM which clearly put menstrual hygiene information at the fore front to be readily accessed by menstruating girls both at school and home all the time.

Given the traditional settings in Uganda menstruation is kept invisible and silent, and sometimes, menstruating women and girls are also kept invisible and silent too (Boosey, et al. 2014). This is a common traditional culture in many areas of developing countries, a culture of silence surrounds the topic of menstruation and related issues. As a result, millions of girls and women are subject to restrictions in their daily lives simply because they are menstruating and more to this many young girls lack appropriate information on menstrual hygiene (Kaiser, 2013).

2.3: Personal Factors Related to MHM

At the personal level, girls lack basic knowledge about menstruation and need practical guidance for managing their menses. This is the level were girls express their feelings associated with menstruation, attempt to acquire skills to manage menstruation, as well as seek for knowledge and information related to menstruation. At this level, the study considers the importance of knowledge, skills and beliefs acquired by the girls in relation to their menstrual behaviors (Ruderman, 2013).

Das et *al*. (2015) stressed that MHM practices vary worldwide and depend on the individual's socioeconomic status, personal preferences, local traditions and beliefs, and access to water and sanitation resources. Furthermore, MHM practices can be particularly unhygienic and inconvenient for girls and women in poorer settings. Often the methods of management can be unhygienic and inconvenient, particularly in poorer settings. In India, between 43% and 88% of girls wash and reuse cotton cloths rather than use disposable pads (Dasgupta, and Sarkar, 2008). However, reusable material may not be well sanitized because cleaning is often done without soap and with unclean water, and social taboos and restrictions force drying indoors, away from sunlight

and open air (Das, et *al*., 2015). Unhygienic washing practices are particularly common in rural areas and amongst women and girls in lower socioeconomic groups.

Studies have indicated that girls go into hiding on the onset of their menses and miss school due to fear of a shameful menstrual leak (Aluko et *al.,* 2014; Golchin et *al*., 2012; Gultie et *al.,* 2014; and Costos et *al*., 2002). These schools-aged girls have clearly demonstrated a lack of understanding of why menstruation occurs, how it relates to fertility, and when to expect their monthly periods (Sommer, et *al*., 2013). At the beginning of this normal biological phenomenon of sexual maturation, girls around the world report feeling afraid, ashamed, and confused (Sumpter and Torondel 2013). Some of these challenges have arisen from cultural taboos around menstruation, from adult silences around discussing sexual maturation, or from misinformation provided to them from a variety of sources (e.g. Peers, parents, and teachers). The result is that girls begin their periods without fully understanding what is happening to their bodies.

Lack of information, misconceptions and adverse attitudes to menstruation may lead to a negative self-image among girls who are experiencing menses for the first time, and can result in a lack of self-esteem as they develop their personality as women (Rizvi and Ali, 2010). The culture of 'silence' around menstruation increases the perception of menstruation as something shameful that needs to be hidden, and may reinforce misunderstandings and negative attitudes toward it (Diorio and Munro 2000; Kirk and Sommer 2006). In the Ugandan context, menstrual education is not considered in the school curriculums, menstrual information is always acquired informally associated with misconceptions that this study is addressing.

It has been noted that few studies have quantified the relationship between MHM and psychosocial consequences; however, some programs of qualitative works have reported psychosocial

consequences of poor MHM as observed by Sommer (2009). Feelings of shame, fear (and fear of stigma), anxiety, and distraction have been described across a range of contexts and studies conducted often focus on menarche, reporting high proportions of girls feel unprepared and afraid at this time (Crichton et.*al*, 2013 and Rizvi and Ali, 2010). This study addresses the question of experiences girls go through while menstruating in school, revealing the challenges and how they impact on girl child health and education.

Many girls in LMIC receive no or literally incorrect guidance prior to menarche about the normal physiological process of menstruation or the pragmatics of MHM (Sommer et *al*., 2015). This in turn results in numerous misconceptions about their own fertility, creating vulnerability to adolescent pregnancy if girls are sexually active (Mason et.*al*, 2013). Sommer (2011) suggests that, there exists a window of opportunity to reach girls at menarche, as their bodies are biologically changing and they are encountering profound new social dynamics within their families and communities. This calls for the adolescent sexual and reproductive health (SRH) sector to expand its focus and intervention timing beyond contraception (i.e., family planning) and disease prevention to include puberty and menstrual care guidance.

Existing evidence from high-income countries suggests girls reaching menarche and puberty early, without adequate emotional support, are likely to engage in early sexual relations and substance abuse, posing risks of adolescent pregnancy and other negative health outcomes (Mendle, et *al*., 2007). In addition, William and Currie (2000) suggested that starting menstruation in ignorance and in fear may weaken the girls' sense of self-confidence and competence. These deficits could also compromise the girls' future abilities to assert for themselves in situations regarding their sexuality and to maintain their sexual and reproductive health (Mason 2013). Desk reviews prior

to this study pointed out high rates of adolescent pregnancy in Kiboga district which implies early sexual relations among adolescent girls.

Menarche, or the onset of menstruation, marks a significant turning point in the life of a young girl. It alters her perception of herself and the perceptions or pressures that society may place on her (Sommer, 2010). In a study on schoolgirls in Tanzania, Sommer (2009) found that the onset of menstruation also meant the onset of new restrictions on movement. Girls' abilities to pursue an education or a career became obstructed. In Kenya, Thomas (2002) found that reproductive health issues - a term that emphasizes marriage, pregnancy and female circumcision also includes menstruation- were the leading cause of drop out among primary schoolgirls. To better understand menstrual hygiene and how it is perceived at a personal level, this study engages schoolgirls both in individual interviews and group discussions.

Ignorance of pubescent girls about their bodies and sexual and reproductive health and rights affects their sense of empowerment to manage monthly menses and to make informed decisions about sex after menarche (UNESCO, 2014). Without guidance on these topics, adolescent girls run an increased risk of becoming pregnant or acquiring HIV (or other sexually transmitted infections) from unsafe sexual relations, linked to their vulnerabilities because of uneven gender power in intimate relationships (Sommer, et *al*., 2012). Much as this study acknowledges a gap of sex and sexuality education among the adolescent girls but it is also important to note that government of Uganda does not permit that kind of education in its education systems.

Assessing girls' understanding about menstruation is one of the key aspects for this study. Schoolgirls should have knowledge of cycle length, requirements for hygiene, and providing them with the physical and emotional support needed to manage their monthly menstruation with

confidence. This enables girls to take greater charge of their lives, feel more positive about themselves and their bodies, and may help to mitigate subsequent preventable health problems (House et.*al*, 2012 and Sommer 2011). In this way education interventions may facilitate school attendance and engagement in the classroom through improved ability to effectively manage menstruation, and confidence in management methods. Menstrual education may also reduce negative psychosocial consequences by normalizing menses and dispelling myths (Dolan et.*al*, 2013).

2.4: Interpersonal Factors Related to MHM

Interpersonal relationship level influences are factors that increase or decrease MHM risks as a result of relations with peers, school teachers, and family members. A girl's closest social circle – peers, partners, teachers and family members – have the potential to shape a girl's individual behavior and range of experience (Dahlberg et *al*., 2002). The study recommends interventions for interpersonal relationship level influences which include family support, MHM skills development, and parenting/community training.

A comparative study of MHM in Cambodia, Ethiopia, Ghana, and Tanzania found that girls faced common challenges across these disparate contexts, including inadequate guidance and information both pre and post-menarche and insufficient school latrines and water supply (Sommer et al., 2014). Studies undertaken by Emory University and UNICEF in Bolivia, Philippines, and Sierra Leone also found lack of communication; insufficient knowledge, practical guidance, and support; limited access to preferred materials; and inadequate water access, sanitation conditions, hand washing facilities, and disposal mechanisms to be common across contexts (Caruso, et al. 2013; Haver, et al. 2013; Long, et al. 2013). These are crosscutting issues common with LMICs

such as Uganda and they reach out to rural communities of Kiboga district the area of interest in this study.

The majority of rural schools in Sub Saharan Africa, knowledge of teachers and counselors on MHM is not sufficient because they do not have formal MHM-related training nor do they have tailored MHM guidelines to support them while providing assistance to the adolescent girls (Salim and Begum, 2016). This has been observed in Zimbabwe, Masvingo district, were 84 per cent of the schools provided guidance and counseling services for girls on MHM. The concern is that 50 (25 per cent) of those schools have male counselors in charge of MHM which has made the effort less effective. In Southern Sudan on average a school has 13 male and 2 female teachers were both male and female teachers are untrained on issues of MHM and hence cannot support the girls and some schools do not have a female teacher at all (WaterAid; 2010). Teachers have been represented in this study on how they perceive MHM within school systems, processes and structures and to describe its influence on schoolgirls.

The role of teachers in menstrual education has been insufficiently documented to date and needs additional research. Available evidence primarily indicates that both female and male teachers are not prepared to discuss the topic of puberty and menstruation with their students. In many countries, even if the curriculum includes puberty, menstruation and related topics, teachers are reported to skip over or minimize such material, either being uncomfortable covering such topics due to local sensitivities and taboos, or not sufficiently prepared to cover them (McMahon, et *al*., 2011; Haver, et *al*., 2013; Long, et *al*., 2013).

The government of India, under the Ministry of Drinking Water and Sanitation, placed emphasis on working with adolescent boys, male teachers and parents in the management of menstrual

hygiene in schools (Muralidharan, et *al*., 2015). As a result, informed adolescent boys, male teachers and parents have contributed to a supportive environment for adolescent girls in school and at home. Working with boys ensures that girls are free from mockery and treated with respect and dignity throughout their school life and beyond. In another study, Mahon, et *al*., (2014) categorically stated that men and boys can support women and girls to manage menstruation effectively across different social domains which include household, community, school, and work.

Furthermore, in some settings parents may encourage girls to drop out of school because puberty and menstruation are associated with reproduction. In such case, parents prefer their daughters to get married and contribute to the family's income, and may prioritize informal knowledge which is not taught in school, example, how to maintain a household (Kansal et al., 2016). In addition, parents have the perception that, after menarche a girl becomes desirable and able to procreate, therefore parents and girls become increasingly fearful of potential sexual harassment by boys and male teachers at school (ibid.). Parents may also withdraw girls from schools to avoid pregnancies resulting from consensual or non-consensual sex (McMahon, et *al*., 2011). This study has engaged with parents as respondents in group discussions to have their perceptions captured and how they impact on girl child education.

The sexual and disgust connotations of menstruation make it a taboo subject for girls to raise even with their mothers. Without good information, young girls are frightened at the onset of their period and may be anxious about the process (Aniebue, et.*al,* 2009). A qualitative study found that two thirds of South Indian girls described their menarche as shocking or fearful. In another study setting, menarche is 'celebrated' with a 9 to 13-day seclusion period with many behavioral

restrictions as observed by Narayan et *al*., (2001). Following menarche, the social effects of the ineffective management of regular menstruation may include exclusion from everyday tasks including touching water, cooking, cleaning, attending religious ceremonies, socializing, or sleeping in one's own home or bed (McMahon, et.*al*, 2011; Sommer, 2010; and Pillitteri, 2011).

There is insufficient knowledge about menstruation, the menstrual cycle and MHM in rural primary schools which results in lack of preparation for menarche, misconceptions about disposal of soiled absorbent materials, and inadequate understanding about how to manage menstruation safely at school. While mothers, friends and teachers are the major sources of information about menstruation they are currently ill-equipped to provide accurate and comprehensive information to girls (Jarrah and Kamel, 2012). This study has addressed interpersonal factors surrounding menstruating schoolgirls by exploring the perceptions of boys, parents and teachers towards menstrual hygiene in school settings.

Boys and girls find menstruating girls smelly and objectionable – in focus group discussions in one study in Nepal, many girls revealed that when they did attend school during menstruation they often performed poorly, due to worry that boys would realize their condition (House et *al*., 2012). In addition, girls fall behind in their studies, unable to learn due to abdominal pain and MHM related stress. They often drop out or do not continue to secondary school as the onset of puberty and changes in their bodies are unmatched by facilities and conducive environment (Ayub et *al*., 2016). These are some of the factors that simply force girls to stay home from school in order to avoid embarrassment. This study with keen interest reveals and highlights such challenges and provides recommendations along the levels of the ecological model hence the guiding framework.

Lack of information prior to menarche has led young girls to believe that menstruation is a monthly occurrence where the body gets rid of spoiled blood. It has been noted that girls experience different feelings including fear, shame and guilt because of lack of prior information about menstruation (Oche, et.*al*, 2012). A study done among Nigerian secondary schoolgirls revealed that adolescent girls gave different meanings to menstruation and perceived it as a physiological process, as an assurance of fecundity, and as a release of 'bad blood' (Adinma and Echendu, 2008). However, girls who have information about menstruation before menarche have been known to have a positive attitude towards MHM (Abeer et.*al*, 2012). This presents a missing link in MHM in rural schools of Kiboga which this study is taking keen interest by ensuring adolescent girls undergo premenstrual preparations to have them ready before menarche.

Girls face unsupportive social and physical environments, where there are insufficient WASH facilities to properly manage their menses or proper student/teacher codes of conduct to protect girls from bullying and teasing. In addition, they may also lack access to proper menstrual management materials (Crichton et.*al*, 2013; Haver, et.*al*, November 2013). When girls experience menstruation without adequate facilities, information or materials to manage their menses at school, they become distracted and unable to concentrate (WHO, May 2014; Pillitteri, 2011). As a result, girls may stop participating in the class, isolate themselves or become socially excluded by peers. Some may even skip school altogether. These are the gaps this study is addressing with a focus on how rural school settings are prepared to handle schoolgirl's MHM needs.

