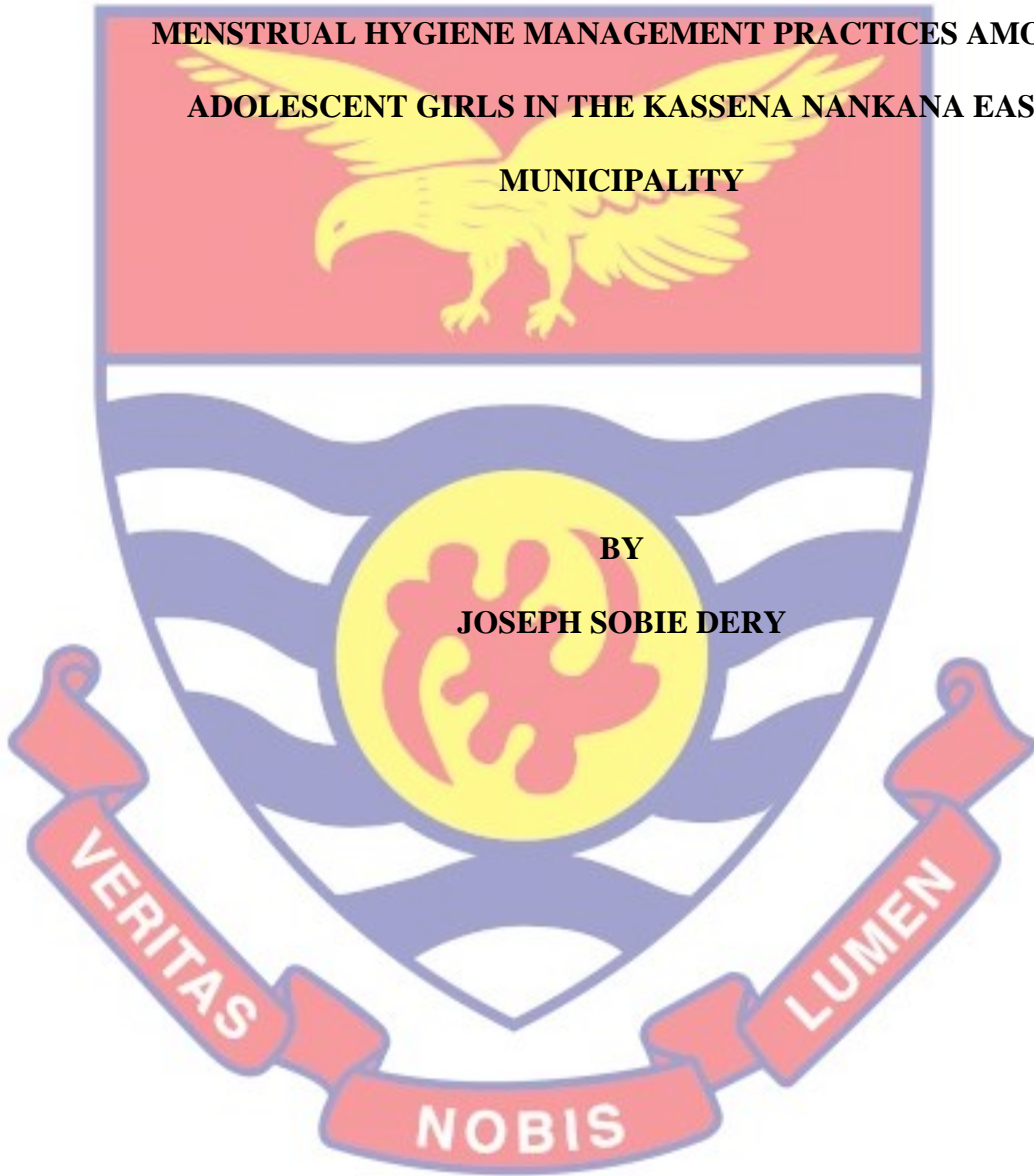


UNIVERSITY OF CAPE COAST

**MENSTRUAL HYGIENE MANAGEMENT PRACTICES AMONG
ADOLESCENT GIRLS IN THE KASSENA NANKANA EAST
MUNICIPALITY**

**BY
JOSEPH SOBIE DERY**



2022

UNIVERSITY OF CAPE COAST
COLLEGE OF HUMANITIES AND LEGAL STUDIES
DEPARTMENT OF POPULATION AND HEALTH



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ADOLESCENT GIRLS IN THE KASSENA NANKANA EAST
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BY
JOSEPH SOBIE DERY

Thesis submitted to the Department of Population and Health of the Faculty of
Social Sciences, College of Humanities and Legal Studies, University of Cape
Coast, in partial fulfilment of the requirements for award of Master of Philosophy
degree in Population and Health

OCTOBER 2022

DECLARATION

Candidate's Declaration

I hereby declare that this thesis is the result of my own original research and that no part of it has been printed for another degree in this university or elsewhere.

Candidate's Signature..... Date.....

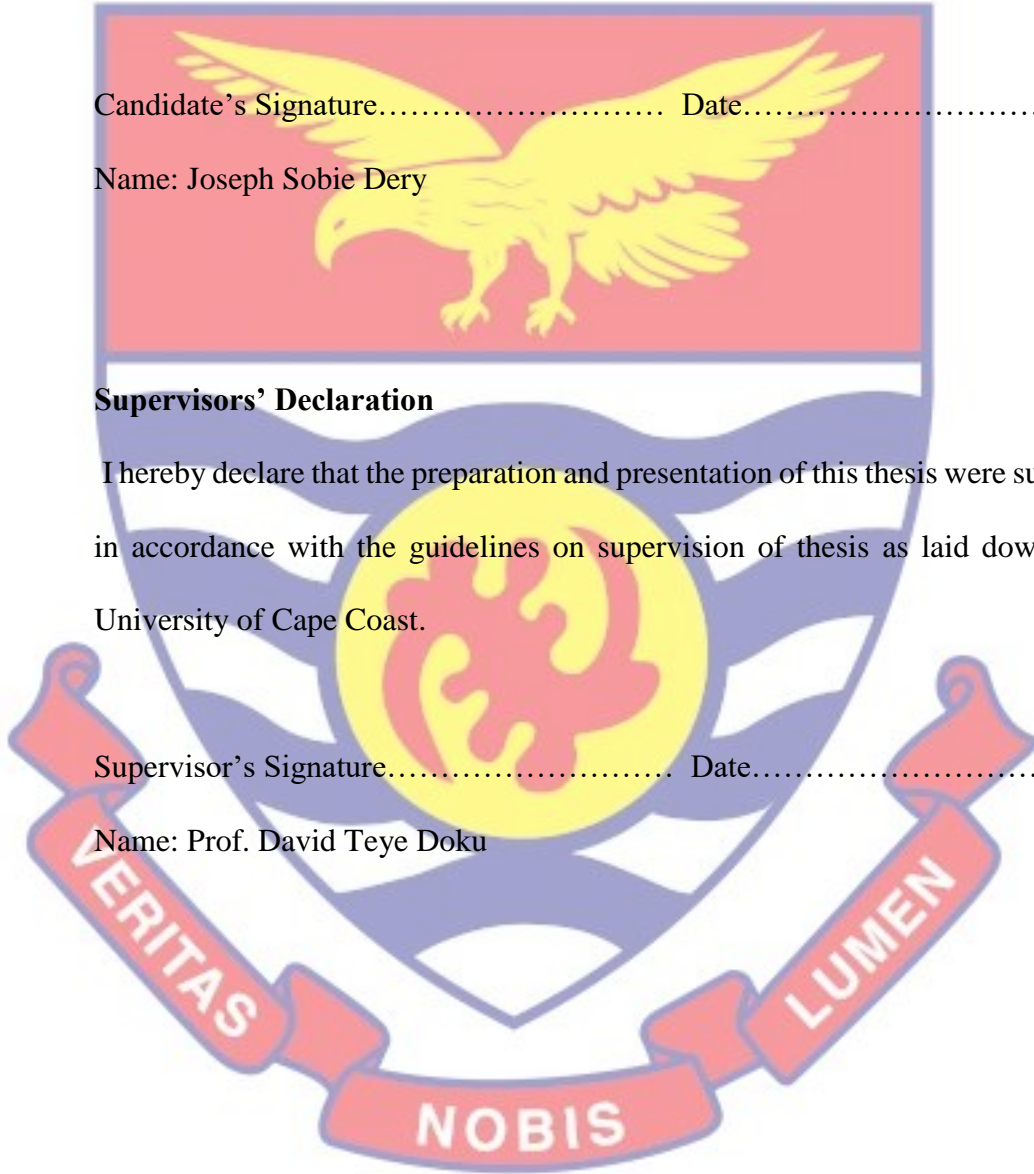
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Supervisors' Declaration

I hereby declare that the preparation and presentation of this thesis were supervised in accordance with the guidelines on supervision of thesis as laid down by the University of Cape Coast.

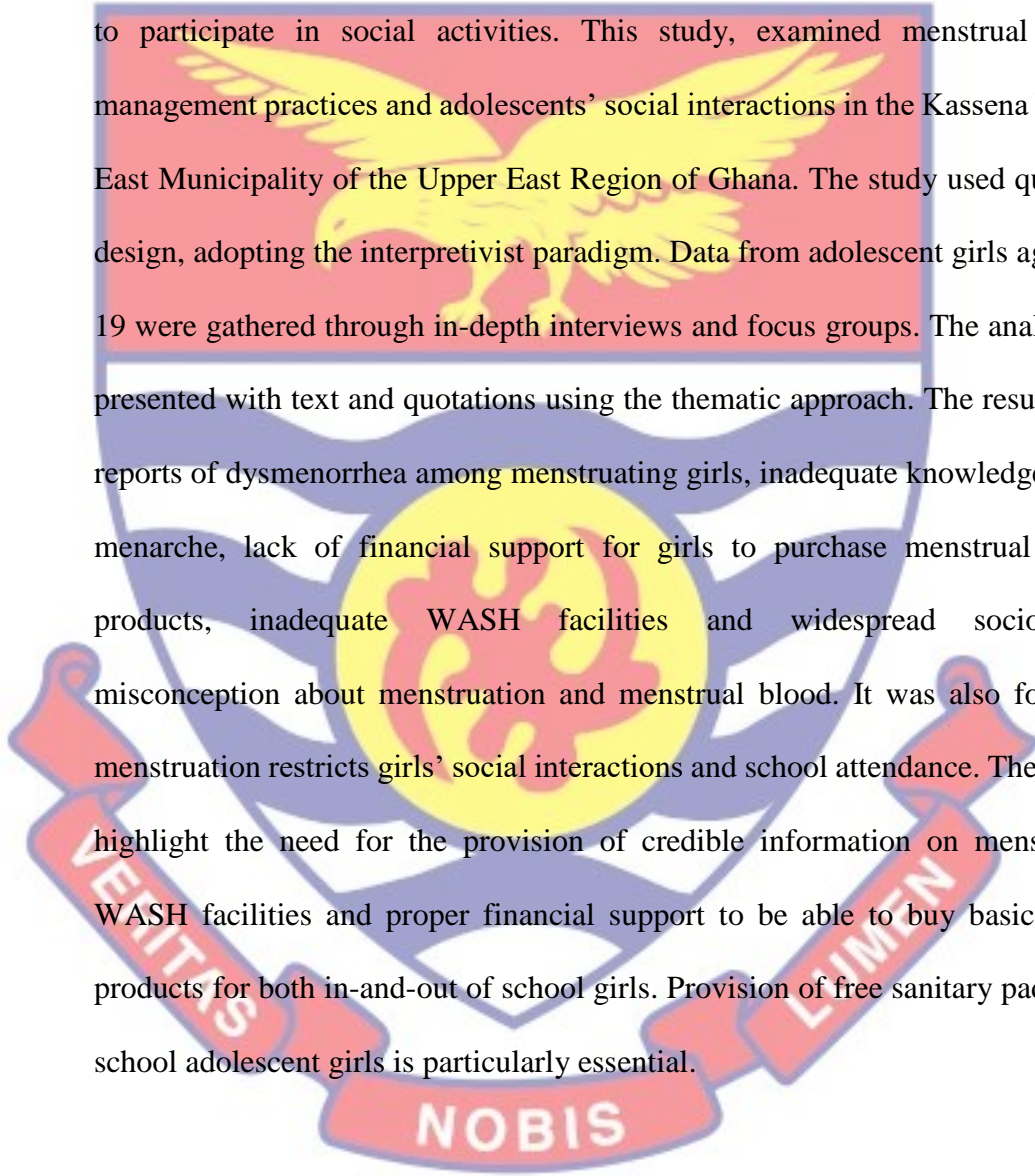
Supervisor's Signature..... Date.....