For too long, the education system in Uganda has remained silent on the issue of menstruation resulting in menarche and menstrual hygiene management becoming distressing experiences for many young girls, negatively affecting their school attendance and performance. Schools should

not only aim to help students to grow intellectually, but also to guide them through the physical and emotional aspects of their transition to adulthood, by providing them with the information and skills needed to manage their personal and social development. In particular, by providing menstrual hygiene-related education and services, schools can help ensure students are equipped to understand and manage these changes before they have to confront them personally.

2.5: Environmental Factors Related to MHM

At environmental level, factors that influence MHM are based on community and its social systems in which individual girls have experiences and relationships such as schools, and neighborhoods. For example, lack of adequate guidance, facilities, and materials for girls to manage their menstruation in school is an institutional and social problem. Eventually girl's education is affected which in turn becomes a community problem leading to undesirable outcomes such as high rates of school dropout. Interventions for environmental level influences are addressed by this study to impact the school climate, systems and policies geared towards improved MHM.

The environment in this context refers to aspects of the school or learning space that affect both the physical and psychosocial well-being of students, teachers and other school staff (Moss, et.*al*, 2005). To promote psychosocial well-being, the school should be a place where all are free from fear and exploitation, where codes against misconduct exist and are enforced. For physical well-being, the school should be a place where all individuals are free from danger, disease, physical harm or injury; where sufficient, safe water and sanitation facilities are provided; and where physical structures (buildings, paths and latrines) are sound, welcoming and secure (UNESCO 2014).

The environment forms an essential and important setting in relation to MHM: a lack of appropriate facilities in schools may prohibit schoolgirls from managing their menstruation safely and hygienically or may result in increased absence from school (House, et al. 2012; Sumpter et al. 2013). Education settings such as schools present opportunities to reach schoolgirls to improve their knowledge, attitudes and practices in relation to MHM. Much as research is needed into MHM, its impact on menstruation and MHM practices on girls' health and psycho-social outcomes still present significant knowledge gaps, particularly in relation to school settings. These knowledge gaps are crucial and this study attempts to address some of them to guide future programming in Kiboga district.

Majority of young girls and women teachers in developing countries struggle to find appropriate places and facilities in their school to deal with menses, which may impact their school participation, performance and attendance (Bista, 2004; UNICEF, 2005; Nahar and Ahmed, 2006; Sommer, 2010; Sommer, 2011; Pilliteri, 2012; Kabir et *al*., 2012). UNICEF (2005) estimated that about 10% of school-age African girls do not attend school during menstruation, or drop out at puberty because of the lack of cleanliness and private sanitation facilities in schools. This explains why this study is timely and important to identify challenges and experiences faced by menstruating girls in rural school settings, address them to the district official for appropriate action.

Furthermore, a study undertaken by WaterAid in 2011 in urban school in Malawi revealed that all girls experienced difficulties in dealing with menstruation at schools because of poor toilet conditions (Pilliteri, 2012). In Nepal, WaterAid (2009) reported that many girls often performed poorly in school because they worry that boys would realize their menstruation condition. Similar

findings were reported by a survey carried out by WaterAid in India, in which 28% of girls did not attend school during menstruation due to lack of facilities. In Uganda, FAWE (1999) reported that 1 in 3 girls missed all or part of a school day during their menstrual cycle. For purposes of triangulation from what the menstruating girls have to say, this study includes responses from contemporary school boys for an in-depth understanding of MHM in rural schools.

Studies have shown that girls who attend schools without appropriate water supply and sanitation facilities prefer to remain at home during menstruation (LaFraniere, 2005; Nahar and Ahmed, 2006; WaterAid, 2009). Studies in Uganda, Kenya and Zimbabwe which were conducted between 2009 and 2011 highlight the challenges of physical management of menstruation in low income settings, and in particular the prevalence of overcrowded and overflowing toilet cubicles currently existing in many sub-Saharan African schools (Rockefeller, 2011). In accordance with LaFraniere (2005), over 50% of primary school pupils in Ethiopia lack proper latrines and water supply facilities, which are not only inadequate, but also poorly managed.

In addition, a baseline study conducted by the Netherlands Development Organization, SNV in 4 districts in Southern Ethiopia revealed that, the school environment is not conducive for menstrual hygiene management because 90% of the schools lack water supply, separate toilet for boys and girls and the existing toilets lack privacy (Zinash et.*al*, 2011). More to this, in another study conducted in 16 districts of Tanzania in 2009, it was identified that 52% of all schools had no doors on their latrines, 92% had no functional hand washing facilities and 99% had no soap (SNV/WaterAid/UNICEF, 2011) all of which would make it very difficult for a young girl to easily manage her menstrual period. This clearly predisposes to school absenteeism and school dropout which impacts on girl child's school performance and education in general.

Improvements to WASH access may enable girls to clean reusable absorbents and genitals hygienically, as well as reduce discomfort and embarrassment. Open pit toilets or toilets without disposal facilities mean blood or used sanitary products reveal when a girl is menstruating, resulting in embarrassment and stigma (Mahon and Fernandes 2010). Therefore, inadequate WASH facilities in schools represent a barrier to MHM, particularly the ability to clean absorbents, and the body, in private (Das et *al.*, 2015). With keen interest, this study has school observations as a methodology for assessing WASH facilities in rural primary schools of Kiboga district.

Hygiene guidelines recommend changing absorbents every two to six hours depending on blood flow, thus facilities are needed both at home and in schools to adequately aid girls while managing their menses (House et.*al*, 2012). However, the design of latrines often fails to meet girl's physical and psychological needs (Dolan et *al*., 2013) further compounded by latrines lacking doors or locks which threaten safety and cause embarrassment. It is also important to note that girl's friendly changes such as gender-separate latrines, locks on toilets, discrete facilities for changing absorbents or washing have also been hypothesized to enable improved MHM.

Furthermore, there are health issues with poor MHM. Not changing a pad often and not ensuring the pad is dry before wearing can lead to reproductive and urinary tract infections (Dasgupta 2008) along with uncomfortable chafing (Seymour 2009). Although a lack of knowledge on safe MHM can lead to this, the lack of facilities at schools and the embarrassment of leaving pads to dry on display can leave girls with no choice. Also, the inaccessibility and cost of safe menstrual products cause girls to use whatever materials they have available to them and this can lead to health problems. Using cloths or cotton wool for menstrual hygiene is a risk factor for bacterial vaginosis

(Baisley 2009). The negative effects of poor MHM on health are important as it can further decrease attendance and performance in general.

Improved management and comfort may also reduce associated stigma, ridicule, and embarrassment which deter girls from attending school. In Ghana, Dolan and colleagues (2013) found that over three quarters of schoolgirls surveyed reported soiling outer garments during their last menses, and found that school attendance improved by 9% after 5 months with the provision of disposable sanitary pads (Montgomery 2012). The cost and availability of sanitary products, and underwear for the girls to use during menstruation is a fundamental barrier to MHM (Montgomery 2012) and yet commercial absorbents are frequently unavailable or too expensive (House et.*al*, 2012 and Crofts 2012). The provision of clean, sanitary products (e.g., commercial or home-made pads) addresses this material deprivation and is hypothesized to reduce discomfort, and concerns regarding soiled outer garments.

Contributing to unsupportive social environments at school, boy students report having little understanding about menstruation, and some tease and bully girls because they do not understand girls' behaviors during menstruation (Mahon et.*al*, 2015; and Panakalapati 2013). This evidence has provided insights for some emerging programming and policy actions generally focused on three key MHM elements in school: the provision of MHM guidance, fostering an enabling physical and social school environment, and the distribution of menstrual products (Sommer and Sahin 2013). These indirectly are embedded within the research questions this study is attempting to address.

2.6: Societal Factors Related to MHM

At societal level, the study is reviewing literature on influences of MHM at a macro-level with special focus on school/gender WASH policies, curriculum and teacher training standards. Literature is further reviewed to include culture, norms and beliefs associated with MHM tradition practices. At this level, the study also reveals religious, economic or social policies that create or sustain gaps in MHM in rural schools.

Since this study focuses on how rural school settings impact on menstruating schoolgirls, it is important to consider education as an outcome. The right to education is reflected in the international law in Article 6 of the Universal Declaration of Human Rights and Articles 13 and 14 of the International Covenant on Economic, Social and Cultural Rights which states, "Everyone has the right to education". Education is a fundamental human right and essential for the exercise of all other human rights. It promotes individual freedom and empowerment and yields important development benefits. The Beijing Platform for Action (1995) further states, "Education is a human right and an essential tool for achieving the goals of equality, development and peace. Non-discriminatory education benefits both boys and girls and ultimately contributes to more equal relationships between men and women".

A number of human rights conventions and programs of action provide a rights-based argument for the education sector to ensure quality puberty education and MHM in schools ((UNESCO, 2014). The Convention on the Rights of the Child (CRC), article 28 (Right to education) addresses the right of all children to a primary education, in schools that protect their dignity and which are orderly and well managed (ibid.). Such international rights can be used to demonstrate how

children's rights are not being met when schools do not take steps to improve puberty education and MHM.

In many curricula in majority of the education systems in Low, Middle Income Countries (LMICs), there is emphasis on the reproductive process but not on the practical issues girls need to learn to manage menstruation (Diorio and Munro, 2000). Menstruation is a vital sign of reproductive health, yet the main message is often that it is a 'problem' that must be managed privately, with an implicit suggestion that it is unpleasant and shameful, and should be hidden. This portrayal of female puberty reinforces negative attitudes around menstruation and can have negative psychological repercussions on girls (Robledo and Chrisler, 2013).

Menstrual hygiene management education is another crucial aspect of adolescent development and to be effective it should be age-appropriate and culturally relevant. A recent study by UNESCO (2014) suggested that MHM education should be situated within the framework of broader life development curricula, with sequenced lessons from pre-adolescence to young adulthood. This way, adolescent young girls can take up methods to develop the knowledge, attitudes, values and crucial skills needed to adopt healthy and safe practices as they make the transition to adulthood, and thus prepare themselves for healthy sexual lives.

School aged girls and boys should have access to reproductive health education within formal education programs, focused not only on reproduction's biological and technical aspects, but also on the social and emotional issues. However, in 2010 a report Strengthening Water, Sanitation and Hygiene in Schools highlighted, school curricula at present typically do not cover the topic of menstruation and puberty in a very girl-friendly way, therefore, not helping girls understand the changes in their maturing bodies (Mooijman, et al., 2010). Adolescents particularly need to

explore feelings and relationships as well as feminine and menstrual hygiene, male hygiene, body awareness, the maturation process and changes during puberty.

The subject of menstruation, however, is too often taboo, and has many negative cultural attitudes associated with it, including the idea that menstruating women and girls are "contaminated", "dirty" and "impure". Women and girls in rural setting and in particular girls in schools suffer the 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 (House et al., 2012). For example, 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) (Menstrual Hygiene Matters, 2012).

In Buddhism, menstruation is seen as a natural bodily process and therefore no restrictions apply. However, some Buddhist temples restrict menstruating women from entering, possibly because of the influence of Hinduism. Jewish law forbids any sexual contact between women and men during the days of menstruation and for the following week, after which a woman has to have a ritual bath or 'Mikvah' (Menstrual Hygiene Matters, 2012). There are so many other menstrual restrictions subjected to women and young girls that are not documented, but are compounding on the already existing menstrual challenges young adolescent girls have to face both at home and in school.

In Nepal there are cultural taboos which discourage women from teaching during menstruation (WaterAid, 2009). It is very likely that women teachers elsewhere are frequently absent during menstruation due to the inability of the school infrastructure to meet their health and hygiene needs. Given the unavailability of substitute teachers due to teacher shortages all over the developing world, this means that teachers' instruction time in school is reduced by 10-20% (World Bank,

2005). These are some of the indicators which directly or indirectly contribute to the poor performance of schools in the rural settings because of lack of WASH infrastructures in schools.

The taboos surrounding menstruation exclude women and girls from many aspects of social and cultural life as well as menstrual hygiene services. As a result, women and girls are often denied access to water and sanitation when they need it most, some cultures exclude menstruating girls from engaging in normal domestic activities and isolating them from the rest of the family (Menstrual Hygiene Matters, 2012). Such taboos include not being able to touch animals, water points, or food that others will eat, and exclusion from religious rituals, the family home and sanitation facilities. Such societal norms have caused massive physical and psychological traumatic experiences for menstruating girls especially in rural areas.

This study has categorically stated how menstrual problems are highly reinforced by cultural, religious traditions and local customs. The Old Testament of the Bible indicates that a menstruating woman is impure, and that most things she touches becomes unclean. If a man touches her bed during this period he also becomes unclean and has to take a ritual bath (Plancke, 2016). It is also stated that if a woman and a man have sexual intercourse during menstruation they will be disowned by the community (Agunbiade, 2016). However, today, most Christian denominations do not follow any specific rituals or regulations related to menstruation this is an indication that norms that impact negatively on menstruating girls can be subjected to change.

Adolescent girls' understanding of menstruation is characterized by poor knowledge and erroneous beliefs about how and why menstruation occurs (Jogdand and Yerpude, 2011; Kumar and Srivastava, 2011). According to information from the baseline survey in Tanzania some of the girls were taught not to use disposable sanitary pads as they cause cancers and not to dispose of

the used materials in open spaces as, if seen, they might be used in witchcraft resulting in death or infertility (SNV, Girls in Control; 2014). In the same survey, it is also perceived that if fathers talk with their children about MHM issues, they will die, and it was further revealed that having sex can end the pain associated with menstruation (ibid.).

The literature has revealed the importance of access to quality education which prepares girls for productive lives giving them power and control over their lives, access to economic opportunities, self-confidence and self-esteem, and enables them to realize their social and economic rights. Therefore, investing in water and sanitation in schools is key to ensuring girls stay in school and complete their education. More to this, it has also been revealed by the literature that socio-cultural norms create barriers for adolescent girls to obtain accurate information about menstruation and menstruation hygiene at the on-set of menarche.

In general, this study has reviewed literature from Asia, Africa, and Latin America describing a number of challenges facing women and schoolgirls, including inadequate access to comprehensive information about menstruation, lack of suitable materials to manage menstrual bleeding, inadequate WASH facilities and harmful socio-cultural beliefs and taboos. These have contributed to loss of dignity, behavioral restrictions, and potential reproductive health risks consequently leading to substantial and long term health and socioeconomic implications for school-going adolescent girls.

Various studies have pointed to a connection between menstruation and schoolgirl's educational attainment (World Bank 2005; Sommer 2009; Bender et al. 2012; Mason, et al. 2013). However, majority of these studies rarely mention schoolgirl's MHM experiences as being shaped and determined by their social and physical school environments especially in rural school settings.

Therefore, this study is framed after recognition of these gaps in the literature that connect girl child education and MHM in rural schools, both in terms of software (e.g. life skills training classes) and hardware (e.g. changing rooms).

Currently, there is no research about MHM in Kiboga district, particularly among adolescent girls. Consequently, the contributing factors and impacts of MHM among school-aged adolescent girls are not well understood and an evidence-base for programming and interventions to improve MHM is lacking. To address this knowledge gap, this qualitative study is conducted within rural communities focusing on primary schools in Kiboga district. The aim is to explore current MHM practices, their associated factors and impacts among school-going adolescent girls.

Within the context of menstrual hygiene, it would be interesting to grasp the relationship between improved MHM and girls' education performance, and other psychosocial outcomes. In addition, more research is required to demonstrate an association between poor MHM and reproductive tract infections. More to this, poor MHM is associated with health risks; hence, there is need for additional research to pinpoint to the exact health hazards. More information is also needed to find effective strategies and materials to involve boys and men in MHM as well as on the relationship between school sanitation facilities and their impact on the ability to help girls manage menstrual hygiene.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1: Introduction to the Chapter

This chapter describes the research methodology used in this study. The geographical features of the study area, the study design and the population are described. In addition, the instruments used to collect the data, including approaches used to maintain validity and reliability of the instruments are all described.

3.2: Area of Study

This study was conducted in the rural sub-counties of Kiboga district where the education system performance is known to be poor due to lack of teachers and the high levels of absenteeism from both teachers and school pupils (Kiva, 2010). The district is facing challenges in recruitment of teachers because they shun away from their appointments when stationed in rural schools. Rural settings in this study provide extreme scenarios of what adolescent aged girls experience while managing their menses in remote school settings.

3.3: Study Approach and Design

This study emphasized the need for methodological innovation along the lines of the constructivist research paradigm (Creswell, 2014). The study relied on the participants' viewpoints to understand the multifaceted and interactive effects of personal and environmental factors that determine the management of menstrual hygiene in rural school settings. Interviews have been conducted as a

method of data collection involving interactions, exchanges, and negotiation of meaning between the participants and the researcher together co-creating understandings of MHM in school settings.

The strategic approach of inquiry in this study is narrative, characterized with in-depth unstructured interviews tools. The narrative interviews aimed at encouraging and stimulating schoolgirls to extensively share their experiences and challenges while menstruating in school and further triangulation was done to have the perceptions of the boys, mothers, and school administrators. The real life MHM experiences shared by the participants have been cross examined by the researcher's observation situation context to further generate themes to better understand MHM in rural school settings.

3.4: Study Population

The study population comprises of primary schools in rural settings of Kiboga district. The researcher subjectively identified eight government schools from six rural sub-counties which were selected using a non-probability sampling technique (Purposive sampling) for convenient access to the targeted sample (Creswell, 2014). The study took interest in government schools because under the Ministry of Education, Science, Technology and Sports (MoESTS), the ministry has the constitutional obligations to provide technical support, guide, coordinate, regulate and promote quality education, training and sports to all persons in Uganda for national integration, development and individual advancement.

3.5: Study Units

To acquire an in-depth insight on how MHM is carried out in rural schools, the study considered individual and independent primary schools as study units. The study unit comprises of

respondents and physical infrastructure for elucidation of MHM by school aged girls in Kiboga district.

Table 1: Participating Schools by name, location and population by sex

Name of Primary School (P/S)	Sub-county (S/C)	Number of Girls	Number of Boys	Total school population
Seeta Rural P/S	Kibiga S/C	164	187	351
Kyamakoora P/S	Kapeeka S/C	99	111	210
Mwezi P/S	Bukomero S/C	212	247	459
Muwanga P/S	Muwanga S/C	106	130	236
Nakasozi P/S	Muwanga S/C	265	301	566
Mutooma P/S	DdwaniroS/C	124	109	233
Kigando Mixed P/S	Lwamata S/C	112	137	249
Kisweka Community P/S	Lwamata S/C	46	64	110

3.6: Study Participants

In order to explore the barriers and contributing factors to MHM in rural primary schools of Kiboga across the various levels of the SEM the study approached key participants who responded to a range of data collection methods from different study units. The primary participants were schoolgirls who were purposively selected by the senior women teachers in different schools from classes of primary five or six between the ages of 13-14 years with menstruating experiences. In addition, schoolboys aged 13-14 and parents/guardians from the rural communities were included as study participants for the immediate social interaction they offer to the girls and to triangulate

the findings from the girls. Among the study participants, school administrators/teachers were inclusive as primary implementers of MHM in school settings. Lastly, official from the Directorate of Education were among the respondents for their stewardship role they play in the provision of education services in the district.

3.7: Sample Selection

The study considered purposive selection of participants and study units that best suited the researcher to understand the MHM problem and the research questions. A maximum variation sample strategy was used to ensure credibility of the sample and also to make certain that the main groups of interest are covered by the study. In order to capture a wide range of MHM perspectives in rural schools, the study units where identified and selected from rural sub-counties of Kiboga district, excluding all town councils. The maximum variation sampling strategy provided insight into MHM in rural primary school settings, considering all its aspects from all angles. This enabled the study to identify common themes that were evident across the study units.

3.8: Data Collection Methods and Instruments

Activities were conducted and themes explored as guided by the ecological framework identifying barriers and contributing factors that influence MHM in rural primary schools of Kiboga district. Questions for qualitative data collection were used to investigate and understand a range of personal experiences, challenges and needs girls go through during menstruation in schools. The following data collection methods and tools were used across the five levels of the social ecological model:

3.8.1: In-Depth Interviews

Considering the biological level of the SEM, In-Depth Interviews (IDIs) were conducted with girls in school. The researcher asked girls to discuss their individual personal experiences with menstruation, specifically what they know about menstruation and where they got the information from. They were asked how they manage menstruation in school and at home. In addition, girls were also given a chance to ask about menstruation (Annex 1).

3.8.2: Focus Group Discussions

The researcher conducted 23 Focus Group Discussions (FDGS) with girls, boys and parents within school settings with an average of up to eight participants in each session. Focus group discussions with girls focused on typical experiences girls have at school while menstruating, as well as common practices and beliefs. Focus group discussions with boys and parents were performed to triangulate and expand on findings from the discussions with girls. The FDGs mainly focused on data collection from the personal and interpersonal levels of the ecological framework (Annexes 1, 2, and 3).

3.8.3: Key Informant Interviews

At the environmental level of the ecological model, 9 Key Informant Interviews (KIIs) were conducted with administrators, and senior women teachers in school settings while the District Education Officer (DEO) was interviewed at the district education directorate. Key informant interviews with school staff investigated hygiene, sanitation, menstrual hygiene education and girls' menstruation-related challenges experienced at school (Annex 4).

3.8.4: School Observations

Checklists and tools for observation of school water, sanitation, and hygiene facilities were used to collect data from 8 schools at the environmental level of the ecological model and additional questions were added were appropriate (Annex 5).

3.8.5: Desk Reviews

The researcher carried out secondary data assessments by collecting, organizing, and synthesizing available information on school/gender WASH policies, curriculum and teacher training standards, and reports on MHM from various governmental and non-governmental sectors both at environmental and societal levels of the ecological model.

3.9: Quality Control Methods

This study adopted strategies to guarantee internal validity, and triangulation of data is one of them. This was done by collecting data through multiple sources which included interviews, observations and document analysis. The researcher triangulated findings from the study participants, cross comparing with on-site observations and secondary document reviews to better understand MHM in rural school settings. In addition, regular and repeated observations of similar MHM phenomena and settings was done on-site (school physical infrastructure) for the period of the study. The researcher used this strategy to further triangulate and analyze findings which also guided in the generation of themes for discussion. Furthermore, participants served as checks throughout the data analysis process. There was an ongoing dialogue regarding interpretations of the respondent's reality and meanings to ensure the true value of the data. This was commonly done with the senior women teachers during data analysis as a strategy to guide the generation of

themes for discussion. Lastly, to ensure internal validity, the study was being supervised by a graduate from the Faculty of Health Science (FHS) who served as a peer examiner.

The primary strategy utilized in this study to ensure external validity is the provision of rich, thick, detailed descriptions so that anyone interested in transferability will have a solid framework for comparison (Merriam, 1988). Improving external validity in this study was done using a maximum variation sampling strategy whereby a variety of rural sub-counties were identified and selected. In each sub-county, study units were purposively selected and in each study unit, the participants were randomly selected.

Three techniques to ensure reliability were applied in this study. First, the researcher provided a detailed account of the focus of the study, the researcher's role, the participant's position and basis for selection, and the context from which data was gathered (LeCompte and Goetz, 1984). Secondly, as mentioned earlier, triangulation or multiple methods of data collection and analysis were applied; this furthered strengthened reliability as well as internal validity (Merriam, 1988). Finally, data collection and analysis strategies reported the details in order to provide a clear and accurate picture of the methods used in this study. All phases of this study were subjected to scrutiny by a FHS (UMU) supervisor who is experienced in qualitative research methods.

3.10: Data Management and Processing

For purposes of transparency, as a prerequisite, this study integrated a data management system in its research plan which included all aspects of collecting, handling, organizing, documenting, enhancing and sharing data. The data management system contains the following:

3.10.1: Data

Basing on the research questions and the methods of data collection, the researcher and the research team collected the data themselves. Qualitative data was collected by recording individual interviews, group interviews, sessions or meetings as audio or video files. Review of official documents/reports was done only by request or by obtaining permission to use them for research purposes.

3.10.2: Rights

Regardless of whether data are protected by copyright or not, this study observed protocol for any data usage that requires permission from the copyright owner.

3.10.3: Confidentiality and Data Security

In this study, confidentiality was highly valued through basic planning and careful processing of data. Personal data was only collected and processed to the degree necessary for the research, and unauthorized access to the data is strictly prohibited. Personal identification numbers were used during data collection, with the right to processing of such confidential information left to the researcher only. To ensure data security, the study prevented unauthorized access to data through safe computer systems.

3.11: Qualitative Data Collection and Analysis

Open questions were posed to the groups and interviews were recorded using an audio recorder and later transcribed. Transcripts were analyzed using inductive thematic analysis, a qualitative data analysis method that emphasizes pinpointing, examining and recording patterns (themes)

within data (Braun & Clarke, 2006). Fereday and Muir-Cochrane (2006) described thematic analysis as “a form of pattern recognition within the data, where emerging themes become the categories for analysis" (pp. 3-4). Therefore, the analysis process involved examination of data and identification of themes that are central to the description of MHM in rural primary schools of Kiboga district (Daly, Kellehear, & Gliksman, 1997).

The study adopted an inductive thematic analysis as a basis for search and extraction of general patterns found in the data through multiple readings in order to become familiar with the data, paying specific attention to the patterns that occur. Codes where then generated by identifying where and how patterns occur. This happened by collapsing data into labels in order to create categories for more efficient analysis. The codes where then collated into themes that accurately depicted the data and further reviewed to ensure they made sense and account for all the extracts and the entire data set. Finally, definitions and names for each theme were generated describing aspects of data being captured in each theme.

3.12: Ethical Considerations

Ethical considerations in this study were critical to determine the difference between acceptable and unacceptable behaviors on the part of the researcher. As a precautionary measure, the study considered both general research principles and those that are more specific to this type of study to ensure compliance with appropriate guidelines for issues such as human rights, conformity with the law, conflicts of interest, safety, health standards and so on.

Ethical approval of this study was granted by the Uganda Martyr’s University, Faculty of Health Science with clearance by the Directorate of Education Kiboga district to collect data from schools. The study participants were briefed on the objectives of the study and adequately informed about

the purpose, benefits and how data will be used. All participants were explicitly informed of their rights to participate, discontinue or refuse to participate in the study at any time. In addition, written informed consent was secured from each study participants and their confidentiality, privacy and anonymity was maintained. The schoolgirls and boys interviewed in this study, oral informed assent was obtained from both the school administrators and parents/guardians.

The integrity, reliability and validity of the study findings heavily relied on adherence to ethical principles which primarily were centered on protecting study participants and the guiding foundation of "do no harm". Furthermore, the researcher had the obligation to respect the rights, needs, values, and desires of the participants and this was of particular concern especially where the participant's position and institution are highly visible.

3.13: Limitation of the Study

The selection of study units and respondents was purposive and may not reflect the population distribution of Kiboga district. Therefore, the findings of this study are not representative and should not be generalized; however, the key issues identified from the respondents are incredibly valuable for menstrual hygiene management of schoolgirls. Furthermore, constraints of resources did not permit this study to follow up on girls who may have dropped out from school due to menstrual related issues, the researcher only committed to menstruating girls in school settings. More to this, the study was unable to calculate school dropout and enrolment rates for individual schools due to missing data from the District Education department at the time of document review.