Name: Prof. David Teye Doku



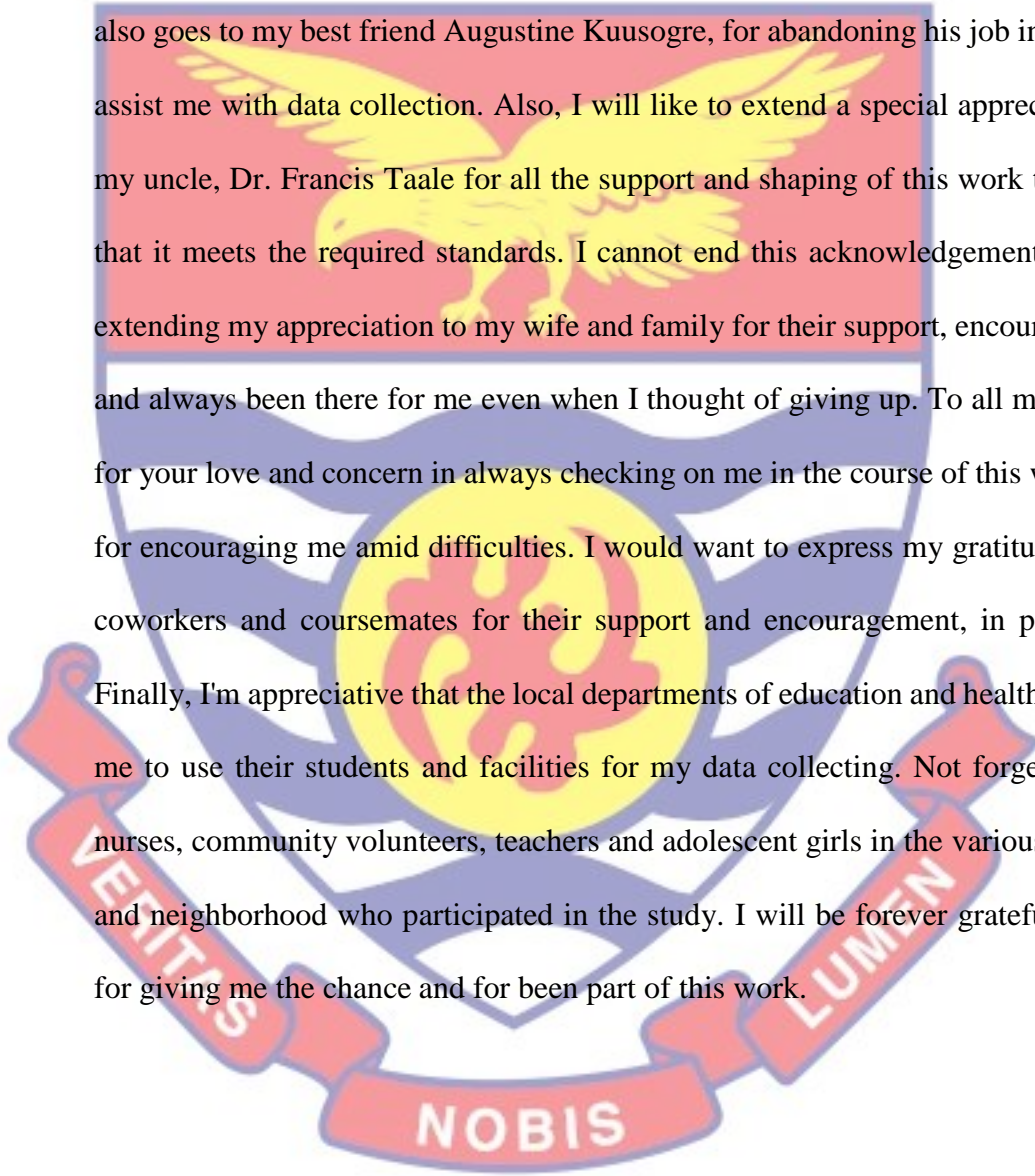
ABSTRACT

Adolescent girls may enter into menarche without any basic information about menstruation. This can make it challenging for them to efficiently manage their periods. It can also result in low confidence levels and deny them the free will to participate in social activities. This study, examined menstrual hygiene management practices and adolescents' social interactions in the Kassena Nankana East Municipality of the Upper East Region of Ghana. The study used qualitative design, adopting the interpretivist paradigm. Data from adolescent girls aged 10 to 19 were gathered through in-depth interviews and focus groups. The analysis was presented with text and quotations using the thematic approach. The results found reports of dysmenorrhea among menstruating girls, inadequate knowledge prior to menarche, lack of financial support for girls to purchase menstrual hygiene products, inadequate WASH facilities and widespread socio-cultural misconception about menstruation and menstrual blood. It was also found that menstruation restricts girls' social interactions and school attendance. The findings highlight the need for the provision of credible information on menstruation, WASH facilities and proper financial support to be able to buy basic hygiene products for both in-and-out of school girls. Provision of free sanitary pads for in-school adolescent girls is particularly essential.



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DEDICATION

To my late father, Simon Sobieder



LIST OF ABBREVIATIONS

FGD	Focus Group Discussion
GSS	Ghana Statistical Service
IDIs	In-Depth Interviews
IRB	Institutional Review Board
JHS	Junior High School
KNEM	Kassena Nankana East Municipality
LMICs	Lower-and Middle-Income Countries
MHM	Menstrual Hygiene Management
MOF	Ministry of Finance
NGOs	Non-Governmental Organizations
RTIs	Reproductive Tract Infections
SDGs	Sustainable Development Goals
UNICEF	United Nations Children Fund
WASH	Water Sanitation and Hygiene
WHO	World Health Organization



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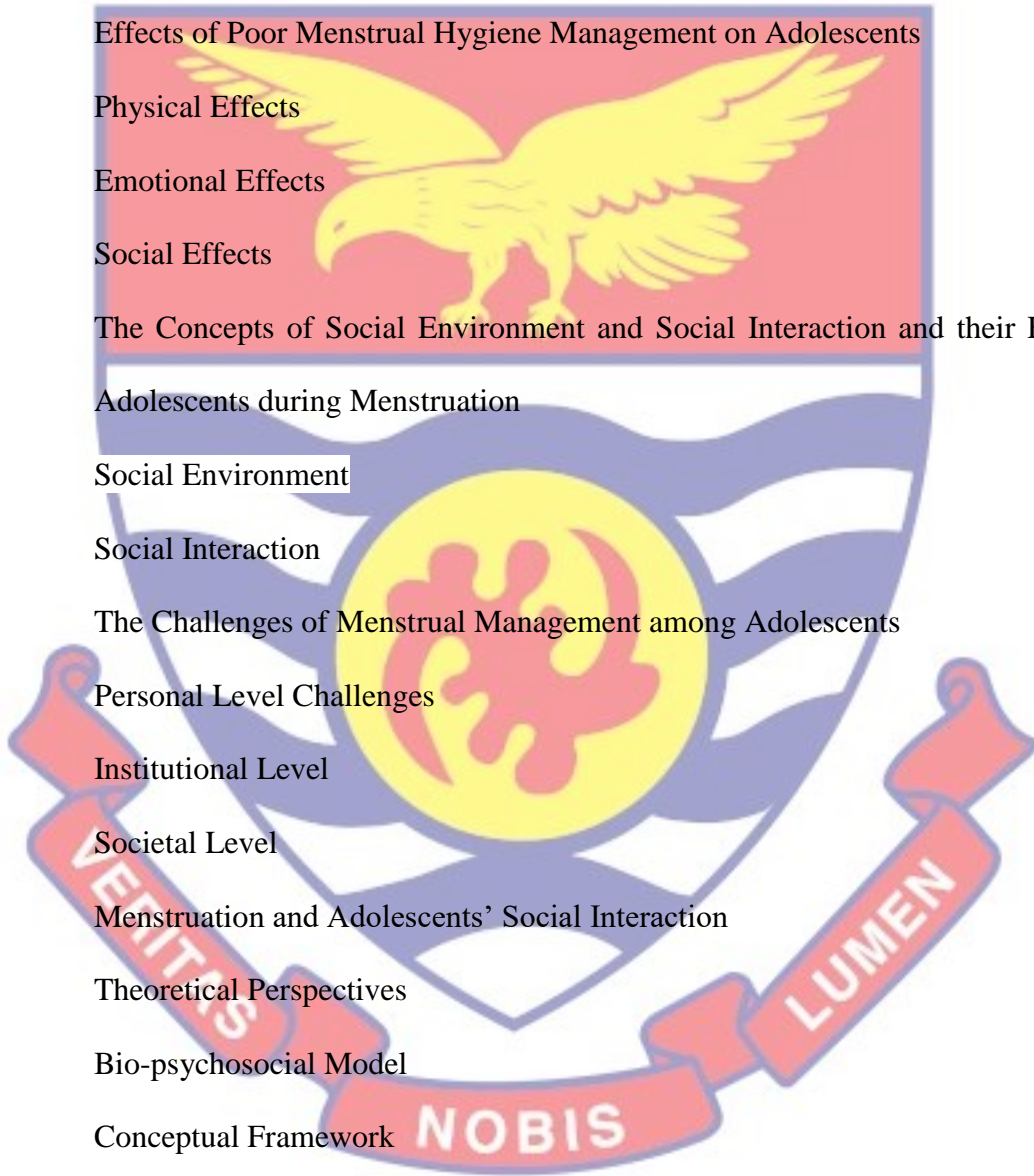
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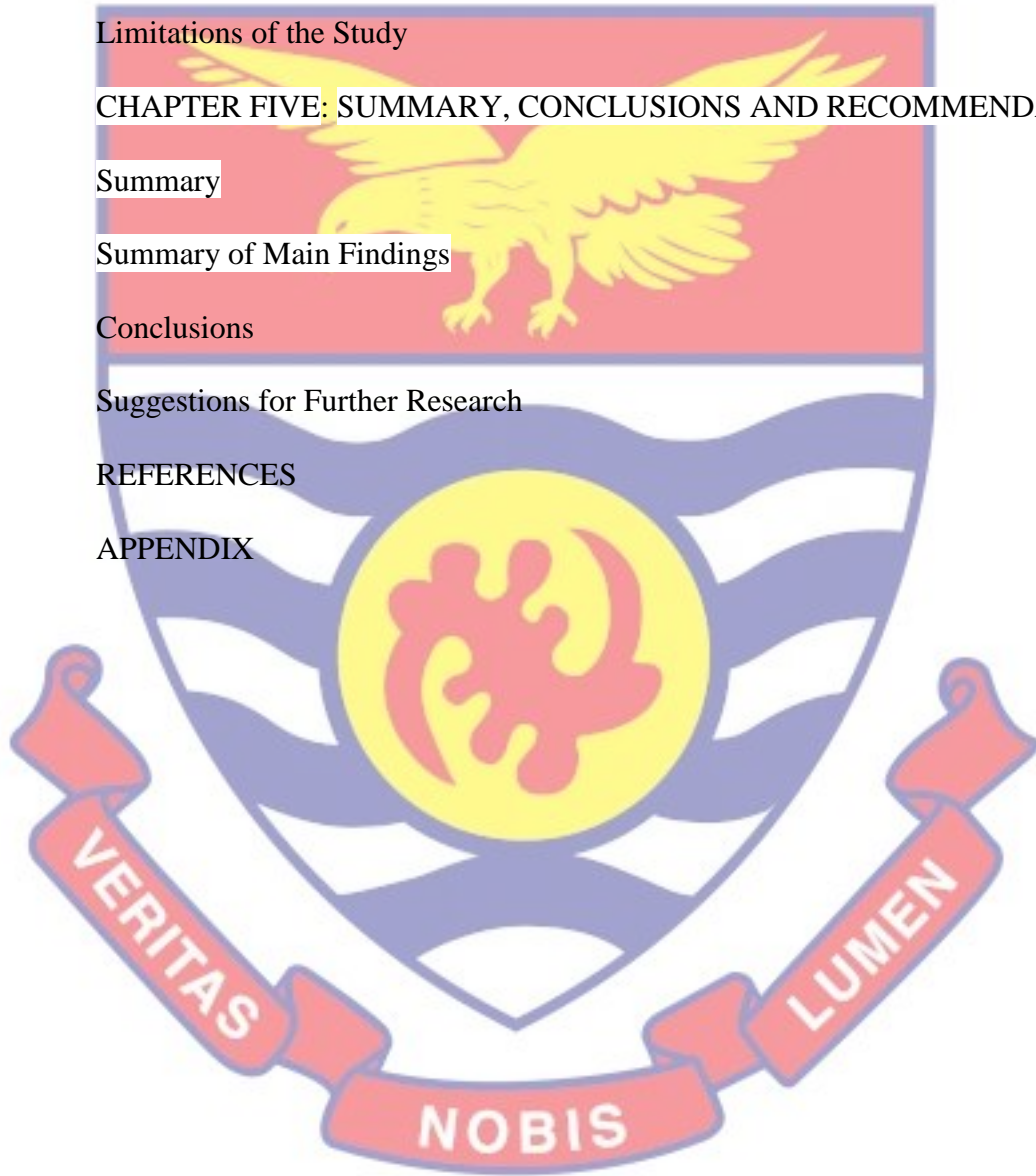
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CHAPTER ONE

INTRODUCTION

Background to the Study

Adolescence is a process that boys and girls undergo to become adults and sexually mature; in essence, it is the period from childhood to adulthood. The process involves a series of physical changes in both boys and girls that lead to the development of secondary sex characteristics. The physical features that are associated with female adulthood include the growth of pubic hair and breast development. While puberty involves a series of biological or physical transformations, the process can also have an effect on the psychosocial and emotional development of adolescents (Bista et al., 2016).

Unlike their male counterparts, adolescence in girls has been recognised as a special period in their life cycle that requires critical attention. This period is marked by the onset of menarche, which is unique to females and is also part of the female reproductive cycle which starts at puberty (Tegegne & Sisay, 2014). Menses is the vaginal bleeding that occurs in adolescent girls and women as a result of hormonal changes (Loulan & Worthen, 2001).

Menstruation is part of the normal female reproductive cycle which helps to prepare the woman toward possible pregnancy every month. A normal menstrual period usually occurs every 28 days. However, it can vary between 21 to 36 days depending on the physiology of every woman. Each period can last from three to seven days, with the average being five days (Loulan & Worthen, 2001). Averagely, about 30 to 72 millilitres (5 to 12 teaspoons) blood is lost by a woman

through menstruation monthly. Generally, there are days of lighter flow and that of heavier flows during the period (Kuhlmann, Henry, & Wall, 2017).

The onset of menstruation in girls can start as early as nine years and as late as 16 years (Loulan & Worthen, 2001). On the average, girls tend to start their menstrual periods between the ages of 10 and 14, and this continues until they reach menopause usually between their late forties to mid-fifties (Tarannum, Khalique, & Eram, 2018). According to Sommer et al. (2013), a total of 250 million girls in the less developed countries and about 56 million girls in the least-developed countries were within the ages of 10-14 years. Despite the inconsistent information on the average age of menarche in most of these countries, it is expected that a number of these girls will realise their first menses in this age bracket (Sommer et al., 2016).