CHAPTER FOUR

PRESENTATION, INTERPRETATION AND ANALYSIS OF FINDINGS

4.1: Introduction to Chapter

This chapter presents, interprets, and analyses the study findings in relation to the research questions that guided the study. The findings are further analyzed using themes to describe, understand, and explore MHM practices in rural primary schools, there contributing factors and impact on the health and education of adolescent schoolgirls. The findings also explain the social and environmental contexts within which the study is situated and highlighting experiences and barriers girls face at school while menstruating, as described by the girls themselves and other participants. Quotations from the research discussions appear throughout the findings section as complements to the main text. In all cases, participants' names have been withheld to preserve their anonymity.

The participants in this study were selected conveniently by the researcher and also from those who volunteered themselves to participate in the interviews. A total of 42 interviews were conducted from 6 rural sub-counties of Kiboga district with 192 participants. Individual and focus group discussions were conducted among the girls and boys in the age range of 13 to 14 in the classes of primary 5 and 6 in the rural schools. While senior women teachers and parents from nearby communities and have children attending school responded to KIIs and FDGs respectively.

Table 2: Number of participants and data collection activities completed

Tool	Population	Number of data collection activities completed	Number of participants
Focus group discussions	Girls	8	69
	Boys	8	56
	Parents	6	42
	Senior Woman Teachers	1	5
In-depth interviews	Girls	3	3
Key informant interviews	Head Teachers	2	2
	Senior Women Teachers	6	6
	District Education Officer	Several visits were done	1
Observations	Schools	8	8
Total		**42**	**192**

4.2: Methods of Interpretation and Analysis of Data

The researcher has analyzed interviews using thematic analysis and manual coding (Guest, et al. 2011). Themes have been developed and examined basing on commonality, differences, and relationships. Using concepts and data generated, codes have been developed and reviewed to identify trends, and sub-codes were created to reflect the detail of girls' experiences and other participant's perspectives. Therefore, sub-codes have been reviewed and organized into themes that describe girls' menstrual hygiene management practices in schools.

4.3: Discussion of Findings

This section categorizes and presents findings basing on the 3 main themes of analysis and these are barriers to MHM, their contributing factors as well as the overall impacts and risks on girls' health and education.

4.3.1: Barriers to MHM at School

Attending school was found to be challenging for girls especially when they are unable to manage their menstrual hygiene effectively. During the discussions, the girls shared their lived experiences mentioning key barriers to managing their menses while at school, a period that has been considered to be more difficult than other days at school. This study has identified and thematically categorized barriers to MHM at school as hindrances to girl child's school attendance and contributing significantly to school absenteeism. These barriers have been identified through in-depth discussions with the study participants: Girls were asked to share their experiences in general while at school, during their periods and how days at school during menstruation might be different than other days. Other participants were asked about their perceptions of girls' experiences at school during menstruation. The following are the various MHM barriers that have been identified during the discussions with the participants after a thematic and content analysis of the data;

Table 1 Summary of Barriers to MHM in Rural Primary School settings of Kiboga District

Theme	Subtheme	Key emerging issues
Barriers to MHM	• Fear, shame and teasing	• Challenges of keeping menstrual status hidden • Fear for leaks and stains • Provoked and disgraced as a result of menstrual status • Menstrual accidents resulting into embarrassments • Fear of dropping menstrual cloth
	• Menstrual pain	• Difficulties to manage menstrual pains at school • School lack private changing rooms • Girls believe menstruation is a disease • Pain full periods affect concentration in class
	• Girls menstrual behaviors	• Open discussion about menstruation manifested as a taboo • Behavior change resulted into self-exclusion and isolation • Reduced participation in class and distraction
	• Girl's menarche	• Limited knowledge on handling changes of puberty especially menstruation • Lack of support during menarche • Menstruation was immensely associated with traditional cultural ceremonies • Management of menstrual cycles in secrecy
	• Lack of preparedness	• Girls always unprepared for menses whether at menarche or regular menses • Lack of absorbed materials • Girls react to their menses as they arrive
	• Inability to effectively manage menstrual flow	• Girls are uncomfortable asking teachers for assistance • Uncomfortable to use the school WASH facilities • Schools lack sanitary suppliers • Missing class every month • Use of cotton clothes due to lack of funds for sanitary pads
	• Culture and beliefs	• Menstruation is reinforced by cultural and local customs • Disposable sanitary pads were associated to cause cancer • Poor disposed of menstrual materials was associated with infertility

• Source of menstrual information	• Mother and senior women teachers are the main source of menstrual information • Menstrual hygiene management is not included on the school curriculum • Senior women teachers lack formal training on MHM • Fathers are forbidden to discuss menstrual issues with their daughters
• Access to preferred absorbent materials	• Girls strategically reserved sanitary pads for heavier menstrual flow • Old clothing used for menstrual materials were known to cause discomfort • Sanitary pads were found to be expensive for many girls to purchase

Fear, Shame and Teasing

The most prominent challenges girls face at school were revealed to be fear, shame and teasing, which were linked to keeping menstrual status hidden. In addition, leaks and stains, odor, lack of preparedness for menses, inability to manage menstrual hygiene effectively, lack of understanding of menstruation, discomfort about seeking guidance, and menstrual headaches or cramps all these intensify girls' fears. These are the barriers impacting on the way girls manage their menses at school and their overall personal hygiene. Schoolgirls further expressed constant feelings of fear and shame during menstruation, which manifested in specific behavior changes in the classroom and during interactions with others.

Girls narrated a great deal about being provoked or disgraced as a result of their menstrual status becoming known. In class, many of them adapt their behavior to avoid being embarrassed in public and so boys or others will not know they are menstruating. Girls expressed the feel of discomfort when requested to go up front to the blackboard in the classroom and more so girls avoid active play during menstruation.

> *"In my periods, I prefer staying in class during play time, I fear staining my uniform with blood and the boys are so rough and stubborn, they might laugh at me". (Primary five girl, FGD, Nakasozi P/S)*

Girls expressed constant fear and shame in anticipation of bloodstain, odors or classmate realizing they are in their menstrual periods. These were found to result into humiliation, laughing and teasing from classmates. Having a stain, emitting an odor or having a menstrual cloth fall from underpants were mainly a result of lacking access to effective sanitary materials, the lack of privacy or space to change materials, or lack of access to water for bathing.

Furthermore, head teachers and senior woman teachers interviewed reported that girls missed school during menstruation to avoid the shame and embarrassment of menstrual accidents, whether this is due to menstrual blood leaking and staining their uniform or a menstrual cloth falling out. A senior woman teacher said that female teachers also sometimes miss school for menstrual-related reasons, for example when their menstrual materials do not absorb the blood sufficiently. Girls' fear of dropping their menstrual cloth if they are beaten at school was a further reason reported for menstrual-related absenteeism.

Menstrual Pains

While girls discussed countless challenges at school, almost all of them indicated that pain is the most difficult to manage. Stomach and back pain were the most common type discussed, although some girls mentioned pain in their hips and breasts. Pain was often discussed as a challenge during classes because it distracts girls from their lessons.

> *"During my menstrual periods while in class I often feel a lot of pain in my low back and it makes me very uncomfortable and weak. As a result, I feel tired and sleepy wanting to go home and rest". (Primary six girl, IDI, Seeta Rural P/S)*

Girls mentioned that, painful periods resulted into feelings of being unwell at school. This is further aggravated by the fact that schools lack special rooms for sick pupils as pointed out by the girls and senior women teachers during the interviews. In addition, girls expressed their concerns in relation to unavailability of analgesic drugs at school to help them manage their menses which prompts them to escape from school without permission or preference to remain home alone for the duration of their menstrual periods.

Some girls perceived menstruation to be a disease since it is associated with pain of the stomach and the back and the general feeling of being fatigued. Furthermore, the respondents reported that

concentration during class hours, interpersonal relationships with friends and family, and daily school and domestic activities like digging, were affected due to painful menstruation.

Girls' Menstrual Behaviors

The taboo nature of menstruation clearly manifested itself as the girls struggled to discuss the topic of menstruation. Their nervous laughs, avoidance of eye contact, and the fact that they often turned their faces towards the floor when speaking drew attention to the fact that menstruation is a shameful and embarrassing experience and topic of conversation, even in a private, confidential, female-only environment.

The findings revealed the overall objective of menstruating girls in school was to keep their menses hidden from others. It was noted that girls who lack menstrual materials, or do not have adequate bathrooms or cannot bath, they cope by altering their behavior in an attempt to manage menstruation at school and prevent others from noticing. Such behaviors were observed by the teachers to eventually translate into self-exclusion and isolation of the girls, reducing their participation in class, and causing distraction.

Mothers described the typical personality of girls in their community, stating:

> *"When they are healthy they are daring, they are playing. They are the ones punching boys, they are the ones tugging at them, they are doing everything…but when they are with their menstruation they are seated, like startled" (Mothers, FGD, Kambugu s/c).*

Girls' Menarche

The findings indicate that girls have knowledge about puberty in general; they know the stages of body change but have limited know-how on handling the changes including menstruation. This reveals that majority of the girls did not know about menstruation before it started. During focus

group discussions schoolgirls shared that they were not told anything specific about menstruation, especially the physiological aspects; where the menstrual flow comes from and how to manage it until their first personal experience of it. They reported the onset of menarche as a shocking or fearful event.

> *"When I saw the menstrual blood for the first time, I thought that am no longer a virgin and I was scared. Nobody had shared any information with me". (Primary six girl, FGD, Kigando Mixed P/S)*

When sharing their experiences regarding the first time they menstruated, girls repeatedly indicated feeling bad when they got their period because they did not know what it was. Many girls said they did not know what was happening to them at menarche. Many were afraid of the blood and thought they had a wound. Some thought that they would get in trouble or that they were pregnant. Fear related to a lack of understanding was often discussed as a barrier to girls seeking support.

There were immense variations among participants regarding their experience the first time they had their menstrual cycles. Some girls were able to ask an elder family member for assistance, some participated in a traditional ceremony, while others hid and did not tell anyone. Traditions and ceremonies ranged from being provided with traditional herbs, bathing with herbs, and being kept in the house for a specified time with elders. One interviewee described how she was "taken to the bush" for one day and taught how to "keep herself," and then she was kept in the house for one week. Another girl was taught that she was "coming of age" by her sister-in-law, and she was provided traditional medicines to take and to bathe and told not to "play with boys". The fears experienced by the girls while undergoing menarche without any prior knowledge, support, or supplies forces girls to manage their menstrual cycles in secrecy.

Lack of Preparedness

Girls consistently narrated not being ready for their period, whether at menarche or when having regular menses. At menarche, lack of preparedness was related to both a lack of understanding and not having absorbent materials. Even when menstruating regularly, very few girls reported bringing materials to school with them in anticipation of their periods. Rather, many girls would react to their menses as it arrived, a difficult strategy for menstrual hygiene management because most girls did not bring pads to school, and schools did not provide pads. Girls reported asking friends, teachers or women who lived close to the school for help, or simply going home to manage the onset of menses.

> *"At times they [periods] come fast, while attending school and it will just happen to you and there is no one tell about what is happening." (Primary six girl, IDI, Mwezi P/S)*

Inability to Effectively Engage Menstrual Flow

Schoolgirls described many challenges faced in managing their menstrual cycles, especially at school. Some of the challenges included a code of silence that did not allow them to feel comfortable asking teachers for assistance, especially in the company of school boys. Schoolgirls described not feeling comfortable using toilet facilities and not having sanitary supplies to use throughout the school day. They revealed a lack of soap, clean toilets, clean water, privacy, and sanitary supplies as some of the challenges at school.

> *"We need help with supplies at school because it's embarrassing in front of boys. Usually girls just go home with no supplies." (Primary six and five girls, FGDs, Seeta Rural P/S)*

Often, girls tell their friends to tell the teacher "my friend is sick" and then they are sent home or they remain quiet and sit in class until everyone has left, hence, enduring painful menstruation cramps.

Being uncomfortable at school caused some girls to miss class every month. As described by one young girl, *"[I miss] one or two days when it's heavy, usually the first day."* She discussed missing her schoolwork, *"In other subjects besides math you can copy notes, but with math, you just fall behind."* When asked about their classmates, schoolgirls said, *"They don't come to school. They fear that maybe boys will laugh at them when they make their uniform, dirty so they just remain at home."*

At home, schoolgirls seemed to feel more comfortable using the toilet facilities as opposed to toilets at school that are unclean and lack privacy. Furthermore, girls discussed the challenges of using cloths due to a lack of funds for sanitary pads. Majority of them revealed following traditions and not playing with boys, but they did continue with other household tasks. Many girls did not know how their classmates handled their menstrual cycles at school because it was not something that was openly discussed, but they did share some of the same concerns of privacy, cleanliness, and access to supplies.

Culture and Beliefs

The findings reveal menstruation as a problem reinforced by cultural and local customs. Basing on information gathered from the interviews with the girls, boy and parents from the rural schools and surrounding communities, some girls are being taught not to use disposable sanitary pads because they are perceived to cause cancers. In addition, participants believe disposing of used menstrual materials in open spaces if seen, might be used in witchcraft resulting in death or infertility. It is also perceived that if fathers talk with their daughters about MHM issues, they will die.

> *"Menstrual materials cannot be burnt because it causes infertility when you grow up."*
> *(Primary six girl, IDI, Kisweka community P/S)*

Source of Menstrual Information

In all schools visited, the girls interviewed agreed that mothers are their source of information, followed by senior women teachers at school respectively. The findings indicate that schools do not provide specific and sufficient lessons on menstruation and menstrual hygiene. The subject of menstrual hygiene management is not even included on the school curriculum. The senior women teachers also revealed that, they have not received any formal training on MHM even as teachers during their career development. They admit receiving some kind of awareness on MHM especially on how to make sanitary pads using local materials given by non-governmental organizations such as World Vision and Child Fund.

> *"There [are] pads of two types here, those for buying and those that they taught us here at school to sew with materials." (Girls, FGD, Kigando Mixed P/S)*

This study has revealed earlier that menstruation is a secret and shameful subject to be discussed anyhow. More to this, focus group discussions with senior woman teachers and mothers also revealed that it is forbidden to discuss menstrual issues with their husbands. Mothers further disclosed that during their menstrual cycles they and their husbands sleep separately. In some instances, it is only grandmothers or aunts who are allowed to discuss menstrual issues with girls, although the reason behind this custom was not known to the FGD participants.

> *"Grandmother taught me everything, when chatting in the evening before supper, she tells stories about monthly periods, when you become mature, as a woman, you need to do this." (Primary six girl, IDI, Kyamakoora P/S)*

Access to Preferred Absorbent Materials

Girls considered sanitary pads to be ideal for managing menstruation because pads are more effective than cloths to capture flow and more stable (less likely to fall out). Girls strategically reserved sanitary pads for their days of heavier menstrual flow, and they often went for long

periods of time without changing sanitary pads to conserve the number of pads they used per menstrual cycle.

> *"During my periods I use pads but I heard other people say that they use old pieces of blanket materials." (Primary five girl, IDI, Mwezi P/S)*

Discomfort was a key concern for girls using traditional items. Girls described the discomfort as 'irritating', 'bruising', 'hot', 'sore', and causing 'pain'. Parents reported that they observe their daughters suffer placing folded pieces of cloth or old clothing, in their underwear to manage menstrual flow. Although these clothes are convenient because they can be made from anything, they do not prevent leaks as well as sanitary pads. As a result, girls restrict their movements when they use such materials for fear of it falling from their underwear.

Girls, mothers and teachers explained that sanitary pads are not available on the school grounds, and are often too expensive for many girls to purchase. Although sanitary pads are available at most community stores, the cost is a barrier to use. Girls requested that canteens sell sanitary pads at school.

Senior women teachers also reported that male head teachers rarely allocate sufficient funding for resources and facilities to help girls to manage their menstrual hygiene because they are not aware and/or not interested in girls' menstrual needs. This is sometimes influenced by views in the wider community. One senior woman teacher reported an occasion when a head teacher had wanted to purchase sanitary products for schoolgirls but had been prevented from doing so as the local community did not think this was a suitable way for school money to be spent.

4.3.2: Contributing Factors of MHM in School Settings

Contributing factors are the major propagators of MHM barriers in both the physical and psychosocial school and home environment. The barriers girls face while managing menstruation at school are contributed primarily by the inadequate menstruation education that led to a lack of information and negative attitudes at home and in school. Secondly, poor qualities of school WASH facilities were identified by the study to contribute to barriers of MHM in schools. Lastly, the availability and the disposal of absorbent menstrual material was another determining factor that was identified to significantly contribute to poor MHM in rural primary school settings.

Table 2 Summary of Contributing Factors to MHM in Rural Primary School settings of Kiboga District

Theme	Subtheme	Key emerging issues
contributing factors to MHM	• Inadequate knowledge and attitudes	• Inadequate knowledge about puberty, menstruation and reproductive health • Menstrual information acquired by the girls from home was colored by traditional beliefs • Menstrual information provided at schools was inconsistent
	• School WASH facilities	• Majority of the school WASH facilities are not girl friendly • Some schools, toilets are not gender segregated. • WASH facilities lack privacy • Toilets lack hand washing facilities
	• Absorbent materials for MHM	• School lack emergency menstrual absorbent materials • Majority of the girls preferred not to change their menstrual pads at school

Inadequate Knowledge and Attitudes

Despite the great importance that menarche represents in the life of a young girl, the findings revealed many girls and boys are in the dark about puberty, menstruation and reproductive health. Education on these crucial topics was lacking, hence no guidance on how girls and boys transition through their physical, social and emotional development during adolescence which affects their decision making in regards to their health.

During the narratives, girls frequently asked common questions ranging from, why do women menstruate, and whether there any cases of death due menstruation to questions such as; why does menstruation occur in women only and how do women get pregnant? These questions are pointers to significant knowledge gaps regarding menstruation and reproductive health. Though girls knew of menstruation, the information from home was colored by traditional beliefs and the one provided in schools was inconsistent.

Majority of girls who participated in the discussions had heard about menstruation before menarche either from their mothers, aunties, or older sisters. Although they had heard about menstruation, some of them felt unprepared for menarche. One of the girls shared:

> *"Some of my classmates told me that they had gotten their period, and when it happened they did not know what to do, they thought that they had an illness. When my sister got it, I heard my mother tell her that it was her menstruation. When I heard this I got scared. I was so surprised to learn that women menstruate." (Primary six girl, IDI, Kisweka Community P/S)*

Mothers and girls were all in agreement that the most difficult time for a woman was during her menses. For this reason, mothers emphasized the importance of avoiding boys and deter from having sexual intercourse during menses, as this could result in pregnancy or infection. Girls and mothers frequently used the term "dangerous days," mostly to refer to pregnancy risk.

In general, boys admitted that they did not know much about menstruation. They affirmed that they knew when girls were menstruating because they were unusually quiet, only conversed with other girls, went to the bathroom frequently, had headaches, and one boy said; *"when girls are menstruating they smell like eggs".*

Furthermore, the interview with boys revealed that they had limited knowledge of the science of the female reproductive cycle, suggesting that they also may not understand the concept of virginity. Boys connected menstruation with sexuality, however, did not understand how the menstrual cycle related to fertility. Many boys said that a girl's most fertile days were during her period. Other boys thought that if a girl was menstruating, it meant that she was going to have a baby or she has just had painful sex with a boy.

Teachers did not have any formal training, nor did they have materials, to address puberty or menstruation in school. They were unaware of the puberty education components in the primary school curriculum in any subject. In one school, the senior woman teacher reported that parents did not want their children to learn about sexuality, believing this could foster curiosity and experimentation.

One senior woman teacher, a science teacher stated bluntly:

> "*I have been at this school for three years but have never taught a formal class on menstruation." (Senior woman teacher KII, Mutooma P/S)*

A female Head Teacher also commented:

> *"I have never spoken to my students about menstruation and I teach all the class streams here, with the exception of my own daughter who is 13 years old." (Head Teacher, KII, Mwezi P/S)*

School WASH Facilities

To further complicate the situation for menstruating girls, none of the schools had fully functioning "girl-friendly" well maintained sanitary facilities. Although all of the schools did have toilets, only a few schools did not have them gender segregated. Majority of the schools were observed to have an extremely high ratio of latrine stances in relation to the school pupils which compromises hygiene.

Teachers, girls and mothers narrated that there was no privacy in the toilet facilities at school because there were no locks, and the boys used the same facility blocks. During interviews with girls, they stated that the toilets were in poor condition, poorly maintained, smelled, were dirty, and there was no soap or water available. Girls stated that they did not like to use the school toilets, and usually went home any time they needed to go, particularly during their menstrual period. In one school, the girls used the bathrooms at the local health post, near to the school. When girls had to use the school toilet, they preferred to go with a friend to keep watch. At schools where the teachers had a locked bathroom, girls asked to borrow the key to use the teachers' bathroom.

> *"When you start your periods and you have started from home, then you to start to think what about school? Then you just stay at home because of period." (Primary six girl, IDI, Kyamakoora P/S)*

Although some schools had hand-washing stations, none of them had flowing water at the time of the visit. Majority of the schools had water harvesting systems installed by the district local government and others were supported by organizations like World Vision and Child Fund. However, this water was only seasonal, during the long dry spells it is difficult to acquire water at school. It was observed that none of the hand washing stations was located next to the toilet, so there was no private place for washing. At the question: "What is the most difficult thing for a girl who gets her period in school", several girls mentioned the lack of water and soap for washing.

Absorbent Materials for MHM

Although none of the schools visited had absorbent materials available, the girls did have access to pads and cloth at home. Some girls reported using commercial sanitary pads because they were more absorbent than cloth. It was also noted that sanitary pads were available in some of the communities at local shops. Two girls who participated in the IDIs said that they always have one or two sanitary pads in their school bags just in case there was an emergency. Some mothers also spoke openly about buying commercial pads and teaching their daughters how to use them, including how to wash themselves and change the pads at least four times a day.

Although both girls and mothers talked about using cloth, there was a concern about getting an infection if the cloth was not clean. In one school, girls mentioned that they used both cloth and commercial sanitary pads, but had to be careful with the cloth because it had to be washed with laundry soap and ironed.

Girls struggle to safely and privately dispose of used sanitary materials in school. Some girls accidentally end up throwing pads besides the pit hole or on the floor of the latrine stance, trying to hide them among the toilet papers.

> *"They leave the used pads on the floor just like that; there is no privacy, because the boys see them too". (FGD, Mothers, Nakasozi P/S)*

Others do not change at school and try to make one pad last until they can go home to change.

4.3.3: Impacts and Risks of MHM on Education and Health

Research participants frequently discussed negative effects on education and health as a result of challenges experienced by girls while menstruating. This has prompted the study to generate and

analyze themes on impacts and risks experienced by girls due to menstruation challenges. Impacts are the known and concrete outcomes that girls and other participants discussed occurring as a result of menstruation challenges. Risks are outcomes that participants suspect may be related to menstruation-related challenges, or that have been deduced from the data, but not directly stated by participants.

Table 3 Summary of MHM Impacts on Education and Health in Kiboga District

Theme	Subtheme	Key emerging issues
Impacts of MHM on education and health	• Absenteeism	• It is common for girls to stay home or go back home from school if WASH facilities are inadequa
	• Reduced participation	• Girls exclude themselves from participating in class and school activities • Boys and teachers are able to notice when a girl is in her periods
	• Impaired concentration	• Physical pain experienced during menstruation affects ability to concentrate
	• Self-exclusion from peers	• Girls with draw from social interactions at school which negatively affects their social health

Table 4 Summary of MHM Potential Risks on Education and Health in Kiboga District

Theme	Subtheme	Key emerging issues
Potential risks of MHM on education and health	• School dropout	• The trainer's experience of monarch and unplanned pregnancies are disposed to school dropout
	• Compromised education advancement	• MHM may lead to missed educational opportunities to excel or advances
	• Un planned pregnancy	• Lack of menstrual education and late timing of reproductive health education in school contributes to un planned pregnancy

4.3.3.1: Impacts of MHM

Absenteeism

It was common for girls to stay home on the first day of their period, and to go home to change if the sanitary facilities at school were inadequate throughout their menstrual cycle.

> *"Often they prefer to just go home. They ask for permission with fear and shame, 'please can I go home?' but they don't want to tell me. I try to persuade the girls to share their real problem so that we can come to a solution". (Senior woman teacher, KII, Kyamakoora P/S)*

Many girls mentioned that when they come to school unprepared for menstrual management, they will leave to clean themselves and get a pad or cloth. Although many girls do return to class, others do not. Some girls discussed missing school for a full day, while others insisted that they are in school to learn and would not skip school during menstruation. The extent of class time missed, whether a full or partial day, could be further explored in future research.

Girls' Reduced Participation

Girls tended to exclude themselves from participation in class, that is, girls avoided standing up to answer questions or going to the blackboard and prefer sitting in the back of the class. When girls have their period at school, they described themselves as being moody, quiet and reluctant to take part in class activities so as to not attract attention. They mentioned not feeling well and suffering from cramps, which contributed to their lack of participation. Most girls said they avoided the physical activities at school when they were having their period for fear that the increased movement will cause increased blood flow and result in a bloodstain.

Though girls purposefully altered behavior to hide their menstrual period, boys and teachers always notice the difference. Teachers noted that girls were distracted in class and participated less. One teacher commented:

> *"The girls are more fearful, for example when they are sitting down they dread having to stand up. They are very careful and prefer just to sit and not walk around or play but rather stay in the classroom at recess." (Senior woman teacher, KII, Kigando Mixed P/S)*

The boys assume the distraction is because the girls are thinking about their periods. They notice when girls are menstruating they do not want to be with boys, but prefer to be surrounded by fellow girl.

Girls' Impaired Concentration

All participants reported that girls cannot focus due to headaches, menstrual pain and feeling unwell. When girls have cramps, headaches, weakness or dizziness, they often withdraw from class. Girls reported that physical pain experienced during menstruation affects their ability to concentrate. While girls are preoccupied in class thinking and worrying about being teased for menstruation-related odors and stains they have difficulties in following class lessons.

> *"When you start to have painful breasts, maybe a headache, or stomach pains, you know you are getting your period." (Primary six girl, IDI, Kisweka community P/S)*

Self-Exclusion from Peers

Girls repeatedly discussed isolating themselves from their peers while menstruating. Several girls discussed fear of a shaming themselves in front of their friends due to personal odor associated with menstruation. Girls also reported withdrawing from social interactions at school during menses, avoiding male students and interacting only with trusted friends. Girls indicated they even disliked recess, a time intended to allow for release and social contact. Self-isolation served as a

coping mechanism to avoid embarrassment and shame from teasing, but it also negatively affects girls' social health.

> *"I do not want to be touched by boys. I am afraid that I will be pregnant if they do it to me [touch me]." (Primary six girl, IDI, Seeta P/S)*

4.3.3.2: Potential Risks of MHM

School Dropout

Teachers suggested that school dropout is a possible outcome from the trauma of experiencing menarche at school or due to unplanned pregnancy:

> *"When a girl has an accident, teachers have to explain it to her and make her feel better so she doesn't reject education…sometimes when this happens…she leaves school and doesn't ever come back". (Senior woman teacher, KII, Muwanga P/S)*

Teachers believed that many girls also dropped out of school for lack of economic means. They also noted that a family's economic constraints can affect a girl's ability to buy sanitary pads, which girls prefer to use when in school.

Learning and Concentration Challenges

Menstrual hygiene still affects learning and concentration of pupils. Such challenges include, absenteeism, distraction in class, inability to concentrate and reduced participation. If students are unable to learn during class time as intended, educational performance and learning outcomes may be hindered, leading to missed educational opportunities to excel or advance. Further research should investigate the compounded effects of MHM impacts over time to the next class or onto secondary school.