A study conducted by Senapathi and Kumar (2018) indicates that the mean age of menarche for adolescents was between 12.71 and 12.57 years for the rural and urban areas respectively. Another study by Tegegne and Sisay (2014) also found that the mean age of menarche for adolescents was 13.98. It is imperative to add that the physiology of menstruation in the adolescence period does not occur without challenges. Research indicates that most women experience some mild to severe symptoms during menstruation. These negative symptoms or signs are termed pre-menstrual syndrome. Examples of mild symptoms include menstrual cramps, breast tenderness, fatigue, and loss of appetite. Some severe symptoms, on the other hand are dysmenorrhea, severe headache, vomiting, and menorrhagia (Khan, 2019).

Despite the above, a more worrying situation that normally emerges among adolescents during this physiological debut is the management of menstrual flow. Managing menstruation is a serious issue that bothers girls and women worldwide. Although this has been a global challenge, the situation in the lower-and middle-income countries is daunting and needs immediate attention (World Vision, 2016). The World Health Organization (WHO) and the United Nations Children Fund (UNICEF), in their joint monitoring programme meeting held in 2012, upheld a definition of menstrual hygiene management (MHM) as: “women and adolescent girls using a clean menstrual management material to absorb and collect blood, that can be changed in privacy as often as necessary for the duration of the period, using soap and water for washing the body as required and having access to facilities to dispose of used menstrual management materials” (Nanda, Lupele, & Tharaldson, 2016,). This definition covers parts of the physical aspects for effective hygienic managements of menstrual bleeding (Hennegan, Dolan, Wu, Scott & Montgomery, 2016). Despite being a natural process among women, traditional norms and beliefs, socio-economic conditions, and the physical infrastructure influence the practices related to menstruation (Bharadwaj & Patkar, 2004).

Globally, it is estimated that about 52 percent of the female population is of childbearing age and they are, therefore, expected to menstruate every month for within two and seven days (House, Mahon, & Cavill, 2012). However, the process is associated with misconceptions and malpractices which may result in adverse health outcomes. In many societies, menstruation is surrounded by secrecy, myths, taboos and even stigma. Young girls experiencing this phenomenon are recognised

as polluted or filthy and may be excluded from many of their regular social functions including cooking, worshipping or getting into contact with certain religious objects or places. Therefore, these illusions and misconceptions frequently depict women and girls as inferior to males. (Kumar & Srivastava, 2011).

MHM issues often affect the health, dignity, self-esteem, and confidentiality of many adolescent girls and women across the globe (Senapathi & Kumar, 2018). The lack of clean MHM materials (absorbents), inadequate sexual maturity education, and lack of access to WASH facilities in schools (particularly those in rural areas) all contribute to girls' perceptions of the process as awful and uncomfortable. For some women and adolescents, the only option is to use inferior and substandard products such as old rags, clothes or other unhygienic materials as menstrual absorbents, which can have a lot of consequences on their reproductive health and wellbeing (Jayaraj & Sinha, 2020). Accordingly, some researches indicate that young adolescent girls stay out of school because of the fear of menstrual blood dripping and bad odour (Senapathi & Kumar, 2018). Available data also indicate that some 2.3 billion women across the world lack the ability to safely manage their menstrual sanitation (Lufadeju, 2018).

Despite the fact that these are issues of health concern, not much resources among developing countries have been channeled into finding out how these young girls' experience of menarche and puberty is like and how menstrual onset can have bearing on their daily lives and school attendance (Sommer, Ackatia-Armah, Connolly & Smiles, 2015). Information sharing in reproductive health is very key.

However, little is being done in this regard in the lower- and middle-income countries especially in Sab-Saharan Africa (Mutunda, 2013). In Ghana for instance, although highly linked to water, sanitation and hygiene promotion, menstrual hygiene has not been properly addressed by the relevant ministries and departments (Asimah et al., 2017). It is clear that they have not been considering the special interest of adolescent girls in providing WASH products and infrastructure to schools (Mutunda, 2013). According to a publication by graphiconline.com in 2017, about 7,332 out of the 20,738 public basic schools in the country do not have toilet facilities, while 6,922 do not have urinal facilities. Additionally, 11,985, representing 58 percent of the basic schools, do not have water facilities (graphic.com, December 18th, 2017).

Adam, Adom, and Bediako (2016) revealed that about 95 percent of girls in Ghana miss school because of menstruation. Statistics from the Ghana Statistical Service also show that one adolescent out of five feels excluded from education, social activity, and work during menstruation (Mohammed, Larsen-Reindorf & Awal, 2020). Central to the discussion on MHM among the lower- and middle-income countries is the fact that the failure to provide suitable opportunities for the management of menses does not only jeopardise the livelihood and development of women but also serves as a challenge to the attainment of the sustainable development goals (SDGs), especially SDGs 3, 4, 5, and 6 (Ameade & Majeed, 2015; Mutunda, 2013). These will be achieved if more support is rendered to adolescents and women during menstruation.

Although addressing the needs of menstruation girls has garnered more attention recently as a need for achieving the sustainable development goals by the year 2030, little academic study has been conducted on the severity of menstrual hygiene experiences among teenagers in Africa. In most of the literature across the continent, the focus is mostly on menstrual hygiene management and school attendance (Sommer et al., 2015). Some studies mostly in India and other sub-Saharan African countries have looked at MHM specifically focusing on cultural and social practices regarding menstruation among adolescent girls and how MHM interventions influence education and psychosocial outcomes for women and girls (Hennegan et al., 2016; Kumar & Srivastava, 2011; Sommer et al., 2016; Tegegne & Sisay, 2014; Vaughn, 2013).

In Ghana, for instance, not much academic research has gone into the area of menstruation. However, some articles have looked at menstruation and education experience of girls (Abanyie, Anang, & Boateng, 2016; Ameade & Garti, 2016; Ameade & Majeed, 2015; Blessing, 2016; Boakye-Yiadom, Aladago, Beweleyir, Mohammed, Salifu, & Mathias, 2018; Ghana Education Services, 2012; Sommer et al., 2015).

Common among the issues identified were those related to menstrual etiquette in menstrual waste disposal and its associated traditional beliefs (the belief of infertility if another person sees your blood or if a dog licks the blood, restriction on bathing, and eating of certain foods), as well as inadequate parent-child communication regarding menstruation. Additionally, adolescent girls' family history, social level, education, and religion all have a big impact on how they deal

with their periods. (Kgwara, 2016; Kumar & Srivastava, 2011, Sommer et al., 2015). That notwithstanding, the challenges of menstruation and MHM are so enormous that they pose a serious threat to the health, future, and independence of adolescents and women across the world. Among the challenges are; vaginal infection resulting from unhygienic menstrual absorbent materials, psycho-social effects associated with shame and disgust, effect on girls' school attendance, low productivity, poor social interaction for girls and poor environmental sanitation (Sumpter & Torondel, 2013)

This study is, therefore, intended to build on the existing literature by looking at menstrual hygiene management amongst adolescent girls in the Kassena Nankana East Municipality (KNEM). Specifically, the study sought to investigate the lived experience of adolescents in the management of menstrual flows, examine the role of WASH in menstrual management, investigate the challenges of menstrual management among adolescents and, finally, investigate how the management of menstrual flows influence adolescents' social interactions. It is clear that none of the literature under review has sought to measure the connection between menstrual hygiene management and adolescent's social interaction, a gap this study seeks to fill by identifying areas of focus for future researchers and areas of intervention for practitioners and policy makers.

Statement of the Problem

It has been established that the world has about 1.2 billion young people within the ages of 10-19 years in which nearly 70 percent are in the lower- and middle-income countries (Galli & Lalitpur, 2017). Out of this, 306 million between

the ages of 10-14 years are females (Sommer et al., 2013). These females by default are expected to menstruate every month. Despite being a normal biological process, menses is being meddled by socio-cultural perceptions and practices leading to information gap on healthy management of menses among adolescents (UNICEF, 2015). This has, therefore, generated undesirable outcomes and adverse reactions leading to poor academic performance and academic engagement as well as withdrawal from peers, teachers and school mates (Borja-Vega, Rop, Lutalo & Loughnan, 2018).

It has also been established from studies in lower-and middle-income countries that, some of the underlying causes of poor MHM originate from knowledge gap, poverty, social restrictions, inadequate water and sanitation facilities, religious beliefs and socio-cultural norms. Undeniably, access to sanitation and adequate information are critical in MHM particularly in the rural areas (Ibaishwa & Achakpa, 2016; Ndana, 2018; Tegegne & Sisay, 2014).

However, it is evident that MHM among adolescents in Ghana has not been given the needed attention among academic researchers, though it can adversely affect the development trajectories of many young people. For example, Ghana Statistical Service (2015) indicates that a significant number of schools in Ghana are without adequate water, sanitation and hygiene facilities which are key to MHM. In addition, it has been established by UNICEF (2016) that, a number of female adolescents in Ghana often miss schools because of menstrual issues. What is however not clear from the literature in Ghana and across other LMICs is whether

menstrual hygiene management has any implications on adolescents' social interaction.

For instance, Mohammed et al. (2018) observed that women and young girls in Fiji, Solomon Islands and Papua New Guinea sometimes feel embarrassed when excluded from attending church and other religious rites during menstruation. The authors also revealed that coming into contact with a menstruating girl or woman is regarded as a bad luck which can cause failure to hunt, fish, and play sports. Further to that, Galli (2017) also found that a significant number of women were disallowed to participate in social gathering and other functions during menstruation. More recently, there was a disturbing reportage by the British Broadcasting Corporation (2019) about a 14-year-old school girl in Kenya who committed suicide because her school teacher embarrassed her for menstrual leakage in class. It is therefore important to state that the seemingly lack of scholarly research in Ghana on MHM and its implications on adolescent social interaction makes this study very timely and important.



Research Questions

1. What are some of the lived experiences of adolescents' menstrual hygiene management?
2. How does the availability of WASH facilities impact menstrual management?
3. What are the challenges associated with the management of menstrual flows among adolescents?
4. How does the management of menses affect how adolescents interact with people?

Research Objectives

This study's primary goal is to examine how menstrual hygiene management practices affect adolescents' social interactions. The study specifically aims to:

1. Examine how adolescents control their menstrual flows from their own experiences.
2. Examine the role of WASH facilities in menstrual management.
3. Investigate the challenges of menstrual management among adolescents.
4. Understand how the management of menstrual flows influences adolescents' social interaction.

Significance of the Study

The issue of menstruation and its management has been of global concern because of its reflective effect on the welfare and future of adolescents and women.

It is associated with many barriers that undermine the dignity and well-being of girls and women. These barriers range from the unavailability of sanitary facilities, social support for women and girls, absence of water supply, non-gendered friendly facilities, gender-based violence and stigma regarding menstruation (World Vision International, 2016). Currently, taboos and cultural practices surrounding menstruation affect women and girls negatively and hence reinforces gender inequalities and exclusion (House et al., 2012).

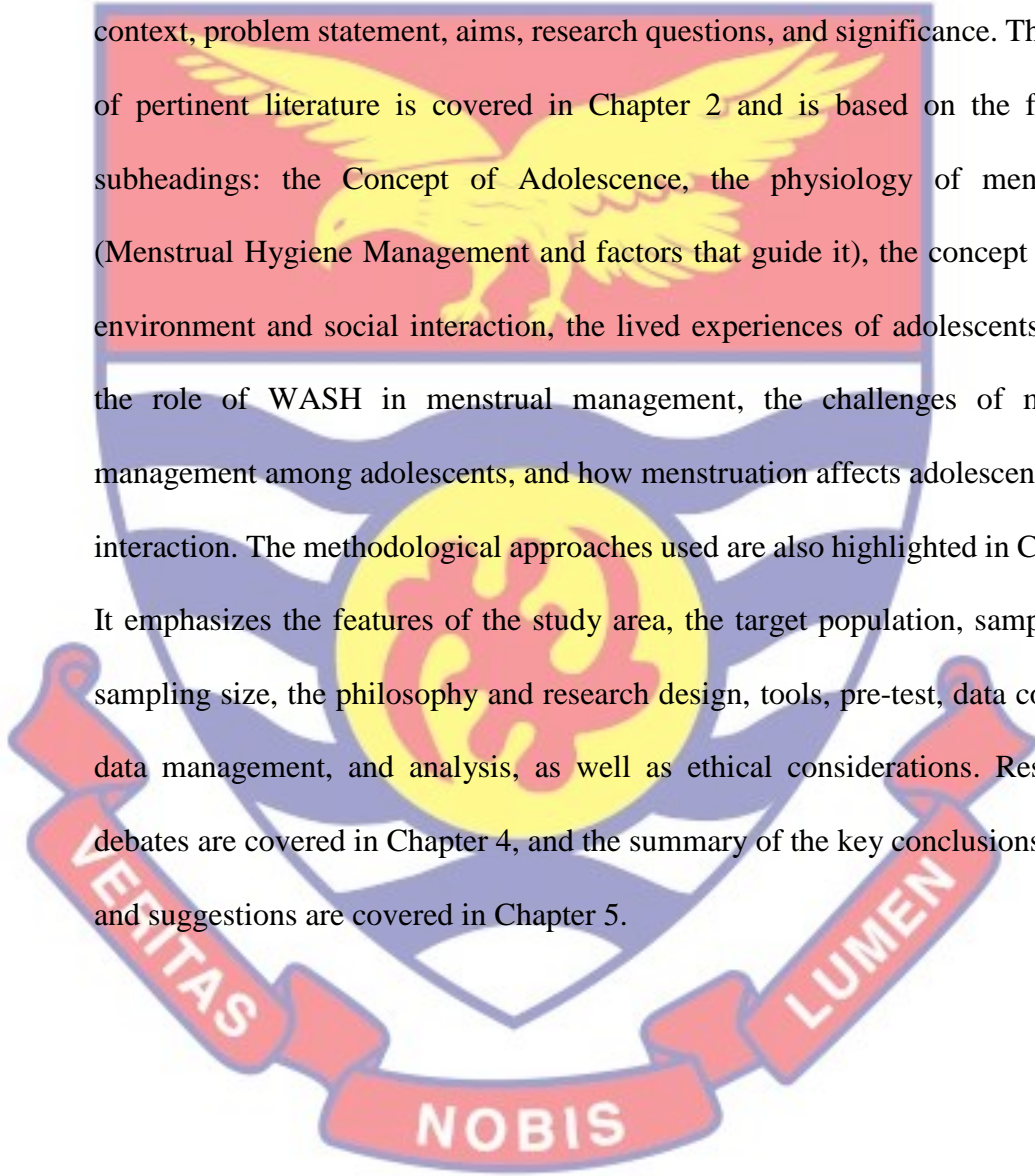
The Upper East Region is one of the poorest regions in the country, with the lowest potable water supply, the highest in open defecation rates and the lowest with WASH facilities in schools (Ghana Statistical Service (GSS), 2010a, 2010b, 2018). Evidence from some researches point to the fact that the KNEM is no exception, thereby raising questions about the status of menstrual hygiene management in the municipality (Abanyie, Anang, & Boateng, 2016; Issahaku, Ampadu, & Braimah, 2017).

Despite these empirical facts, studies on MHM and adolescents' social interaction in the Municipality are limited, thereby creating a situation of uncertainty and widespread ignorance among adolescents. This study, therefore, seeks to investigate MHM practices and their impact on adolescents' social interaction. The findings from this study hopefully, will contribute greatly to the formulation and strengthening of the already existing WASH policies in the country in order to ensure a level playing ground for both men and women. It is anticipated that this discovery would significantly advance our understanding of menstruation and how to control it in Ghana. Finally, it is anticipated that the study's findings

will be used as a reference work by academics, researchers, and students who are interested in MHM-related concerns.

Organisation of the Study

In this study, there are five chapters. Chapter One introduces the study's context, problem statement, aims, research questions, and significance. The review of pertinent literature is covered in Chapter 2 and is based on the following subheadings: the Concept of Adolescence, the physiology of menstruation (Menstrual Hygiene Management and factors that guide it), the concept of social environment and social interaction, the lived experiences of adolescents' MHM, the role of WASH in menstrual management, the challenges of menstrual management among adolescents, and how menstruation affects adolescents' social interaction. The methodological approaches used are also highlighted in Chapter 3. It emphasizes the features of the study area, the target population, sampling and sampling size, the philosophy and research design, tools, pre-test, data collection, data management, and analysis, as well as ethical considerations. Results and debates are covered in Chapter 4, and the summary of the key conclusions, advice, and suggestions are covered in Chapter 5.



CHAPTER TWO

LITERATURE REVIEW

This chapter provides a review of the related literature on Menstrual Hygiene Management (MHM) practices and adolescents' social interactions. It addresses topics like the idea of adolescence, the biology of menstruation, how to manage menstrual hygiene, what influences menstrual management, the consequences of poor menstrual hygiene management, the idea of social environment and social interaction, and how adolescents manage their menstrual flows in real-world situations. It further examines the role of WASH in menstrual management, the challenges of menstrual management among adolescents and how menstrual management can influence adolescents' social interaction. The chapter is divided into two parts: empirical review and theoretical review/framework.

Empirical Review

Adolescence as a Concept

One of the most well-known stages in human development, adolescence, is frequently held up as the essence of human existence. The deeper understanding of adolescence and how it evolves is discussed by a number of psychologists and sociologists (Curtis, 2015; Demos & Demos, 1969; Lackey & Edwards, 2017). Its effects are endlessly deliberated and felt within the social, family and environmental space. Despite this, it is interesting to realise that all of this has a fairly short history as the concept did not exist until the last decades of the nineteenth century (Demos & Demos, 1969). The word, adolescence, emerged in the 15th century from the Latin word “adolescere” meaning “to grow up or to grow

into maturity.” The original definition of adolescence as indicated by the Oxford English Dictionary in 1482, sees adolescence as a period between childhood and adulthood that extended between ages 14 and 25 years in males and 12 and 21 years in females (Curtis, 2015).

However, the discovery of adolescence is believed to have been accredited to the first President of the American Psychological Association, Stanley Hall, in 1904 (Boston Youth Arts Evaluation Project [BYAEP]). In his book titled, *Adolescence*, Hall defined adolescence as a time of getting rid of one’s beast-like urges as the individual is surrounded in a period of “storm and stress” (Lerner & Israeloff, 2005 as cited in [BYAEP]). This storm and stress view was based on the idea that adolescence is a difficult stage of life to individuals as well as the people around them (Arnett, 2000). Apparently, Arnett identified three elements that described the storm and stress theory of adolescence. The first one has to do with conflict with parents (where young people may defy adult authority), the second one concerns mood disruptions (where they may turn to be unpredictable in their mood), and the third has to do with risky behaviour which may be irresponsible and sometimes antisocial (Arnett, 2000).

As indicated by Curtis (2015), adolescence is recognised as a time of transformation in a young person’s life, or as the transitional stage between childhood and adulthood. Various schools of thought have identified several definitions of adolescence in this contemporary time and one of such is the World Health Organization (WHO). WHO (2017) defines adolescence as “the period in human growth and development that occurs after childhood and before adulthood,

from ages 10-19 years”. Lackey and Edwards (2017) define adolescence as “the onset of physiologically normal puberty, and ends when an adult’s identity and behaviour are accepted”, whereas Curtis (2015) views it as people between the ages 10 to 25 years.

Undeniably, the discourse across the concept of adolescence is generally with respect to age, physiological development, cognitive development and even social development. The diversity in the conceptualisation of adolescence has led to a divided approach to researching on adolescence or young people across disciplines, cultures, and among adult allies. Consequently, defining adolescence alone is not sufficient to execute best practices when dealing with young people (Lackey & Edwards, 2017).

Physiology of Menstruation

Menstruation is a technical term that describes the physiological dynamics that occur within the female system. It simply refers to the act of getting one’s period. Getting menses is a developmental process that the female must undergo. During the adolescent period, one of the greatest transformations that surface in the female is the onset of menarche (Khan, 2019). Menarche is the first menstrual experience of an adolescent girl which usually occurs between the ages of 11 and 12 years (Somani, et al., 2016). In contrast to Somani et al’s (2016) assertion, Adias et al., (2019), indicate that menarche occurs between the ages 12 and 15 years. Like the management, the first menstrual flow of the young adolescent is dependent on economic, health, and environmental factors. It is expected that after the first

menses, the female will menstruate every month approximately on the 28th day until menopause (that is, 45-55 years) (Adias et al., 2019).

Technically, menstruation is the shedding of the innermost part of the uterus commonly referred to as the endometrium lining. This usually occurs when ovulation is not complemented by fertilisation. Physiologically, every month the uterus prepares itself in readiness for pregnancy by adjusting the muscle layers and the blood vessels. Therefore, if pregnancy does not occur, it has to degenerate with an accompanying bleeding to pave way for the next physiological activities (Adias et al., 2019; Khan, 2019; Lacroix & Langaker, 2019). For some adolescents and women, monthly bleeding is a normal regular process that is expected to last for 3-7 days on average (Lacroix & Langaker, 2019).

Menstrual Hygiene Management

In recent times, there has been a high awareness of the fact that menstrual hygiene management practices have an impact on the health, education and psychosocial outcome of women and adolescent girls in the lower-and middle-income countries (Hennegan et al., 2016). It is evident that most women in these countries have serious challenges in the safe management of their menstruation. This results in behavioural restrictions, reduced school-attendance, or loss of dignity (Hennegan et al., 2016). Adolescents, however, are the most affected in this regard, as socio-cultural practices in these countries even make matters worse because of the secret nature of it (Karki & Khadka, 2019). Menstruation, according to Fraser, (as cited in Tellier & Hyttel 2018), is the flow of blood and tissue lining the uterus through the vagina of a woman in every 28 days. Menstruation plays a

vital role in the physiological maturation of the female. However, to ensure that the female is in a healthy state of being, this period must be backed by hygienic practices (Ndana, 2018).

The term, menstrual hygiene, refers to the various steps and practices that a woman is expected to undertake during menstrual periods in order to remain healthy (Karki & Khadka, 2019). According to Tjon Ten as cited in Mimche, Yongsu, Tamekeng & Noumeni, (2017), menstrual hygiene involves practices or behaviours that seek to promote health in order to avoid infections during menstruation. They further postulated menstrual hygiene management as the totality of approaches applied by women during their periods. In other words, it refers to the manner in which women maintain their hygiene during monthly bleedings (Mimche et al., 2017).

Managing menstruation involves a multidimensional approach that aims at ensuring that the dignity of women and girls is preserved in order to minimise marginalisation (Tellier & Hyttel, 2018). Effective management of menstruation remains a source of good health to adolescents and, therefore, preventing them against possible infections such as; urinary tract, pelvic inflammatory diseases and vaginal thrush. It further serves as a protection against bad smell and public ridicule emanating from soiled garments (Torondel, Sinha, Mohanty, Swain, Sahoo, Panda, & Das, 2018).

Consequently, in some regions of Africa and other LMICs, poor menstrual management has been one of the major catalysts for school absenteeism/dropout among adolescents (Ndande, 2018). The relationship between menstruation and

school attendance is so evident that girls miss between one to four days' school during monthly periods (Claire, 2016). This comes as a result of the inability of these girls to properly manage their menstrual bleeding. According to the requirement by the Universal Declaration on Human Rights and the Convention on the Elimination of all Forms of Discrimination against Women (General Assembly, 1948 and 1979 respectively) and the International Covenant on Economic, Social, and Cultural Rights (1966), it is evident that poor MHM affects the rights and dignity, privacy, health, gender equality, education and work, as well as the right to water and sanitation of girls (Hennegan, 2017).

Drawing from this and other evidence provided above, it should be made clear that for an adolescent girl to be able to successfully manage her menstruation, there is the need for her to have access to some basic facilities. Such facilities include, access to soap and water for washing the body and absorbents, water and sanitation facilities, adequate information about menstruation, adequate education and awareness on the use of physical facilities, and the availability of good nutrition to replace blood loss (Hennegan, 2017; Ndande, 2018).

Factors that Guide Menstrual Management

Menstrual management in recent times is regarded as a public health concern that requires basic knowledge and facilities to ensure its effectiveness. It further raises human rights issues since every individual is by law expected to undertake his or her activities in a peaceful and harmonious manner without any discrimination or intimidation. This phenomenon continues to pose a serious

challenge to many adolescent girls, especially those found in low-and middle-income countries (Mutunda, Lahme & Stern., 2017).

According to UNICEF reports, in 2019, a considerable number of adolescent girls in the low-and middle-income countries find it challenging to manage their menses and its associated hygiene in a manner that is desirable. This difficulty, however, alters adolescents' thinking about themselves and their feeling on how the society sees them (Mutunda, Lahme & Stern., 2017). The attitude and perception of adolescents toward menstruation is triggered by the way in which they manage their menstrual periods. Interestingly, menstruation is usually managed differently by adolescents based on the available information and resources at their disposal. For an adolescent girl to successfully manage her menstrual flows, the following factors have to be considered (McMahon, Winch, Caruso, Obure, Ogutu, Ochari, & Rheingans. 2011).

Information and Guidance

Adolescent girls, especially in developing countries, lack accurate health information at a time they need it to prepare them both mentally and physically to enable them manage their periods appropriately (Mutunda Lahme & Stern., 2017). A study by Shallo, Willi, and Abubekar (2018), in Ethiopia, highlighted the need for a comprehensive sexual and reproductive health education for adolescents at all levels. The purpose of it is to avoid misconceptions, build girls' confidence and self-esteem and prepare them emotionally and psychologically so as to reduce tension and humiliation during menstrual debut. Reproductive and sex education will empower girls with the necessary information they will need during the

adolescent period, especially on matters relating to menstruation and its management (Mutunda et al., 2017; Shallo et al., 2018).

However, adolescent girls' lives are significantly impacted by the lack of menstrual instruction in schools, particularly in underdeveloped nations. In these areas, most teachers are not ready to discuss or teach topics that relate to reproductive health, and this has a negative implication for girls. Furthermore, the findings from school girls in the rural and urban sectors show that most girls receive little to no pre-menstrual information. The report further indicates that most of the times they seek information from parents, peers, sisters, and teachers, which is often inadequate and misleading (Vaughn, 2013).

Culture and Traditional Practices and Beliefs

In most low-and middle-income countries, menstrual practices are usually based on cultural prejudices and misconceptions. For instance, Sommer, who was referenced by Mutunda et al. in 2017, highlighted that social pressure is a major factor in the decision to marry females off young when they hit menarche. This consequently results in school dropout. Similar findings were reported by Mohammed et al. (2018), who noted that women and young girls in Papua New Guinea, the Solomon Islands, and Fiji are subjected to stringent laws of seclusion that forbid them from leaving their homes unattended, touching certain foods, or interacting with others.

Also, the impact of culture and traditional practices, again manifested in a study conducted in Malawi by Vaughn (2013), where menstruation girls were separated from their immediate family, bath rooms, and friends. These beliefs and

practices often lead girls to feel isolated and stigmatised and, therefore, discourage them from partaking in school and other social events during menstrual periods (Muntunda et al., 2017). In a similar study in Ghana, it was realised that many girls were unwilling to inform their parents about their menstrual history because of fear of being pushed into early marriage or child birth (Sullivan, 2013). In some parts of northern Ghana, children are betrothed to men during birth; therefore, announcing their menstrual debut is a clear sign that they are fully mature to begin child birth (Rheinlander et al., 2019).