> *"When the teacher is teaching she will not concentrate, she will be thinking that when she spoils her uniform and friends will laugh at her, so she is not all that free…" (Primary six boy, FGD, Nakasozi P/S)*

Misconceptions on Fertility Cycles

Many girls asked questions about menstruation and pregnancy. Girls frequently did not understand the link between menstruation and their fertility cycle. When asked about what restrictions they may have when they began menstruating, several girls said that they were cautioned by their mothers not to go near boys when they were menstruating because they might get pregnant. Participants believed girls were at high risk for unplanned pregnancy. It was clear from conversations with girls and boys that many adolescents were sexually active at a young age. The lack of menstruation education and the late timing of reproductive health education in school may contribute to unplanned pregnancy among schoolgirls.

4.4: The Gaps in the Current MHM Practices in Schools

In this section the researcher is shedding more light on significant MHM issues that have emerged during the analysis of the study findings. They have been identified as key findings which have been synthesized to highlight current MHM practices in the rural schools of Kiboga district. The gaps in these MHM practices have been elicited and possible risks and impacts on girl child's health and education have been divulged. The following are the summaries of the most outstanding current MHM practices that have been identified by the researcher.

The study established the existence of school management committees and Parents Teachers Associations (PTA) in all schools visited. These committees and associations are composed of teachers, parents, support staff and opinion leaders with an overall objective of overseeing school management and representing parents and local community interests in schools. Such committees and associations form both the intermediate and environmental levels of the ecological model which encapsulate the biological and personal factors affecting schoolgirls' MHM. However, the

study reveals MHM is not included in the school plans and budgets, a clear indication that school management committees do not prioritize this critical aspect of school WASH systems. School management committees are empowered with authority to take on key decisions in school management however MHM is not included on their agendas. Their roles and responsibilities lack aspects of safe and supportive environment for MHM required in school settings. This is further evidently observed with the inadequacy of WASH facilities in schools that create unsupportive environments that force girls to absent themselves from school and attend to their menses anywhere outside school. As revealed by the literature, absenteeism from home and school is known for predispose girls to transactional sex to obtain sanitary items which could easily impact on a girl child health and education with repercussions of acquiring unintended pregnancies or HIV/AIDS.

Observations together with the narratives from the school administrators clearly indicated gaps in the school health programs. Health programs in schools are meant to foster regulations, standards, resolutions, and guidelines to good student health of which MHM should be incorporated. The study reveals such programs are non-existence hence schools lack foundations in which to anchor MHM practices and procedures creating a vacuum that lacks information, support and direction for menstruating girls throughout the school system. This explains the poor hygiene of the WASH systems observed in all schools visited that are not conducive for menstruating schoolgirls. In addition, some schools were found to be in close proximity with health facilities which is an advantage for health workers to enhance school health programs. However, the study did not find any formal or informal established working relationship among these health and education institutions. This continuously presents missed opportunities for schoolgirls to directly interface with the health system in a school setting.

With the exception of the Menstrual Hygiene Management Charter of Uganda 2015 which aim at promoting the rights of girls and women during and after their menstrual cycles, schools and teachers lack policy guidelines on how to proceed with MHM in school settings. Schools and teachers were found ill-equipped to provide information and advice about MHM because of lack of knowledge, training and provisions to MHM teaching materials; neither did they have appropriate infrastructures. The problem is further aggravated by resolution of Parliament of Uganda putting an open ban on dissemination of comprehensive sexuality education in school where MHM should be entailed. Consequently, this has jeopardized the realization of the right to education and access to information by adolescent school aged girls that is vital for their transition to adulthood as it equips them with knowledge, skills and values to make responsible choices and to avoid sexual reproductive ill health.

Much as the narratives reveal mothers are the primary source of menstrual hygiene management information, the study also reveals that they do not engage with their daughters for practical menstrual guidance. Girls have to be sent away from home to visit distant family members especially grandmothers and aunties (Ssengas) who are meant to prepare them and initiate them into womanhood by taking them through some traditional ritual practices. On further triangulation, mothers where identified to have insufficient knowledge gaps to comprehensively provide accurate menstrual and MHM information to their daughters. This implies unsynchronized MHM information both at home (informal) and school (formal) presenting mixed messages which may easily confuse menstruating adolescent school aged girls. This presents implications for individual girls to decide whether to manage her menses from home or school.

In addition, parents in the rural settings were found to believe that since Universal Primary Education (UPE) is free and meant to cater for their children wellbeing in all aspects, hence they

have shifted the burden of MHM responsibility to the school authorities. Whereas UPE is intended to provide for, support, guide, coordinate, regulate and promote quality education to all persons in Uganda for national integration, individual and national development, however, there still exist some grey areas when it comes to MHM in schools. Much as schools were found to lack water reservoirs and changing rooms, parents were very hopeful for the government through the UPE establishments to come to their rescue for the provision of sanitary towels, pain killers, wrappers, as well as extra uniforms and knickers. Both parents and school administrators were found to blame government for failing to meet the expected WASH standards in school hence the poor MHM.

Some schools were found to be supported by Civil Society Organizations (CSOs) such as World Vision and Child Fund that are committed to helping girls receive an education so that they can make a difference in their communities. These CSOs have empowered both schoolgirls and teachers with skills to make their own washable, reusable sanitary pads as a strategy to overcome the burdens of costs and inaccessible commercial pads. However, school administrators revealed they could not sustain the sanitary pad making processes because of their costly raw materials that are required. On triangulation with the parents, some expressed interest in supporting their daughters in making their own pads and other implied not have funds and unable to offer any support. As mentioned earlier, the rural communities have so much faith for the Universal Primary Education (UPE) program that is government aided to fulfill all the necessary requirements for their school going children this includes matters relating to menstrual hygiene management in school settings.

Furthermore, narrative from the mother were expressing fear for their daughters to be impregnated by the boys and their messages for menstruating girls was explicitly emphasizing that they should

keep away from the boys. Their messages are much more skewed to prevention of unintended pregnancies which is a common problem among teenage school going girls in rural communities. However, issues of menstrual hygiene and its management were not being addressed by the mothers, leaving girls without any practical guidance and financial support that is required from immediate family. More to this, much as they had fear for their daughters to get unintended pregnancies, mother where not raising concern for possible contraction of HIV/AIDS by their daughters. This is a clear indication of knowledge gaps that impedes on girls' health and education, affecting their self-confidence and personal development especially on matters relating to MHM.

Exploring boy's perceptions revealed limited knowledge about actual processes the girls are going through while menstruating. The boy's feelings about menstruation were found to be driven by unimaginative beliefs and lack of knowledge about menstruation. This explains the fact that menstruation is rarely discussed freely within the male presence hence increasing negative expressions among the boys which consequently affects girls emotionally. Girls' physical and social environment during menstrual management at school is threatened by the boys which is why girls prefer to absent themselves from school and manage their menses from home. Interestingly, boys were more than willing to help girls during their menses especially when they showed signs of pain; however, girls were unwilling to accept assistance from the boys in preference to concealing their menstrual status given the sensitivity of MHM.

CHAPTER FIVE

DISCUSSION, CONCLUSIONS AND RECOMMENDATION

5.1: Introduction to Chapter

This chapter concludes interpretations and discussions of the summaries of the current MHM practices and pointing out the gaps in them, and their implications for policy and practice. This is followed by a general conclusion based on the current MHM practices in rural schools of Kiboga district as presented in this study. Furthermore, the strengths and limitations of this study are considered and suggestions for further research into MHM are presented. Finally, this chapter is concluded by drawing recommendations from a synthesis of current MHM practices and identified gaps giving guidance on possible interventions and programming.

5.2: Discussion

Narratives from the study participants especially the girls shared their experiences that presented as barriers to MHM in school. The researcher has analyzed the findings to determine the major propagators of MHM barriers and how they negatively impact on the girl child's ability to succeed and thrive within the school environment. Overall, multiple issues have been revealed ranging from low resources, a lack of knowledge related to MHM, and low support due to secrecy leading to some negative outcomes, such as school absenteeism and discomfort among schoolgirls. In addition, knowledge of menstruation and MHM is varying because schoolgirls learn basic science at school and some learn MHM practices at home.

The constructs of the social ecological model in this study has placed individual girls at the biological level which is the center of a cascade of multiple levels of influence as indicated by the

theoretical framework. This has guided the study in the exploration of MHM practices in rural primary schools were participants have shared their lived experiences resulting from a range of behavioral restrictions based on traditional, cultural and beliefs. However, schoolgirls do not receive any guidance on managing menstruation in schools. The formal education sector of Uganda does not have clearly defined policy guidelines on how MHM should be implemented in schools. This has presented over whelming challenges of integrating MHM into school WASH systems, processes and structures. School health programs were nonfunctional in all schools visited which makes MHM impossible to be included into school plans and budgets by the school management committees. In general, fulfilling the indicators of SDG-4 on universal education and SDG-5 on gender equality and empowerment may present critical challenges for girl child health and education.

As revealed by the findings in this study, culturally menstruation is not subjected to discussion openly. This has been further demonstrated by studies (Jogdand and Yerpude, 2011; Kumar and Srivastava, 2011) how adolescent girls often misunderstand menstruation, characterized by inadequate knowledge and erroneous beliefs about the topic. The study reveals a mismatch of information acquired from home in relation to the one obtained from school. This mixed information acquired by the girls especially prior to menarche has significant impact to their psychosocial development with consequential effects on their transitioning from childhood to adolescence. Uganda as a country does not have a streamlined curriculum that is well developed to accommodate comprehensive sexuality education. This eventually creates a vacuum in the education system which lacks defined approaches to guide school pupils at their tender age and more so to uphold the country's morals. The resultant burden is further compounded by the schools

and teachers being incapacitated to deal with the day to day menstrual hygiene requirements and demands by the schoolgirls.

Evidence gathered in this study clearly shows that MHM is a critical problem for girls in school as revealed by Sommer and Sahin (2013). Lack of appropriate policy and strategic guidance by the government of Uganda has placed stumbling blocks for scaling up of good practices and sustainable initiatives that have been put in place by organizations such as World Vision and Child Fund that support the district. Furthermore, the Ministry of Education is an appropriate institutional structure to take the lead in developing appropriate policies and programs to address MHM in schools including curricula development and teacher's training guides in colleges. These are glaring gaps in the management of menstruation hygiene which eventually impact on the retention, performance and completion of girls in school.

Reviewing of documents both from the Directorate of Education and implementing partners such as World Vision and Child Fund revealed that improving MHM in schools is not prioritized on the agenda of the district education sector. District education officials unanimously agreed to the fact that MHM is a topic that has never been discussed in any of their planning meetings, throughout the extent of their careers. This is evidenced when the School Management Committees and Parents Teachers Associations do not have MHM in their planning and budget frameworks. This directly translates into implications for the district education sector whose stakeholders are not convinced that MHM in schools is key to the learning outcomes. Hence, the stewardship at district level, schools, teachers, and other actors in the education, health, gender and WASH departments lack strategic focus for promotion of MHM in schools.

Further review of official documents did not reveal any current standards for guidance and support of MHM in school of Kiboga district (Annual district reports, Implementing Partner progress reports). While several education and gender policies exist in Uganda, there are no MHM-specific policies, guidelines or educational initiatives that support an enabling school environment for girls during menstruation. Some of the policies that exist include: The Education (Pre-primary, Primary, and Post-primary) Act of 2008, The Social Protection Policy, The National Strategy for Girls Education and The Constitution of Uganda all require children to have a decent education in schools with the best possible environment for learning, study and play, however, they are not clear on MHM challenges faced by the girls in schools. In addition, there are policies related to gender that focus on protecting women and girls in different events, such as child marriage and domestic violence, yet again they fall silent on menstruation.

However, most schools visited were not equipped with adequate WASH facilities girls need to manage their menses effectively and discreetly. This is in agreement with several studies (Bista, 2004; UNICEF, 2005; Nahar and Ahmed, 2006; Sommer, 2010; Sommer, 2011; Pilliteri, 2012; Kabir et al., 2012) that indicate school aged menstruating girls in developing countries struggle to find appropriate places and facilities in their schools to deal with their menses. Personal hygiene was observed to be compromised by lack of water, and hand washing stations with latrine stances that have inadequate lighting and no functioning door locks. Poor hygiene and sanitation facilities in Ugandan primary schools have been identified as one of the contributing factor to high school dropout rates for girls. At this level, it is reflected in lower enrolment rates for girls in post primary school institutions, tertiary and universities leading to gender inequality in education (The National Strategy for Girls Education).

None of the schools visited had optimal water and sanitation conditions to guarantee hygiene practices, safety and privacy for schoolgirls. As revealed by the literature, poor school WASH facilities have significantly contributed to poor school performance of girls (WaterAid, 2009). The poor WASH facilities may not have contributed significantly to school absenteeism but they present a major impact to unhygienic menstrual management practices in schools. Subsequently, girls prefer returning home and manage their menses more comfortably and discreetly rather than to use the school WASH facilities. This may have implications on their overall school attendance and performance in general. More to this, lacking appropriate, well-designed and adequate numbers of WASH facilities to support MHM practices and a need to keep menstruation secret contribute to a significant fear of leakage or staining of clothes. Consequentially, this anxiety results in reduced participation in school activities, both academic and with peers, including reluctance to stand in front of the class or participate in physical education.

The government of Ugandan through the Ministry of Health emphasizes school health programs meant to create an enabling environment to provide quality education by providing health promoting services in education institutions. However, the rural schools visited in this study did not have any health promoting services on-site. Findings revealed lack of teacher-students clubs to overlook MHM systems in schools including availability of MHM supplies, dissemination of information, and operation and maintenance of WASH facilities. In addition, WASH clubs that are meant to provide information on multiple aspects of MHM were lacking in schools. The implication is that schools visited did not meet the National Basic Requirements and Minimum Standards for WASH in Schools. In addition, the rural schools in Kiboga were found to lack advocacy for positive health lifestyles hence compromising quality of education.