Poverty/Family Socioeconomic Status

Family socioeconomic status can play a significant role on girls' menstrual hygiene management practices. This is because adolescents as at the time of menarche are still under the care of their immediate family and the family's economic status does play a role in the type of materials that the girls will use during menstrual flows. Again, the use of different menstrual product may also be associated with the geographical location of the adolescent (Muntunda et al., 2017). Product commonly used by adolescent girls' range from sanitary towels to rags and ashes or back of trees (Muntunda et al., 2017). Because of financial constraints, girls from rural areas may not be able to afford sanitary pads. In a study conducted by Vaughn (2017) on a review of menstruation hygiene management among school girls in sub-Saharan African countries, it was found that the cost of a pack of sanitary pad ranges from \$1 to \$2. Most girls use between two to three pads a day depending on the flow. And on average, menstruation is expected to last 6-7 days. However, when taking into account the poverty thresholds of \$1.9, \$3.20, and \$5.5

per day, only an estimated 180 million, 280 million, and 250 million individuals, respectively, in the lower, low-, and middle-income countries, fall below it (Sumner, Hoy, & Ortiz-Juarez, 2020)

In effect, with the estimate of 21 pads on average for menstruating girls in a month, it is evident that most households in low- and middle-income countries might not be able to afford sanitary pads for their girls. Therefore, the likelihood of them resorting to the use of unhygienic materials to manage their menses becomes high (Muntunda et al., 2017; Shallo et al., 2019; Vaughn, 2017). In a study by Oster as cited in Motiva (2011), it was found that in Nepal, 98 percent of girls that were sampled during the study use old cloth to collect their menstrual blood. Further to that, it was again found that most adolescents in the rural areas use old cloths and newspapers to collect blood due to their inability to afford sanitary pads (Motiva, 2011). As stated by Shallo et al. (2019), financial constraints may compel some adolescents to resort to transactional sex in order to get money to purchase sanitary pads.

Availability of Infrastructure

The provision of toilets and wash rooms for adolescents during menstrual periods was also found to be one of the factors that affect menstrual management in LMICs (Shallo et al., 2019). The infrastructure at schools in low- and middle-income countries is dreadfully inadequate, making it challenging for the majority of adolescent females to attend class during menstrual periods. Due to a shortage of hygienic facilities, girls find it challenging to find convenient areas to either replace their soiled materials or dispose of their used ones (Shallo et al., 2019).

According to Muntunda et al. (2017), in Tanzania, many of the girls' toilet facilities were user unfriendly and made most menstruating girls fear that they might stain their dresses when using them. In Ghana, for instance, research conducted by UNICEF in 2017 in Zabzugu in the Northern Region and North Dayi in the Volta Region found that the average girl to latrine ratio in north Dayi was 63:1, and in Zabzugu it was 70:1. It was further reported that only 50 percent of schools had lockable clean, working latrines for girls, only 33 percent of schools had hand washing facilities, while no school had any anal cleaning materials for girls (UNICEF, 2017). These serve as barriers to girls' school attendance during menstrual periods.

Gender Discrimination

Gender discrimination associated with sexist sociocultural beliefs and gender-unfriendly policy environments pose further barriers to girls during menstrual periods. The embarrassment surrounding menstruation is somewhat a universal phenomenon, found in most cultures of the world and with many associated code words, euphemisms and phrases used as linguistic substitutes. Boys typically make fun of girls during their periods when they are in the known, according to the results of a study by Motiva (2011) in Uganda. Studies from both sub-Saharan Africa and Asia have indicated that the lack of understanding of menstruating girls' needs can result in bullying menstruating girls by male schoolmates and male teachers (Muntunda et al., 2017).

Effects of Poor Menstrual Hygiene Management on Adolescents

Menses has become an abattoir on the neck of many adolescent girls globally because of poor management. This, however, appears to be more profound in the developing countries especially those in LMICs. Most of these young girls are saddled with access to clean and affordable menstrual materials, inadequate facilities to change, clean and dispose of absorbents, unavailability of soap and water as well as privacy (Hennegan et al., 2016). Although it has been neglected for some years back, it has now become a public health issue where government and other stakeholders are raising concern about the gender implications on its management (Muntunda et al., 2017). A number of qualitative researches have recognised the difficulties girls face in managing their menses. They indicated that poor menstrual management has implications on girls, which affects their health, education and psychosocial wellbeing (Miuro, Rutakumwa, Nakiyingi-Miuro, Nakuya, Musoke, Namakula, & Weiss, 2018).

In a research that was conducted by UNICEF, Bhutan Country Office on menstrual hygiene management of adolescent school girls and nuns, they categorised the effects of menstrual hygiene management on adolescents into three broad headings: physical, emotional and social impacts (UNICEF, 2018).

Physical Effects

The physical effects of menstrual management have consequences on girls' physical body function. This may result from pains, fatigue and or infections leading to obstruction of one's daily activities. This was manifested in a survey conducted by UNICEF in 2018 in Bhutan, where 53.6 percent of the respondents

complained of being tired during menstrual periods. Furthermore, Hennegan (2016) also identified lower abdominal pains and discomforts, irritation and urogenital symptoms and infections as some of the physical effects of menstruation. This situation is, however, heightened by the type of menstrual management practices adopted by women and adolescents.

For instance, in the global burden of disease, reproductive tract infection (RTI) has been of concern in public health especially in developing countries (Rabiu, et al., 2010). A portion of that is ascribed to poor MHM, rather than from sexually transmitted infections. RTIs that occur as a result of poor menstrual management may include bacterial vaginosis and vulvovaginal candidiasis. These infections have implications for the physical wellbeing of the adolescent (Emmanuel & Yawson, 2019; Sumpter & Torondel, 2013).

Emotional Effects

It is intriguing to know that many adolescents in developing countries reach puberty with no prior idea about what it is all about. This lack of foresight about puberty enables them to experience menarche with some kind of misconceptions and, therefore, are never ready to cope with it (Chandra-Mouli & Patel, 2017). Also, parents and people that matter in the life of these adolescents are sometimes themselves not knowledgeable about menstruation and menstrual management (Mohammed et al., 2020). This, therefore, makes them uncomfortable in discussing menstrual matters with these adolescents. In recent times, there has been an international advocacy about the wellbeing of women and girls, and how they can be empowered through the sustainable development goals (Myamba, 2010).

Apparently, the lack of information about their own bodies and what they expect of themselves makes them vulnerable and can be subjected to a lot of dehumanised treatment in the society during menses (Chandra-Mouli & Patel, 2017; Setyowati & Ungsianik, 2019).

Numerous studies in low- and middle-income nations have discovered that adolescent menstruation has largely negative impacts for those who have no prior knowledge, but good ones for those who have (Dessie & Tesfaye, 2017; Chandra-Mouli & Patel, 2017). For instance, a study by Chandra-Mouli and Patel (2017) found that many girls describe their first menstrual experience as shocking and that makes them cry at the sight of the blood. Again, research conducted by UNICEF (2018) found that 69.8 percent of the respondents admitted feeling sad during menstrual periods compared to when their period was over. Socio-cultural practices and restrictions, however, worsen the situation as negative attitudes towards menstruating girls make them feel embarrassed and anxious (Setyowati & Ungsianik, 2019).

In a research conducted by Nanda et al. (2016), girls revealed that the major emotional challenge that comes with menstruation was stigma. Accordingly, this was what one girl said: “When you are in your period and they sent you, you are not always comfortable because as you walk people look at you and the feeling is that, it is because you smell that is why they are looking at you. So most often it’s not good”. This is a clear manifestation of the emotional effects of menstruation that girls can go through during their menses.

Social Effects

Apart from emotional effects of menstruation, there are also excruciating effects of socio-cultural practices on menstruating adolescents. The practices comprise discriminatory attitudes, beliefs, social norms and taboos regarding menstruation (Mohammed et al., 2018). However, these practices are not universal but vary between countries and across cultures. In some cultures, the mere fact that the girl is in menarche is a clear manifestation that she is ready to start childbearing. And since menarche is directly linked to sex, it makes it so difficult for it to be openly spoken about. This, however, adds up to the non-availability of information on menstrual issues. Consequently, it leaves these young girls with no option than to hunt for information through every available means. This may lead them eventuallys to misinformation about menstruation. The few who are able to master the courage to seek information on menstruation rely on their mothers (Hennegan et al., 2016; Sumpter & Torondel, 2013). During menarche, the social effects of unhealthy menstrual management may include denial from daily activities such as not fetching water, cooking, cleaning, attending religious ceremonies, socialising or even not being allowed to sleep in their own homes (Sumpter & Torondel, 2013).

Research carried out by Garg, Sharma and Sahay (2001) found that menstruation is connected with taboos, restriction on work, food and bathing. According to their findings, the greatest taboo that was identified is abstinence from sexual intercourse. For them, the heat that the body emits during menstruation can cause irritation in the private part and leads to a white and yellowish urine. The study further realised that women believe that sexual intercourse during menstrual

flow can cause the blood to clot, leading to poison and spreading of tuberculosis in women (Garg et al., 2001).

Also, in another qualitative study by Mason, Nyothach, et al., (2013), in Kenya, participants repeatedly upheld the secrecy nature of menstruation and the fact that it should be kept secret. They stated emphatically that blood is secret and should not be disclosed to anyone especially when men are involved (Mason et al., 2013). More so, Kumar and Srivastava (2011) ascertained this that menstruation comes with uncountable myths and mysteries, with the most social and cultural restriction being not entering the Puja room (Prayer house), the kitchen, looking into the mirror, and not attending to the guests.

In spite of the above, another qualitative research on the attitude, beliefs and sociocultural restrictions during menstruation conducted in Papua New Guinea, Solomon Islands, and Fiji discovered the belief that menstrual blood is dirty and that menstruating girls and women carry bad luck to men when they come into contact with them. The social restrictions in this research were more pervasive as some adolescents and women reported being traumatised based on the fact that they are denied the opportunity to participate in religious services. Even when they are given the opportunity, they are made to sit at the back in order not to come into contact with anybody. Furthermore, in the same study, a woman from Solomon Islands reported that one has to leave her village during menstrual bleedings to stay in a lone place where she might not have the opportunity to come close to anyone especially men. Another woman from Papua New Guinea reported that, they are supposed to stay at home during periods to avoid the unavoidable contact with

people at the work place. Also, in Fijii, women avoided the collection of fruits from trees, as that can cause the death of the plant (Mohammad et al., 2018).

Consequently, social restriction or exclusion during menstrual periods is not only limited to the communities, but extends to the school environment. Several studies reported that female students stayed out from school in order to avoid the embarrassment that results from not properly managed menstruation (UNICEF, 2016, 2018).

The Concepts of Social Environment and Social Interaction and their Effect on Adolescents during Menstruation

Social Environment

The influence of social environment in our current public health dispensation cannot be underestimated. It is a vital contributor to the health and wellbeing of a given population in every society. Despite its role in public health, researchers still find it challenging to come out with a comprehensive definition of what a social environment is. Nonetheless, Barnett and Casper (2001) conceptualised social environment as the immediate physical surroundings, social relationships, and cultural milieus within which defined groups of people function and interact. They also see social environment as “the immediate physical and social setting in which people live or in which something happens or develops”. It includes the culture the individual was educated or lives in, and the people and institutions with whom they interact. The interaction may be in person or through communication media, even anonymous or one-way, and may not imply equality of social status.

Therefore, social environment is a broader concept than that of social class or social circle. In line with this, in conceptualising social environment, it will be prudent to consider its structures. The social environmental structures comprise; the built infrastructure (industrial and occupational structures), labour markets (social and economic processes), wealth (social, human, and health services), power relations (governance systems), race relations, social inequality, cultural practices, the arts, religious institutions and practices and beliefs within a given place and or a community (Barnett et al., 2001: National Research Council & Committee on Population, 2013).

However, factors related to safety, violence, and social disorder in general, as well as more specific elements related to the kind, quality, and stability of social connections, including social participation, sociocultural practises and belief systems, social cohesion, social capital, and the collective efficacy of the neighborhood, are very important to people's health and wellbeing, especially adolescents' development. Consequently, the most significant component of the social environmental space is effective participation and integration. This contributes to the development and maintenance of people's physical, mental, and emotional health and well-being in society (National Research Council & Committee on Population, 2013). Premised on this, it is important to point out that, menstruating adolescents in LMICs lack the social environment that is supportive, participatory and integrating to enable them to manage their menses successfully (Mohammed et al., 2020). Gender discrimination, and cultural beliefs and

perceptions regarding menstrual management do not provide a safe environment for adolescents to effectively manage their menstrual flow.

Social Interaction

Social interaction has become the most significant player in our everyday life. Its usefulness, in both the human and non-human species, cannot be taken for granted. It is the basis upon which human relationships are built. As stated by Farooq (2014), it remains the physiology behind the entire social order where social processes, groups, and functions are embedded. Interaction, according to sociologists is the mutual relationships that exist between two individuals or groups. Several definitions have been given by various sociologists and one of such is the one by Gillin and Gillin (1948). They defined social interaction as the mutual or reciprocal influence, resulting in the modification of behaviour, exerted through social contacts and communication which, in turn, are established by inter-stimulation and response. According to Erving Goffman, social interaction is the process by which we act and react to those around us. In short, it refers to the behaviour we put forward to one another and the feedback we get (Argyle, 2017; Farooq, 2014; Monda, n.d.).

Juxtaposing from these definitions, one cannot deny the fact that adolescents are social beings and, therefore, the adolescent period is built through a lot of social relationships/interactions. However, it is a fact that, their ability to build these relationships is premised on sound and effective menstrual management practices. The social environment has both positive and negative implications on how adolescents can effectively manage menstruation. For instance, in an open

environment, adolescents can freely talk about their menstrual issues without any fear of being stigmatised. Here, structures are put in place to ensure that adolescents are given all the necessary information and the needed sanitary facilities they will require during menstruation. Hence, a positive image is built amongst them which fosters good social interaction and relationships. The lack of facilities and information on proper management of menstrual periods makes it difficult for adolescents to properly manage their menses. This consequently makes them shy away from interacting with people during their menses (Belayneh & Mekuriaw, 2019).

In their study of adolescent girls' views and practises around menstrual hygiene, Santina et al. (2013) found that 89.5 percent of the 389 participants stated that their social life had been impacted by menstruation. This implies that their routine social engagements or house-hold chores are brought to a halt during monthly periods (Santina et al., 2013). Building on this, Burnet Institute et al., (2015), further buttress the argument that there is a direct relationship between menstruation and girls' social activities. Accordingly, 11 percent of adolescents in their findings admitted that menses significantly restricted their social activities, while 8 percent reported it affected their relationship with family and one in 10 adolescents said it affected their relationship with friends.

Water, Sanitation, and Hygiene (WASH) Facilities' Relevance to Menstrual Management

Water sanitation and hygiene facilities remain parallel to this conversation on MHM and so cannot be neglected. However, a considerable body of knowledge

indicates that these are often neglected in our planning in many LMICs. Public schools in these countries are always the highest hit in this regard, thereby making the lives of young menstruating girls unbearable (Sinden, Sahin, & Francois, 2015). As indicated earlier, menstruation and its management are already ascribed to negativity and, hence, the lack of WASH facilities further worsens the situation (Kuhlmann, Bergquist, Danjoint, & Wall, 2019). Studies across LMICs point to the fact that irregular school attendance and for that matter school absenteeism amongst adolescent girls in developing countries occur because of lack of WASH facilities in school to support them during menstrual periods (Mahon & Fernandes, 2010).

UNICEF (2015), in their study to understand the menstrual hygiene management practices as well as the determinants and impact among in-school adolescent girls in Indonesia, found that most of the schools in this country did not have adequate WASH facilities. According to the reports, toilet facilities were insufficient, unavailable, small, unclean and smelly, lack privacy and inaccessible to girls with disabilities. There was no or a limited supply of clean water, no soap or tissues for washing hands after using the facility, and no facilities to dispose of waste products. These, however, compelled most menstruating female adolescents to seek either for permission to go home to change their soiled pads or decide not to attend school at all the period.

Although the provision of adequate WASH facilities in schools is essential for girls' school retention and low absenteeism, the quality of these facilities also plays a role in making sure this is achieved. This was brought to bear in a study in Zambia by Chinyama et al. (2019). In their mission to ascertain the knowledge,

experiences and challenges faced by school girls, Chinyama et al. found that majority of the selected schools had well-constructed toilet facilities. However, they did not provide water and soap for hand washing. Meanwhile, some girls also complained that the toilet facilities were very dirty, making them an eye-saw and uncomfortable to use. This, they said, compelled some of them to avoid the use of the toilet facilities. Others also decided not to change their soaked sanitary napkins until they closed from school or may even abandon the class and go home. Consequently, those who chose to stay until closing time may not be comfortable or concentrate effectively during lessons. In addition, those with heavy bleeding may end up embarrassing themselves, as blood may leak if sanitary napkins over-soaked (Chinyama et al., 2019). Mention can also be made that, the lack of WASH facilities does not only affect menstruating girls, but increases the vulnerability of women generally in their attempt to practise open defecation (Tull, 2019).

In Ghana, for instance, a number of scholarly reports have also confirmed the fact that majority of the schools in the country, especially in the rural areas, either lack or do not have adequate WASH facilities (UNICEF, 2017). In the light of that, menstruation is regarded as a major obstacle to school attendance for adolescent girls in Ghana due to the absence of WASH facilities to support them during schooling hours (Kumbeni, Ziba, Apenkwa, & Otupiri, 2021). This, has led to school absenteeism and deserting of classes among girls. Accordingly, girls specified they could not stay in schools because the toilet facilities were not hygienic. Further to that, although not oblivious of the fact that they need to frequently bath during periods, their school environments made no provision for

that. According to several studies (Abanyie et al., 2016; Acheampong et al., 2018; Asimah et al., 2017; Blessing, 2016; Kumbeni et al., 2021; Rheinländer et al., 2019), their main attention during school hours is to predict when school will end so they may go home and change.

To reaffirm this, a report on the state of WASH in Ghana's schools, carried out by Addai et al. (2009) to measure the Water and Sanitation Sector Performance, found that only 48 percent of basic schools in Ghana have toilet facilities. The study also found that, 63.5 percent of them had water facilities attached to their school. These findings emphasise the extent to which the situation of WASH in public schools in Ghana is very daunting. The inability to meet this demand has created a wide gap in school attendance between males and females. It is an undeniable fact that the access to basic facilities for menstrual hygiene management is fundamentally necessary for women's/adolescents' health, safety, and dignity and, therefore, must be critically re-examined (WHO, 2018).

The Challenges of Menstrual Management among Adolescents

Menstrual commencement in the developing countries is set to be challenging to adolescents, simply because majority of them lacked the needed resources to enable them to effectively manage menses either at home, in school, or in the public place. These may be financial, facilities or even getting the right knowledge to enable them to handle menstruation in the most acceptable manner (McCammon, Bansal, Hebert, Yan, Menendez, & Gilliam, 2020). This has resulted in high levels of school dropout among adolescent girls in most of these countries.

This review on the challenges adolescents face during menstruation has been categorised into three thematic areas: personal, societal and institutional.

Personal Level Challenges

At the personal level, most adolescent girls face a lot of challenges in their menstrual management in several forms. These challenges range from the physiological changes that result in pains during bleeding, lack of financial support to buy sanitary materials and soap for washing of cloths during menstruation, and the absence or inadequate facilities to meet their privacy demands. The high poverty levels in most LMICs make access to safe and hygienic menstrual absorbent materials a significant challenge. Most families from low socio-economic backgrounds can hardly provide for themselves, not to talk about providing sanitary support to girls in menses (Kumbeni, Otupiri, & Ziba, 2020). However, despite the endemic poverty in developing countries, the lack of adequate knowledge and information on puberty and its ensuing effects also worsen the situation of girls (McCammon et al., 2020).

For instance, McCammon et al. (2020), in their study on exploring young women's menstruation-related challenges in Uttar Pradesh, India, found that most young girls did not have the needed knowledge and information about menarche. They only begin to understand what it was, after they had experienced it. But for those that had the knowledge, the information provided them was also inaccurate. It was reported that these challenges resulted in irregularities in school attendance for the school-going girl. In another study, Kumbeni et al. (2020) found that counseling girls on puberty and the supply of sanitary materials will improve their

knowledge and, hence minimise the effects on school attendance. They further identified that discussing menstrual hygiene issues at school improves girls' confidence in their menstrual hygiene management level and practice.

Institutional Level

Many school environments do not have sanitary facilities. This creates a serious challenge on menstruating girls, as they cannot comfortably replace their sanitary materials while at school. In addition, in little or non-availability of sanitary facilities, both teachers and students make it so embarrassing for menstruating girls while in school because of the continuous stigmatisation. There is no privacy, as both boys and girls use the same wash rooms (McCammon et al., 2020). Sex education, which is expected to be taught in schools, is non-existent as the curricula do not capture these aspects of learning. That makes it challenging for these adolescents to discover their true sexual identity. The lack of knowledge and education on adolescents' reproductive health and development makes it problematic for them to understand the physiological changes in their body and how they can maintain good hygiene during that period (Kaur et al., 2018).

Societal Level

At the societal level, the stigma and discrimination towards the issue of menstruation pose a serious challenge to young girls. There are taboos and socio-cultural limitations on menstruating girls such as staying indoors, religious restrictions, and not being able to participate in social events (Kumbeni et al., 2020). Menstruating girls do not have the luxury to carry out their normal daily activities because of these limitations as was found by Kumar and Srivastava (2011) in their

study. These restrictions and stigmatisations make it very difficult for most young girls to cope during menstruation.

Menstruation and Adolescents' Social Interaction

Menstruation remains the greatest physiological event in the developmental landmark of the female adolescent. The care of the reproductive organ during menstruation is highly crucial to the maintenance of good health because of its vulnerability to infection. However, this is often very difficult to achieve in many developing countries because of the sociocultural belief prevalent in different societies (Mimche et al., 2017; Santina et al., 2013).

The culture of silence surrounding menstruation and its management does not give adolescents and women the opportunity to adopt acceptable hygienic practices during periods (Santina et al., 2013). Many traditional societies in LMICs see menstruation and its management as a filthy matter and, hence, affected women and adolescents are forced into isolation, suffer reduced movement and dietary restrictions and are excluded from participating in daily activities. Taboos and misconceptions have, therefore, made menstrual hygiene management practically challenging for women and adolescent girls, thereby reinforcing gender inequities and exclusion (House et al., 2013).

Being culturally considered as dirty and infectious, menstruating adolescents are more often denied the rights to freedom of movement and social participation. This assertion was manifested in a study by Mimche et al. (2017) in Niger to measure menstrual hygiene management experiences of nomadic and sedentary women. In this particular study, the findings showed that menstruating

women are very much restricted in three major categories: social, religious and dietary. On the social aspect, the study found that they were denied the opportunity to participate in any cultural or traditional ceremony or gathering, especially in the company of boys or men. Also, married women were restricted from having access to their matrimonial rooms. For this reason, they were compelled to stay with their mothers-in-law until their period was over. Sexual intercourse during this period was highly prohibited, as women were considered unclean and should, therefore, not come into contact with any clean person (men/boys).

Furthermore, in the religious dispensation, menstruating women were prevented from worshipping or coming into contact with any religious item or holy place. It was further realised that girls and menstruating women were restricted from taking certain foods or drink. Apparently, drinking cold water could cause blood clotting and thereby preventing the bad blood from coming out. These restrictions were based on the sociocultural belief that menstruation signifies impurity and as such, affected women and girls needed to be purified (Mimche et al., 2017).

Similarly, Mohamed et al. (2018), in their qualitative exploration of menstruation restrictions in Fiji, Solomon Islands and Papua New Guinea equally affirmed the widespread religious and social restrictions on menstruating girls. Unlike the Niger study where menstruating women and girls were prevented from social gatherings, religious worship, coming into contact with boys and men, sexual intercourse, and eating certain foods, in Papua New Guinea, aside from those mentioned, they were also prohibited from cooking food for men. This is because

food prepared by these women were considered dangerous to men and boys, resulting in sicknesses and early aging among them. These restrictions undeniably have some health and psychological consequences on the lives of menstruating women and girls. For instance, women, especially adolescent girls, are supported to boost up their nutritional intake during menstrual periods so as to augment the loss of iron and calcium in the body. However, these women, instead of being assisted, are rather restricted or denied the opportunity to eat a balanced meal, which indirectly can result in anaemia as they are losing blood without replacement (Mimche et al., 2017; Mohamed et al., 2018).

In Afghanistan, India, Iran, and Nepal, House et al. (2013) also discovered signs of social isolation and restriction among teenagers who are menstruation. In Afghanistan, 70 percent of the girls contacted indicated they were not expected to eat certain foods, 70 percent also said they do not play with colleagues and yet another 70 percent confirmed they were not allowed to either wash their bodies, shower, or bathe. The situation was not different in India. There, denying girls the opportunity to wash or bathe was more serious as 98 percent of them affirmed that. Further to this, in Nepal, restriction from not attending religious functions became dominant.

In addition to the above, a more devastating finding by Amatya et al. (2018) on the lived experience of menstruating adolescent girls in far-western Nepal was revealed. Menstruating adolescents were treated in an inhumane manner such as being banished from their homes into a lonely environment for 14 days. Apparently, this was done to deny them the possible chances of coming into physical contact

with certain people (specifically males), livestock, plants, kitchen items, and drinking water sources. In fact, the perception about menstrual impurity in the Nepalese culture is so saturated that a yearly festival is organised to cleanse menstruating women and girls to purify them for the sins they committed while menstruating.

Ghana, like many other countries in the sub-region, cannot be left out in these unhealthy treatments meted out to innocent menstruating women and young girls. A number of scholarly articles have equally found some unruly behaviour against menstruating adolescents. For instance, a study to unearth menstruation and education experiences of girls in Tanzania, Ghana, Cambodia, and Ethiopia found some common cultural beliefs and practices that were targeted at restricting adolescents in some aspects of their lives. Although in Ghana and Tanzania, they were largely restrictions related to menstrual waste disposal, the case of Ethiopia and Cambodia were more directed at adolescents' behaviour such as preventing them from bathing as they believe this would result in excessive bleeding. Additionally, in Ghana, Cambodia, and Ethiopia there were certain limits on the consumption of specific foods and beverages, such as fish and sour fruits (Sommer et al., 2015).

Similarly, Agyekum (2002), in his study on menstruation as a verbal taboo among the Akans of Ghana, revealed that menstruation among the Akan speaking people was seen as the most toxic and polluted substance that could even cause death. Based on that, menstruating women and adolescents were avoided from participating in many social and culturally-related activities, including cooking and

sexual intercourse. Due to the severity of the situation, it was highly prohibited for medicine men to come closer or walk a path that a menstruating woman had already passed. In addition, among some traditional societies in Ghana, it is a taboo for menstruating women/girls to cook, go near the shrine or pray in the church or mosque and worst still come into contact with a traditional stool or skin as they believe it could weaken the powers of that skin or stool (Acheampong et al., 2018; Alhassan, 2013; Asimah et al, 2017).

Theoretical Perspectives

In this section of the thesis, theories regarding adolescent girls' menstrual hygiene practises are reviewed. Two theories have been reviewed for this study. They are; the bio-psychosocial model by Engel (1977) and social theory of perception by Ichheiser (1966). However, it would be appropriate to state that, the conceptual framework used for the study does not relate to these theories reviewed.