More girls in this study used traditional materials, like cloth, rather than factory made sanitary pads because of the limited access to affordable and effective absorbent materials in schools and in their communities, which impacts on their ability to manage menstruation with confidence. These findings prove the hypothesis by Dolan et.*al*, (2013) stating that girl friendly changes such as gender-separate latrines, locks on toilets, discrete facilities for changing absorbents or washing enable improved MHM. Failure to have menstrual hygiene supplies especially in the event of emergencies at school causes unimaginable embarrassment for girls which directly may impact on their stay in school hence increased school dropout.

The interpersonal level of the SEM constitutes formal and informal social networks and social support systems that influence girls' menstrual hygiene behaviors. The study identified some of these social circles as family, friends, peers, teachers and customs or traditions. These primary interactions were found to be necessary for menstruating girls to access absorbent materials or MHM facilities. The findings also revealed instances where girls' attempt to seek for assistance was being affected by these relationships and interactions especially if uncomfortable or potentially harmful. Girls tend to be teased during menses and often choose to isolate themselves from others to prevent embarrassment despite their need for support hence negatively impacting on their self-esteem which may imply losing confidence to manage their menses.

Girls' relationships with boys seem to transition after menarche. Prior to menarche it is common for boys and girls to play together at home and school, but once they reach menarche, girls said they were expected to no longer play with boys. This is a key finding in the current MHM practices identified in this study whereby parents narrated that menstruating girls are considered to have "outgrown" playing with boys in a social sense, and they were afraid for their daughters becoming

pregnant as a consequence. Either way, once girls begin menstruating, almost all girls are told explicitly by their mothers, female relatives, teachers, or peers to stay away from boys and men, particularly during menstruation. Such misconceptions are isolating and excluding the girls from social systems that are meant for support. As a result, girls are filled with fear and tension around men and boys because of failure to relate menstruation to their fertility cycles.

Lack of practical and economical support from families as well as teasing from male counterparts in schools and communities has forced girls to look for support else were predisposing them to engage into transactional sexual activities to obtain sanitary items. These findings support Kansal et.al, (2016) study, which is in agreement that inadequate knowledge, materials, and facilities to manage menstruation disenables girls and prevent them from meeting their full potential in school when they reach puberty. This calls for strong support from family, community, and schools to change the physical, social, and economic environment which enables girls to comfortably manage their menstrual periods in schools.

The relationships girls have with their teachers vary and affected by the teacher's gender. Girls said they felt more comfortable talking with their teachers if they were female. This reveals an important issue that should be considered by the education department as they deploy teachers in schools. Gender balance in the staffing norms of school human resources may improve the girl-teacher relationship were girls feel comfortable openly discussing and asking questions about menstruation with their female teachers. The findings reveal female teachers to be more understanding and sympathetic to the girls' needs and sometimes they are a source of information and MHM supplies, including pads or pain medication.

The study findings have revealed that fathers are the most unsought source of information on menstrual hygiene and issues of menstruation are generally regarded as a big secret in culture and men are not completely supposed to know anything about it. This leaves women with the sole responsibility to provide such information to girls since men do not menstruate. Excluding men from MHM issues may have economic implications on menstruating girls since men usually have a high stake in regards to financial matters at home. It is also important to note that addressing both the practical and strategic needs of schoolgirls related to menstruation and menstrual hygiene requires comprehensive programs that target women and girls as well as men and boys. However, the study was unable to establish how to effectively engage men and boys in menstrual hygiene interventions.

Most girls were not equipped with the appropriate knowledge or skills to manage menses effectively, and many had negative attitudes or beliefs about menstruation and considered it to be a burden. Literature revealed girls being challenged in school with inabilities or lack of confidence to manage menstrual hygiene effectively, and their lack of knowledge about menstruation. As a key finding, this has established that girls are provided with conflicting information on menstruation from educators and family members; they hold a combination of traditional and modern beliefs and practices, some of which are harmful to their health. Conflicting information may affect girl child intellectual growth, impacting on the physical and emotional aspects of their transition to adulthood. Girls require accurate MHM information and skills to adequately manage their personal and social development.

The majority of girls wanted to know the reason for the occurrence of menstruation, the physiological aspects of the process, and whether the precautionary practices told to them by their

mothers had any medical basis or not. The literature revealed ignorance of pubescent girls about their bodies, sexual and reproductive health and rights affects their sense of empowerment to manage monthly menses and to make informed decisions about sex after menarche (UNESCO, 2014). Girls need this information to self-empower themselves and have increased control over their lives. This enable them to confidently manage their periods by controlling the pains, acquire appropriate material for a sanitary napkin, and also learn about irregularity periods, too heavy or too little bleeding and how to manage. However, the education system in Uganda does not comprehensively cover these important aspects of MHM exposing the girl child to distressing experiences which may negatively affect their education performance and attendance.

For the girls who participated in this study, knowledge of menstruation was typically gained once they reached menarche. Nearly every girl interviewed said she was unaware of menstruation prior to her first experience expressing feelings of fear and confusion. This implies that girls lack the necessary preparation prior to menarche. As suggested by Sommer (2011), menarche presents an opportunity to reach out to the girls as their bodies are biologically changing. At this point girls should be prepared to encounter social dynamics with their families and communities and empower themselves with sexual and reproductive health information. Currently, the Ugandan government through its ministry of education has halted dissemination of comprehensive sexuality education training materials in schools throughout the country. Their critics urging government to first develop a policy aligned to Uganda's cultural values and practices which should be laid out in Parliament.

Narratives from the participants have further highlight how school attendance during menstruation is such a miserable experience for many girls. Girls experience moments of decreased

concentration associated with fear of staining their clothes or dropping the sanitary napkin, hence undermining their educational attainment. In addition, girls also feel tired and weary during their periods and school settings lack infirmaries to offer resting places. Female teachers were also found to be affected by the absence of suitable facilities in schools. Consequently, girls miss or underperform on exams, miss school, and get distracted and unable to concentrate in class. Their ability to advance to the next class or onto secondary school hinders their academic achievements. The overall outcome is the impact on the realization of SDG 4 on universal education and SDG 5 on gender equality and women empowerment.

Occasionally, girls would link the act of menstruation with future childbearing. They stated that women and girls menstruate so that they are able to have children, or that not menstruating meant a woman was unable to bear children. This is a clear indication of misconceptions girls have in relation to their fertility cycles, placing themselves in vulnerable positions that predisposes to adolescent pregnancy if sexually active (Mason, et.*al*, 2013). This study failed to establish the biological reasons or how menstruation was linked to having children. The most common menstruation-to-childbearing link that girl expressed was the belief that sex during menstruation would lead to pregnancy. Considering the global dropout rate before the last year of primary school of 23% (as high as 42% in sub-Saharan Africa), this clearly indicates a knowledge and skills deficit in school systems and processes on menstrual hygiene education reaching out to the girls when young and still in school.

Lastly, girls experience menstruation differently and do not understand that differences in cycle, symptoms and pain can be normal. The timing of menarche, menstrual pain, discomfort and fatigue, and heavy flow are important determinants of girls' experience of menstruation. Girls lack

strategies to treat pain and track their cycle so they can better prepare for and manage menses (House et.*al*, 2012 and Sommer 2011). Most girls reached menarche by age 13, yet few had been educated about menstruation before this time. Classroom lessons are not reinforced with school established hygiene clubs were older students teach the young students about MHM, hand washing, and other hygiene topics. Active school health programs such as school clubs and health assemblies provide strategic opportunities to prepare and nurture girls and boys into healthy adults. School health programs are suited to provide a platform to address MHM because they entail strategies, programs, activities and services that are provided in school setting to promote physical, emotional and social development of learners and the communities at large.

5.3: Conclusion

This is an exploratory qualitative study conducted in the rural primary schools of Kiboga district with an overall goal of exploring the barriers, their contributing factors and overall impacts of menstrual hygiene management among school aged adolescent girls. With the aim of understanding MHM in primary schools of low resource settings this study has clearly demonstrated that girls are not well prepared when menstruation commences. They are limited to information, products, and infrastructure needed to comfortably manage their menses. Girls' health, well-being, and rights are further compromised when they must isolate themselves from their families, peers, or skip school, and face the risks of physical safety because of their basic biology. In addition, adolescent girls are vulnerable to negative outcomes related to menstruation, including effects on their overall self-esteem and confidence.

The study has notably revealed how family support systems influence girls' menstrual experiences. Girls were found to spend most of their time at home; therefore, it was imperative for this study to

identify structures at the interpersonal level of the ecological model to better understand their MHM experiences. Acquired from home are the traditional beliefs, misconceptions and restrictions on menstrual issues which have led girls into total confusion hence staying silence on MHM related problems. This further compounds into self-exclusion both at home and school which later translates into gender disparity.

Considering the environmental level of the SEM, the study has revealed schools having MHM problems associated to infrastructure, instruction methods, and content of puberty studies. These have emerged as debilitating factors which are not considered in policy making hence having adverse effects on girls schooling and girls' modest management of personal hygiene making MHM an impossible challenge. In such circumstances girls choose to miss school during their menses which leads to drawbacks on lessons learnt at school (Haque, et al. 2014)

Despite efforts to provide more effective educational responses for all children (World Bank, 2014), less is being done towards a menstrual management policy that ensures girls who are experiencing menstruation participate in the same way as other children in Uganda. This calls for a gender sensitive educational policy required to ensure full access to education by menstruating schoolgirls even those in rural school settings. This study also encourages inclusion policies that are aimed at eradicating discriminatory tendencies that make menstruating girls vulnerable to exclusion from participating in education.

Given the short time frame for this brief study, it was not possible to cross-check results with class attendance records in schools over a longer period of time, or to include other aspects around the potential correlation between girls menstruating and school dropout.

Within the context of possible further study, it would be interesting to monitor class attendance over a one-year period and provide consistent short questionnaires to girl pupils who are missing a number of days from school over the academic year. Other aspects that would be of interest include reflecting on the costs of menstrual management facilities, both in the form of hardware (e.g. changing rooms) and software (e.g. life skills training classes). Within this given context, more focus could be paid on the importance of keeping girl pupils in school.

5.4: Recommendations

Based on the research findings, it can be derived from the study that Kiboga district is far from providing proper menstrual hygiene management for all its rural school going adolescent girls. Such menstrual care is needed for girls to lead healthy, safe, unmolested and dignified lives in school. In order to provide the necessary conditions for improving girls' menstrual status, there is need for all stakeholders, i.e. parents, teachers, children, government and the community, to act in unity, for the common good and a better future for school children, both boys and girls.

During each interview, study participants had the opportunity to share their suggestions on how to improve MHM in their school and community. These suggestions together with the study recommendations indicate specific needs to be applied within school systems and structures such as WASH programs implemented in school settings. Majority of their suggestions focused on improvements to the physical environment and requests for supplies such as pads and pain medication. Girls also requested more information and guidance, particularly before menarche.

From a broad point of view, it is imperative to raise awareness of school administrators, communities, donors, and decision-makers to understand menstrual hygiene and its challenges

faced by girl students with regard to both hardware and necessary consumable goods such as soap. Methods to improve MHM issues can only be most effective when everybody dares to ensure that menstrual hygiene is mainstreamed in all WASH intervention agendas at local level. The civil society, given their close proximity to the grass root, should play a lead role in this and ensure that they integrate MHM agenda in all school WASH programs as a matter of priority.

This study has highlighted the contributing factors to the challenges of MHM in rural school settings which are a range of interacting features that shape menstrual hygiene and are underpinned by social and economic inequalities. These factors include: material circumstances, the social environment, psychosocial factors, behaviors and biological factors.

In addition, the study adopted an ecological approach to menstruation in rural primary schools that sees MHM as a dynamic product of interactions between individual girls and their environments. It recognizes the links and connections that exist between different settings and recognizes that people do not live or interact in just one setting, their lives overlap a range of different settings. Therefore, recommendations for interventions in this study have focused more on the broader factors contributing to MHM rather than simply addressing individual and/or risk factors.

5.4.1: Societal Recommendations

There is a need to understand the broader societal responsibility for addressing MHM, as well as to consider ways in which girl pupils can be assisted. The district and CSOs operating within ought to sensitize people about the social and cultural constructions of menarche to make it better experience for girls. Furthermore, it is upon the district to ensure that psychological and physical

barriers are handled in order to lessen their impact on girls schooling, and hence existing social structures have to be strengthened so as to create a better learning environment for girls.

Menarche and menstruation are significant experiences in girls' lives as they advance through puberty. It is important therefore to educate all learners about puberty by providing them with a skills-based health education that develops their knowledge, attitudes, skills, and behaviors for their health now and throughout their lifespan. Menstrual studies should be integrated in puberty studies in the science classes to reduce shocks and discomforts associated with menarche. The topics should include, and sanitation be imbedded in a larger health curriculum that promotes healthier lives, relationships and gender equity. The topics could be age specific and developed appropriately to prepare learners for life changes before they experience them and hence start as early as five years old and continue through to young adulthood.

School MHM programs could have innovative teaching approaches with high quality education materials, based on the most sound, scientific evidence shaped by the national curriculum. The directorate of health and education in Kiboga district may then spearhead these menstrual hygiene management approaches to deal with the physical, emotional and cultural aspects in order to have desired impact. This can easily present an essential cornerstone of an effective school MHM program that could support provision of creative ideas about the teaching methods and approaches hence encouraging teachers and educators to take up this difficult topic.

Menstrual hygiene should be prioritized and captured in the directorate of health and education sector performance reports. This entails that Kiboga district local government includes menstrual hygiene matters in the planning and budgeting process so as to incorporate MHM indicators in monitoring and evaluation systems and processes for rural primary schools.