Bio-psychosocial Model

The bio-psychosocial model, also known as the mind-body connection, is an extension of the biomedical model of medicine (Ritter & Lampkin, 2010). The model states that biological, psychological, and socio-cultural processes operate in a matrix of embedded and inseparably connected subsystems to make up the physical health and functions of a person (Engel, 1977; Suls, Krantz, & Williams, 2013). Biological factors include all genetic, physiological, and health related factors. Psychological factors include all internal perceptual, cognitive, emotional, and personality factors. Socio-cultural factors include interpersonal, societal, cultural, and ethnic factors (Cavanaugh & Blanchard-Fields, 2011).

In 1977, George Engel expressed the view of a bio-psychosocial model as a challenge to the traditional and dominant biomedical model of the time, in which biological or psychological processes were thought to be sufficient to explain disease and its treatment (Suls et al., 2013). The need for a new model was suggested because psychology researchers and clinicians realised that the traditional biomedical model fell short of adequately explaining many health outcomes (Suls et al., 2013). In proposing the bio-psychosocial model, Engel challenged the health-care field to broaden its approach to include the biological, psychological, and sociocultural effects on patients' welfare. This was proposed because biomedicine could not adequately account for the effect that practitioners had on the outcomes of their patients (Engel, 1977).

Social constructionists also acknowledge the role that the social environment plays in the process of creating attitudes and beliefs, as it replaces the concept of cognition with conversation (Talja, Tuominen, & Savolainen, 2005). Therefore, what people perceive as truth significantly depends on the social relationships that they engage in (Gergen, 1999). This framework speaks directly to the social interaction and the socio-cultural factors that come to play in the present study. However, it does not include the biological and psychological processes, which are also considered to play a role in the development of attitudes and beliefs toward menstrual hygiene management amongst adolescent girls.

Menstruation is a perfect example of bio-psychosocial process as it is a normal aspect of physiology that affects behaviour and is also affected by behaviour (Johnston-Robledo & Chrisler, 2020). Women's behaviour is affected by beliefs

and attitudes, which are in turn influenced by their psychological experiences (Johnston-Robledo & Chrisler, 2020). Attitudes and beliefs about other females' biological processes such as menstruation are similarly viewed as affecting and being affected by behaviour. It is important to state that the manner with which women's cycle, menarche, and menopausal experiences occur and their beliefs about them are learned, and their attitudes toward them are formed within a cultural context (Johnston-Robledo & Chrisler, 2020). Therefore, although many adolescent girls across the world may share the same physiology of menstruation, each of them will experience it differently. Bio-psychosocial factors do play a role in why adolescents experience menarche differently.

This, is however, supported by the fact that they are products of their inner biological and psychological environment as well as their external socio-cultural environment (Tiwari et al., 2006). Conducting research on menstrual hygiene management is an opportunity to explore what young adolescents know about their bodies (biological), to investigate myths and misinformation they may have learned (psychological), and explore the extent of the impact of culture and social cognition on elements of the biological processes of menstruation (Johnston-Robledo & Chrisler, 2020). The investigation of a complex phenomenon such as menstruation demands a model that examines the complexity of issues that come to play during menstrual management. Therefore, this theory is appropriate for this study because it enables us to better understand how biological (age at menarche, knowledge of menstruation and reproductive health, as well as adolescent girls' understanding of their bodies as different from boys), psychological (the unpleasant nature of

menstruation, shame, and perception about menstruation, as well as how prepared they are to cope with them), and socio-cultural (beliefs, norms, religious system, family and community) factors interact.

Social Theory of Perception

The social theory of perception is one of the theoretical underpinnings within which this research was based. This theory was developed by Ichheiser in 1966. The theory is based on the idea that social context affects how people behave because it primarily addresses our perceptions of others, whether they are favourable or unfavourable. For psychologists, their focus is on how people form opinions about others or group of individuals and how that can affect the value of their relationships. These include the methods by which past impressions are formed, the causes of prejudice and judgemental feelings, and the ways in which we form relationships and come to like certain people through personal relationships (Ichheiser, 1966).

According to Lieberman (2010), social perception, also known as person perception, is the study of how people acquire impressions and understand other people. According to him, people can gather information about other people's emotions and moods through physical, verbal, and nonverbal interactions. In addition, Kelley and Michela (1980) and Fiske and Taylor (2013) proposed that social perception also deals with how people think about and interpret other people; how they develop judgments, extrapolate conclusions, and attempt to understand the behaviour of others. Sometimes called social cognitive or the study of “native psychology”, social perception focuses on factors that influence the ways in which

people understand other people and on how people process, organise and recall information about others.

In conceptualising this theory to MHM, a pubescent adolescent's first experience of menarche and what she should do by way of management will determine how she will perceive subsequent menstrual flows. The negative feelings or otherwise of menstruating adolescents toward menstruation is determined by their level of knowledge or available information to pre-menstruating adolescents. However, unlike the developed countries, the situation is different in the LMICs where most of these adolescents enter into menarche without prior knowledge about it and its management. Their first experience is always that of disappointment and embarrassment, with subsequent ones posing a nightmare of mental and emotional implications. Due to their insufficient information on how to properly manage menses and the socio-cultural perception that menses is bad, they see themselves as unclean, harbouring bad scents, not fit to mingle with others and so on. This has actually made menstruating adolescents to have bad opinions about themselves and how they perceive people to think about them (Ichheiser, 1966).

The general attitude of people in the developing countries toward menstruation is that of hostility and secrecy. This makes menstruating adolescents to hold the impression that once in menarche, then you are at war with the society. The society, in effect, cannot disassociate itself from the hostile attitude towards menstruating adolescents because to them menses and its matters are sexual matters and should not be discussed in public. Apart from that, there are several sociocultural matters associated with menstruation, and once in menarche, the

adolescent has fallen into the socio-cultural realm of that treatment, whether favourable or unfavourable. Thus, for the adolescent girl in menses, the initial bad impression created against the phenomenon, coupled with her inability to manage the flow in a hygienic manner, will further worsen her situation. According to the theory, the initial or latter impression formed by the society concerning menstruating adolescents such as they are unclean, smelly, impure, bad luck among others, actually makes them have negative attitudes towards themselves. This, affects the general perception of adolescents towards menstruation and menstrual management (Ichheiser, 1966).

Koeng, Hossain, and Whittaker (1997) found that menstrual adolescents and women are generally negatively impacted psychologically and emotionally by the attitudes and behaviours that society and institutions display toward them. This has actually affected most adolescents and women in a negative manner, resulting in the bad perception they harbour concerning menstruation and its management. However, it's important to remember that while though impression creation has been shown to be effective in influencing people's perceptions, this may not always be the case because impressions can become warped if assumptions are drawn from scant information (Wishner, 1960).

Prejudice and discrimination are additional factors that affect people's perceptions. Prejudice and discrimination, in its narrower sense, occur when society starts to judge and have unfavourable negative views against a certain group of people (menstruating adolescents). This, in effect, will also affect the adolescents' sense of judgment toward society. The problem with prejudice and discrimination,

which are components of the social theory of perception, is that once formed, a person's prejudiced viewpoint toward others is very difficult to change. Even while their perceptions may not be based in prejudice and discrimination against others, at best, their negative sentiments toward others might only be diminished under particular conditions (Ichheiser, 1966).

Interpersonal attraction, one of the components of the social theory of perception, explains why people think they are attracted to other people based on the quality of their interactions with them. A number of elements have been noted as key predictors for a strong interpersonal attraction. They include perceived expertise, familiarity, mutual liking, and physical appeal (Ichheiser, 1966). It has been demonstrated that physical appearance has a significant role in how individuals react to others. There are many reasons why being attractive may be essential, but one of them is that being among attractive people elevates one's status and prestige. For instance, the ability of an adolescent to become clean and fresh during menstruation as a result of the use of proper sanitary napkin can change people's perception toward menstruating adolescents as unclean and smelly.

People are more drawn to those who appear competent, knowledgeable, and bright than to those who do not, according to the theory of perceived competence. In addition, being among people who are competent at what they do may provide us some satisfaction. Therefore, if a skilled person occasionally displays symptoms of imperfection, we may find that to be more endearing (Aronson, 1988; Ichheiser, 1966). Bruce (1990) shared the same opinion. He is of the opinion that perceived competence of adolescents in managing their

menstruation can attract individuals who initially consider menstruation to be bad toward them.

Conceptual Framework

This study's conceptual framework is adopted from the work of Hennegan et al. (2019) on women's and girls' experiences of menstruation in low- and middle-income countries. This was a framework developed from a systematic review from low- and middle-income countries to explain how girls and women experience menstruation. The framework has four key variables: socio-cultural practices, resource limitations, menstrual hygiene management and social interaction. Socio-cultural practices and resource limitations can have both positive and negative effects on menstrual hygiene management. The impacts/effects can affect the adolescent's social participation, academic participation as well as their work.



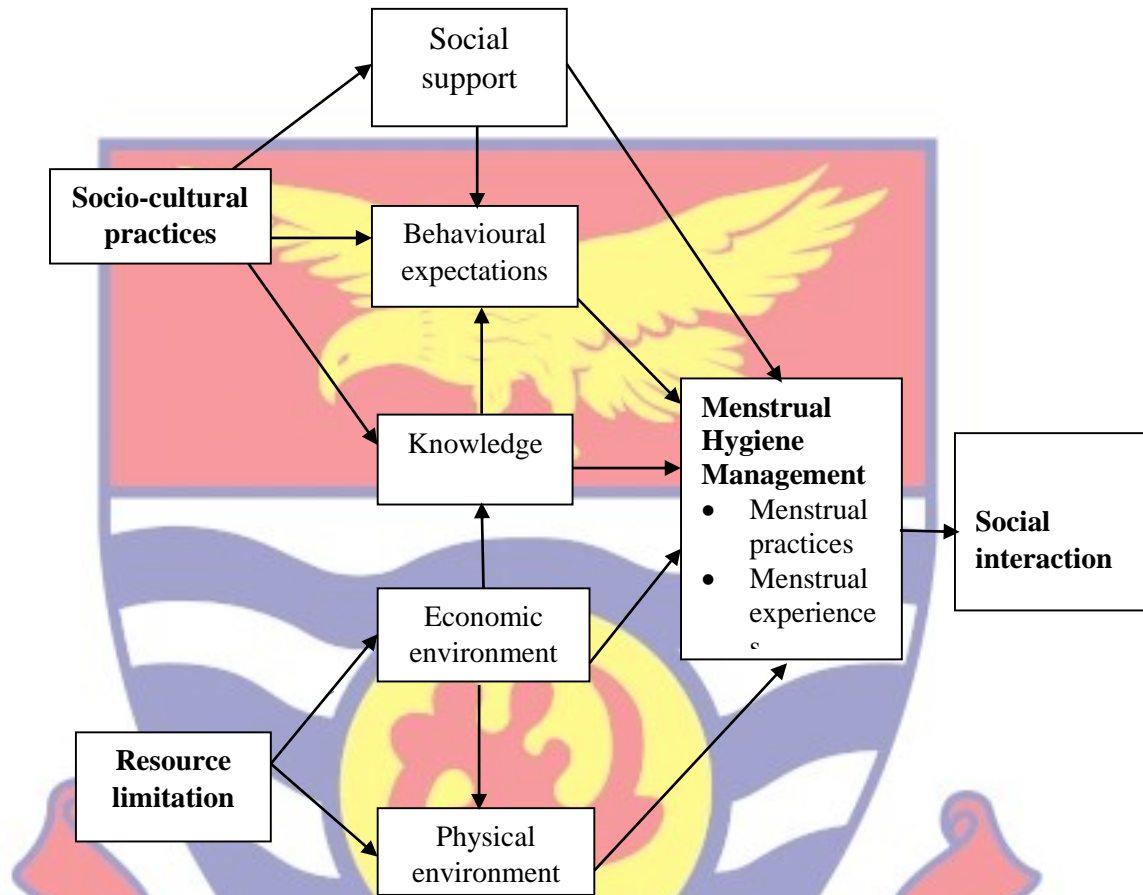


Figure 1: Conceptual framework on girls' menstrual management practices and how it affects social interactions

Source: Adopted from Hennegan et al., 2019

Sociocultural Practices

From the framework, it was found that across cultures and religious groups, menstruation was stigmatised and regarded as 'dirty' or 'impure' and thereby handled in a secret manner. The lack of open discussions on menstruation makes it difficult to access relevant information or seek assistance regarding menstrual management. These negative attitudes were manifested across multiple themes

represented in the model, including adolescents' own attitude to keep menstrual status hidden in order to avoid the shame and humiliations, should there be any menstrual exposé.

The restrictive sociocultural norms exhibited across cultures also had an influence on girls' knowledge, behavioural expectations, and social support.

Knowledge

Studies across cultures in lower-and middle-income countries have identified the influence of knowledge on girls' menstrual experiences. Several areas of knowledge were discussed across studies, including the basic biology of menstruation, the link between menstruation and childbirth, menstrual management and the taboos and restrictions around menstruation. From the framework, girls' menstrual knowledge plays a significant role in their behavioural expectations, social support, menstrual management practices and social interactions

Social Support

Social support or lack thereof has a direct influence on girls' menstrual experiences. Parents, siblings, peers, teachers (mostly female teachers) and boyfriends remained the sources of information, resources, or aids to achieving their menstrual obligations. It is obvious that mothers remained the major source of support to girls' menstrual management, and their inability to grant that support because of poverty will affect girls' behavioural expectations, menstrual management practices and their social interactions.

Behavioural Expectations

Behavioural expectations of menstruating girls were greatly influenced by sociocultural and religious perceptions. Demonstrated either internally or externally. That is, expectations girls placed on themselves or those enforced by others. From the reviews, it was clear that sociocultural restrictions on menstruation vary across cultures and range from mild to more serious effects. A classic example is the one which was practised in Nepal called “Chaupadi”, a ritual isolation from the community and home during menstruation (Amatya et al., 2018).

In many settings, menstrual blood and, by extension, menstruating adolescents were considered ritually impure or polluting (Wall et al., 2018). Such beliefs translated into restrictions on girls’ behaviour, including not mingling with males while in school, touching or cooking food, praying in the mosque and so on.