5.4.2: Environmental Recommendations

The department of Inspectorate of schools in the directorate of education should ensure promotion of safe environment by equipping all schools with clean and safe water and hand-washing facilities, adequate sanitation facilities, and clean and safe latrines. In addition to a safe physical environment, skills-based health education and policies should be enforced to create a safe social environment. Thus, healthy individual behaviors can collectively contribute to a health promoting social environment that supports good menstrual hygiene with core values of respect, dignity and self-esteem.

Furthermore, rural schools need support to focus and aim at implementing MHM friendly practices and hence increase concentration of school girls. This can be done by providing the necessary needs for quality MHM products to prevent leakages, access to pain medicine, and disseminating of education/awareness materials to both girls and boys about menstruation hygiene reducing on the impact of bullying.

For the negative connotations surrounding menstruation, there is need for their removal, and replaced with more positive language. This calls for dialogue, were district officials meet with school administrators and communities to discuss about menstruation related issues. Such dialogues may encourage parents to discuss menstruation with their children and emphasize the need to discuss menstruation with their daughters, before and after they begin menstruating. Menstrual conversations may also include the men and the boys in addition, menstrual dialogues could be included on the agendas of parent-teachers' association meetings.

School health inspectors may consider making MHM part of their periodic inspection and report to the district WASH Coordination Committee and the District Health Team on a regular basis. The inspectors may also ensure that all primary schools have established and functional school health clubs and girl-education movement clubs supported by trained and well-motivated senior woman teachers to support and advice school girls reaching puberty. In addition, schools should create a safe space at school for girls to discuss menstruation and have a 'girls-only' section where girls can meet together to discuss health related topics.

5.4.3: Interpersonal Recommendations

While at school, girls need social support to effectively transition into puberty with support from the female teachers as sources of information. This necessitates training of female teachers or female staff members to support the girls by providing them with more in-depth knowledge on menstruation, MHM and girls' health, enabling them to provide practical guidance consistent with the school environment and available resources. The trainings should also include male teachers to be more sensitive to the needs of menstruating girls.

Parents and the community at large it is imperative that they get involved in the elimination of social and cultural constructs that cause encumbrances that intersect with menstruation to make girls education experience a dilemma. This is essential for changing perceptions of parents and granting teachers and schools the mandate to comprehensively offer school-based puberty education programs. Involving parents and communities in puberty education is therefore critical; it not only improves the child's health and wellbeing but also the parents' knowledge and awareness is transferred. Schools also present a unique community resource for promotion of health and development for children, families and teachers.

5.4.4: Personal Recommendations

Majority of the girls were found to alter their behavior at school while menstruating; for fear of bloodstains that reveal their menstrual status, and hence do not actively participate in class or with their peers. More to this, girls feel embarrassed during their menses and end up in isolation, concealment and secrecy at school, a feeling exacerbated by presences of male peers. It is therefore important for teachers to be aware of how girls change their behavior in class and on school premises while menstruating and support them through this time. Furthermore, girls need accurate information regarding menstruation and puberty in order to reduce the risk of unwanted pregnancy and sexually transmitted infections.

Furthermore, it is important to have the girls access information on menstruation and MHM through increased circulation of resources and booklets to both students and teachers, encouraging them to read and use them as educational references, giving feedback to guarantee that they meet their information needs and make improvements as needed.

5.4.5: Biological Recommendation

Teaching about menstruation should begin at younger ages to ensure girls know about it prior to menarche. This could begin in primary schools and continue all the way into secondary schools with provision of information according to age not class. Girls may also have access to practical guidance on health and hygiene, biological aspects of menstruation, and sexual and reproductive health. In addition, girls should have access to pain relief medication during menstruation in order to participate more fully in their daily and school activities.

5.5: Auto Evaluation of the Study

This exploratory qualitative study has exposed me to the application of health promotion models/theories in research. Having adopted the Social Ecological Model (SEM) in this study, I have learnt the application of concepts and constructs of the model to explore the multiple levels of influences which present as barriers to good menstrual hygiene and their contributing factors in rural schools. I have further learnt the application of health promotion models to structure research studies; in this case literature review and study recommendations have been supported by the structured cascade of the SEM. In addition, the narratives collected during data collection have been thematically analyzed basing on the model. Furthermore, the application of the ecological model has provided me with opportunities to reach places and getting exposures to all kinds of people that responded to my interviews ranging from policy/decision makers to implementing partners who have picked interest in this study.

Initially, as I began this study, I must have been over ambitious, focusing the study beyond Kiboga district to include government ministries such as health, education, and water and environment. These ministries were identified by the study to have a direct attachment to the way MHM is being implemented in school settings. With the approach of the SEM, the study became so broad and ridged for me in terms of time management and financial costs to be incurred in collection of data. Having taken a step back, I realized all these ministries had line departments/directorates within the local government structures that I could comfortably work with during my data collection, and this I did and still achieved the desired objectives of the study.

In other words, this study has been interesting and informative to me, I choose a unique topic and I have been able to support it all through by identifying most important facts. The ideas have been

carefully synthesized, with information being retrieved from sources that are current and trustworthy. Throughout the study, I have strictly adhered to the university research standards maintaining a scholarly voice of confidence.

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ANNEX 1

IN-DEPTH INTERVIEW WITH SCHOOLGIRLS AGED 13-14 YEARS

Primary areas of inquiry:

- Knowledge
- Personal experience with menstruation
- Behaviors during menstruation

A. Opening Questions – Personal background and questions about school

1. How old are you?

2. What grade are you in?

3. How long does it take you to walk to school?

4. Have you always lived here?

5. Who do you live with?

6. Any other family members close by?

7. Do you have friends who live nearby?

8. Let's talk about school. What is your favorite subject in school?

9. How would your teacher describe what you are like in the class to your family?

10. What do you do with your friends in your school?

11. What do you learn about health at school?

12. What do you learn about puberty at school?

B. Key questions – Knowledge

13. What words do girls use to talk about menstruation in your school?

14. What words are used to describe girls or women who are menstruating in your school and village?

- Are you comfortable with these words?

15. Can you tell me about the first time you learned about menstruation?

16. Why do women and girls menstruate?

17. How has your understanding of menstruation changed since you first learned about it?

C. Learning from experience

18. Tell me your experience of the first time you got your period

19. Tell me about the most recent time you got your period at school

20. Can you tell me about a time that you had your period at school and you weren't prepared or didn't have supplies?

21. Looking back at your experiences, what have you learned from having your period in school?

22. When you're menstruating now, who do you talk to about it (if anyone)?

D. Key questions – Behaviors during menstruation

23. Are there any activities you do not do when you're menstruating?

24. Was there a time at school that you were asked to do something that you didn't feel you could do because you were menstruating? Please explain.

25. Do you think that people treat you differently if they know you are menstruating?

26. Are there any advantages to menstruating for girls? Please explain.

E. Closing questions/Recommendations

27. One day you see that your best friend at school has a stain on her uniform and she doesn't realize it. What do you do?

28. If you could give advice to your little sister/cousin before she starts menstruating to help her, what would you say?

29. We are going to come up with recommendations for the Ministry of Education that could help improve schools. What advice would you like us to pass along to them that you think would make this school better for girls who are menstruating?

30. What could parents/families do to support their girls?

ANNEX 2

FOCUS GROUP DISCUSSIONS WITH MOTHERS

Primary areas of inquiry:

- Women's knowledge, perceptions and behaviors
- Mothers' support to children and their understanding of their daughters' experiences
- Mothers' understanding of girls' experiences in school
- Program recommendations.

A. Opening questions – Introductions and questions about the community

Opening questions intended to build rapport and gradually lead into key questions.

1. As an introduction, let's go around and have everyone tell us:

• Your name (they can provide a fake name if so desired).

• How many children you have – boys and girls.

• How you normally spend a day.

2. How do most people in this community make a living?

3. What are the most important roles women have in this community?

B. Key questions – Women's knowledge, perceptions and behaviors

4. What terms, words or phrases do women in this community use for menstruation?

5. Can you explain why women menstruate?

6. How does a mother feel when her daughter begins to menstruate?

7. Can you describe a typical day for a woman in your community when she is menstruating?

8. How is this day different from a typical day when she is not menstruating?

9. When a woman has her period, how does she take care of herself during those days?

10. What kind of materials do women use to manage their menstruation?

11. What do women do with used materials?

12. Do women face any challenges with the materials they use?

13. When women were younger, how did they find out about what materials to use and how to take care of themselves during menstruation?

C. Key questions – Mothers' support to children and their understanding of their daughters' experiences

14. How do young girls usually find out about menstruation?

15. What do mothers in this community typically share with their daughters about menstruation?

16. What else do you think your daughters know about menstruation?

17. How do mothers feel when talking about menstruation with their daughters?

18. Do mothers in this community typically talk about menstruation with their sons? What do they share?

19. What materials do young girls in this community typically use to manage their menstruation?

20. Who provides girls with materials?

21. Does a girl's typical day change when she is menstruating? How?

D. Key questions – Mothers' understanding of girls' experiences in school

22. What specific challenges may girls face in school when they are menstruating?

23. Do you think girls have unique challenges at school that boys do not face?

24. Do mothers support their daughters during difficult days coping with menstruation? Please explain.

25. Do mothers think it is acceptable for girls to miss school during menstruation?

26. Do girls manage menstruation differently at school than they do at home?

27. Do girls get information about menstruation at school? Please explain.

28. How do you think girls feel when they have their period at school?

E. Key questions – Program recommendations

29. Imagine you have been asked to advise the Department of Education on how to improve programs to support girls in schools who are menstruating.

30. How should teachers be involved in supporting/educating students about menstruation?

31. How should parents be involved with school programs?

32. How should parents be involved with their daughters' needs at home?

33. Who else should be involved in school programs?

34. Are there certain aspects of your traditions that you believe should be incorporated in education surrounding menstruation?

F. Closing questions

35. Do you have anything else you would like to add to the discussion that we have not yet covered?

36. Do you have any questions for us? We may not be able to answer them all, but we can do our best.

ANNEX 3

FOCUS GROUP DISCUSSIONS WITH SCHOOL BOYS AGED 13-14

Primary areas of inquiry:

- Knowledge and attitudes
- Boys' behavior towards girls who are menstruating
- Perceptions of girls' experiences.

A. Opening Questions – Introductions and questions about school

1. As an introduction, let's go around and have everyone tell us:

    • What grade/standard you are in

    • Favorite food

    • Favorite sport

    • Continue until the girls start to respond more openly.

2. What do you like most about being in school?

3. Can you all describe a typical school day for students, starting from the morning when they arrive at school?

4. Can you explain how a typical day at school may be different for boys and girls?

B. Key questions – Knowledge and attitudes

5. What sort of health education do you learn at school?

6. Can you describe what comes to your mind when you hear the word 'menstruation'?

7. Are there any terms you use to refer to menstruation? What are they?

8. Do you know when a girl is menstruating? How do you know?

9. What products do girls use when they are menstruating?

C. Key questions –Boys' behavior towards girls who are menstruating

10. How is menstruation talked about at school by boys?

11. How are girls expected to act once they start menstruating?

12. How are girls treated differently once they start menstruation?

13. Can you tell me how your behavior towards girls changes? Why?

14. Can you tell me how boys are expected to act around menstruating girls?

15. Sometimes boys tease girls when they have their period, can you tell me about a time that may have happened at this school?

D. Key questions –Perceptions of girls' experiences

16. How do you think a girl feels during menstruation?

17. Let us use an example: A girl has reached menarche. How does her behavior change?

18. Do parents talk to their daughters about menstruation? If they do, what do they say?

E. Closing questions

19. If you had a daughter, would you talk to her about menstruation?

20. Would you like to know more about menstruation?

21. What do you think menstruating girls need in school?

22. Is there anything we discussed today that you would like to talk about?

ANNEX 4

KEY INFORMANT INTERVIEW WITH SENIOR WOMEN TEACHERS

1. Do you have any formal training in supporting girls on menstrual hygiene and providing good advice?
2. Do your schools provide educational opportunities for girls and boys to learn about adolescence and menstrual hygiene?
3. Is menstrual hygiene integrated into the school curriculum?
4. Do your schools have access to well-maintained and gender-segregated water, sanitation and hygiene facilities providing a private and hygienic environment for girls and female teachers to manage their menstruation?
5. Do your schools have discrete disposal mechanism for sanitary protection materials?
6. Do your schools have a supply of sanitary protection materials for girls who face a menstrual hygiene emergency?
7. School parent and teacher associations, school boards and teachers, are they regularly discussing about menstrual hygiene in their meetings?
8. Do your schools monitor menstrual hygiene as part of their standard monitoring regimes?

ANNEX 5

SCHOOL FACILITY OBSERVATIONS

School name:

School identification code:

A. Water observations

1. What is the main water source at the school currently?
2. Is the main water source functional now?
3. Are there drinking-water storage containers?

B. Sanitation observations

1. Are there toilets/latrines at the school?
2. How many functional toilet compartments are there in the school?
3. In general, how CLEAN are the toilet facilities?
4. In general, how DARK are the toilet facilities?
5. Are girls' toilet facilities separate from boys/ facilities?
6. Are girls' individual toilet compartments lockable from the inside?
7. Do girls' individual toilet compartments contain a container for disposing of napkins?
8. Do girls' individual toilet compartments contain anal cleansing materials (water, toilet tissue)?
9. Are toilets accessible to children with disabilities?
10. What types of toilet facilities are there in the school?

C. Hygiene observations

1. Does the school have hand-washing facilities?
2. What kind of hand-washing facilities does the school have?

3. How many hand-washing facilities are there?
4. At the time of the visit, was water available for hand washing at the hand-washing facilities?
5. At the time of the visit, was soap or ash available for hand washing at the hand-washing facilities?