Resource limitations

These represent the unmet needs of menstruating adolescent girls across lower-and middle-income countries. Resources include the economic and physical environment that limits girls’ choices of menstrual practice and hence their experiences of menstruation. A congenial physical environment, such as, the provision of adequate WASH infrastructure plays a significant role in girls’ menstrual management practices, which are often unavailable in many lower-and middle-income countries.

On the other hand, resources also stem from a financial environment that is favourable to the basic needs of menstruating adolescent girls. However, many adolescent girls lacked the financial ability to purchase their preferred sanitary

products, afford some toiletries as well as buy some first aid drugs for those who sometimes experience menses discomfort (Kaur et al., 2018). Accordingly, they are compelled to alternate between sanitary napkins and the use of rags. Others may have to undertake paid labour in order to get money to buy sanitary napkins (Wall et al., 2018). Their inability to have access to these resources will affect their menstrual management practices and social interactions as shown in the framework.

Menstrual Management Practices

These are steps adolescent girls undertake to manage their menstrual bleeding. While studies differed in the extent to which they explored these practices, together, they provided a comprehensive picture of the range of practices women and girls undertake to manage menses. Among the commonest practices identified in many studies include: access to and use of materials to absorb menstrual blood, changing materials and disposing of them, washing hands before or after changing materials, washing genitals, and washing and drying reusable materials. Menstrual waste disposal and its accompanying misconceptions such as, rapping of used sanitary napkins in a polythene bag before burying it on the ground or throwing into a pit latrine were among some of the practices (Chinyama et al., 2019; Mason et al., 2013). These practices were actually based on their socio-cultural practices, informed by their level of knowledge, social support and the physical and economic resources made available within the social environment.

Social Participation

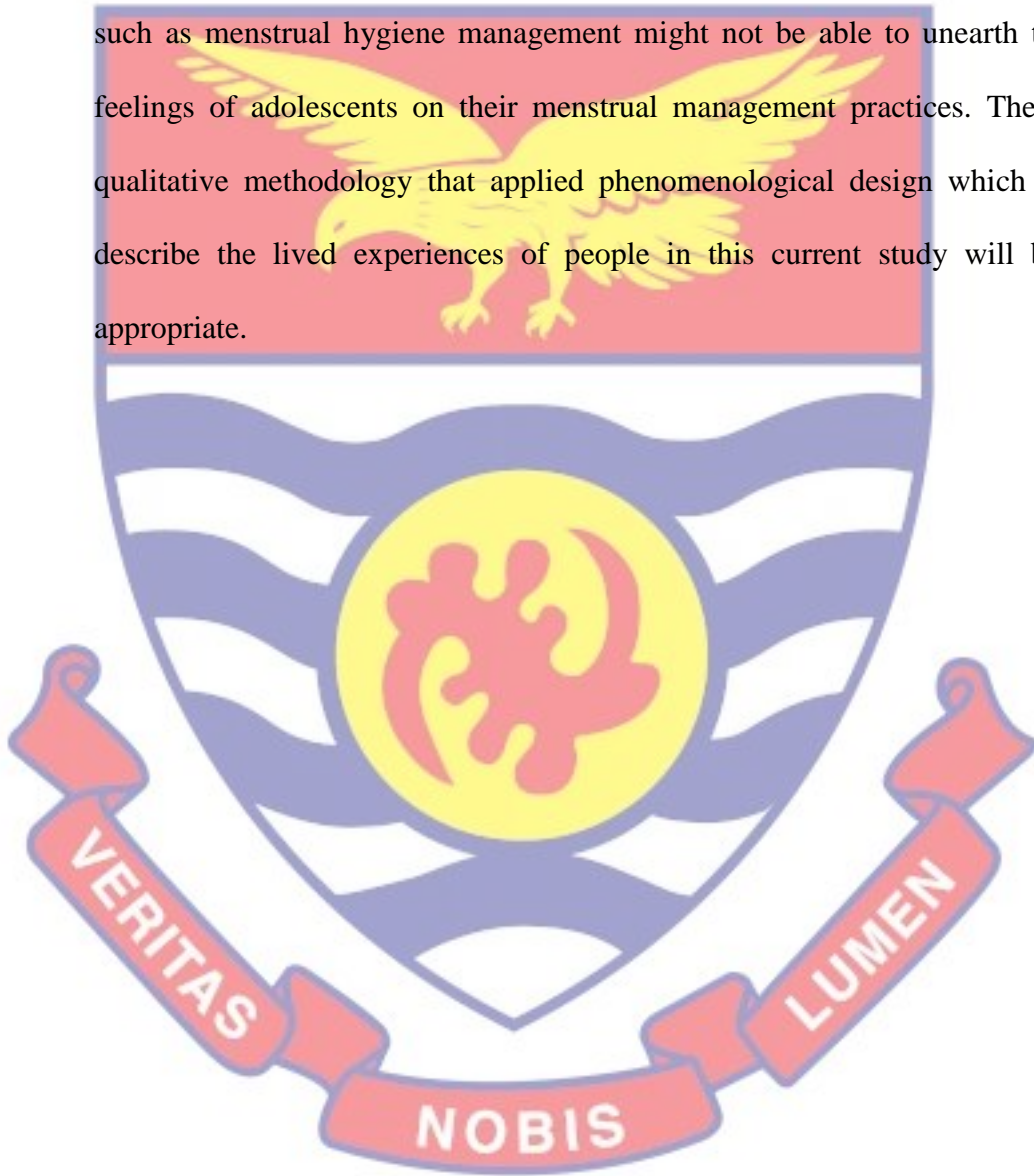
Girls reported altering movement and participation outside the household during menses, as well as restricting activities such as running or playing sports (Chinyama et al., 2019; Chebii, 2018; Wall, Teklay, Desta & Belay, 2018; Naeem, Klawitter & Aziz, 2015). Many motivations echoed those restricting school attendances, with women and girls experiencing pain or afraid their menstrual status would be exposed, that others would detect odour, or that menstrual materials or blood would fall out of place. Behavioural expectations in many settings also restricted interactions with males, food preparation, or participation in religious gatherings or activities. As noted above, girls expressed varied adherence to and frustrations with explicit restrictions on activities during menstruation, while some saw nothing wrong, others dislike being excluded. Some restrictions were interconnected with expectations of propriety placed upon girls as they sexually matured, to protect them from sexual advances, as they could now become pregnant.

The Gaps Identified in the Reviews

In the first place, although a teaming number of the literature reviewed have identified various challenges affecting young girls in the lower-and middle-income countries, their focus have been on menstrual hygiene management and adolescents' school attendance. Others also focus on the sociocultural practices on adolescents' menstruation, as well as the influence of MHM on girls' education. However, none of the reviews have studied the lived experiences of in-school and out-of-school adolescent girls and how that affect their social interactions. It is therefore important that a study that tried to compare the lived experiences of both

in-school and out-of-school adolescent girls is conducted to identified how that influence on their social interactions.

Secondly, the methodological approach used in most of the literature under review was quantitative. However, a quantitative methodology on a subject matter such as menstrual hygiene management might not be able to unearth the inner feelings of adolescents on their menstrual management practices. Therefore, a qualitative methodology that applied phenomenological design which seeks to describe the lived experiences of people in this current study will be much appropriate.



CHAPTER THREE

RESEARCH METHODS

Introduction

This chapter discusses the procedures used to gather and analyse the data. It includes a description of the research topic, research methodology, study design, source of data, target audience, sampling, sample size, and the tools used. Other concerns include the pre-testing of the devices, data collection, data administration, data analysis, and ethical problems.

The Study Area

The study area is the KNEM of the Upper East Region. It shares administrative boundaries to the north with the Kassena-Nankana-West District and Burkina Faso. To the east, it shares boundary with Kassena-Nankana West District and the Bolgatanga Municipal, to the west it also shares boundaries with Builsa North and South Districts and to the south with the Bolgatanga Municipality. The municipality covers a land area of 1,675 square kilometres along the Ghana-Burkina Faso border (GSS, 2014).

The municipality has a total population of 118,441 and comprises 48.8 percent males and 51.2 percent females (USAID, 2017). A greater percentage of the population lives in the rural area (72.7 percent). The municipality has a high age dependency ratio of 84.0 percent (GSS, 2014), with an average household size of 4.8 persons (USAID, 2017). It has a youthful population where 39.2 percent of the population is below 15 years (GSS, 2014).

In terms of education, the municipality has, in total, 61 early childhood development centres, with 62 public and private primary schools, a total of 38 public and private junior high schools, five senior high schools, two vocational training schools, one college of education and Community Health Nursing Training College respectively and the University for Development Studies (MOF, 2015). In terms of literacy, more than half of the total population, i.e. 56.3 percent is literate.

Agriculture constitutes the major economic activity of the municipality, representing 66.7 percent of the total employed population. The forestry and fishing industries, craft and associated trades, service, and sales are also important areas of the economy. Managers, professionals, and technicians make up a very small portion of the workforce (GSS, 2014).

Research Philosophy

Research is a process of systematic inquiry that entails collection of data, documentation of critical information and analysing and interpretation of that data/information, in accordance with suitable methodologies set by specific professional fields and academic disciplines (Hampshire College, 2020). In order to expand knowledge and empower people, research essentially entails the methodical exploration of a topic through the gathering, analysis, and interpretation of data (Babbie, 2013). However, the theoretical framework that guides and shapes this process is known as the research philosophy or paradigm.

Research paradigm is a philosophical way of thinking or the researcher's worldview (Kivunja & Kuyini., 2017). The researcher's shared perspective informs the significance and interpretation of the research data. There are three

philosophical worldviews that guide social research which are the positivist social science, interpretive social science, and pragmatic social science (Neuman, 2014).

The positivist social science is of the view that the social world can be understood in an objective way. In this philosophy, the researcher is an objective thinker and does dissociates himself from personal values and works independently. Opposite to the positivist is the interpretivist research philosophy which holds that the social world can be interpreted in a subjective manner. The focus here is on how people understand and experience the social world. To them, research is based and depends on what the researcher's interests are. Finally, the pragmatic social science is based on the principles of positivist and interpretivist research philosophies. For them, realistic research philosophy is based on assumptions that are necessary for the perception of subjective nature of the human (Zukauskas, Vveinhardt, & Andriukaitienė, 2018).

This study utilises the interpretivist view in order to get the thoughts of adolescent girls on menstrual hygiene management. This approach has been adopted based on the belief that reality constitutes people's subjective views about a particular phenomenon (Creswell & Creswell, 2017). This worldview adopts an inter-subjective epistemology and ontological belief that reality is socially constructed. Instead of condensing meanings into ideas, they rely on the diverse thoughts and viewpoints of the research participants to acquire complexity of views. As a result, the interpretivist research theory uses qualitative research techniques for gathering and analysing data. They believe that social science takes a more subjective than objective approach and has little bearing on the creation of

new knowledge. The interpretivist tends to understand phenomenon from the view point of people. It is based on what has meaning from a human perspective rather than having predefined dependent and independent variables (Blaikie, 2007). Therefore, this philosophical world view fit perfectly into this current study because, it aimed at gathering the varied opinions of adolescent girls' menstrual hygiene management practices.

Research Design

Based on the philosophical underpinning, phenomenological study design was adopted. This design was chosen because it enables the researcher to describe the lived experiences of individuals or participants about a particular phenomenon. This research approach explored the attitudes, practices and experiences of menstruating adolescent girls through the use of in-depth interviews (IDIs) and focus group discussions (FGDs). This study was conducted in three selected public junior high schools and three communities in the KNEM. A sample of adolescent girls 10-19 years of age who have started their menses were included in the study. Both IDI and FGD guides were used for data collection.

The structure of the IDI, and FGD were guided by a framework developed by Hennegan et al. (2019) to measure women's and girls' experiences of menstruation in low-and middle-income countries. The explored were the lived experiences of adolescents in the management of menstrual flows, the role of WASH in menstrual management, challenges of menstrual management among adolescents and how menstrual management affects adolescent social interaction. In-depth interviews were conducted in the three selected schools and communities.

Alongside with the IDIs, a total of six FGDs were also organised in the selected schools and communities (that is, one each, in each of the schools and communities) with a minimum of six (6) participants and a maximum of nine (9) in each group. In fact, each of the participating girls had an equal opportunity of contributing to the discussions. There was no segregation during the discussion process because all the participating adolescents had similar characteristics and the groups were homogenous in their composition. Adolescent girls were identified through the convenience sampling method. The respondents were selected based on the fact that they were menstruating and also willing to participate in the research. This process was repeated until saturation.

Data were acquired for this study from both primary and secondary sources. Adolescent girls aged 10 to 19 who have begun menstruating provided the primary data. Information obtained was from both in-school and out-of-school urban and rural adolescent girls in the Municipality. The secondary sources on the other hand, were obtained from books, journals, papers and the internet.

Study Population

This study covered adolescent girls 10-19 years of age who have started their menses in some selected communities and schools within the KNEM. The inclusion criterion was that, the girls must reside within the municipality and should be in their menarche. The rationale for the choice of the KNEM was that being located in the northeastern part of Ghana, which is naturally challenged in terms of water and sanitation facilities, the rural communities in the municipality may have fewer to nonexistence of WASH facilities. Statistics also show that the municipality

has a poverty prevalence rate of 30.8 percent with only 11.7 percent of the population having access to improved sanitation (USAID, 2017).

In addition, other studies also found that a greater percentage of the population in the municipality practise open defecation, with most schools lacking access to adequate water, sanitation, and hygiene facilities (Abanyie et al., 2016; Issahaku et al., 2017). Further to that, the choice is also informed by the fact that these adolescents have just started their menses and should be in the right position to tell how MHM is implicating their social lives.

Sampling Procedure and Sample Size

Multi-stage sampling procedures were employed for the study. At the first stage, six communities were purposively sampled from a total of 110 communities in the municipality, taking into consideration rural-urban differences. According to Ghana Statistical Service's (2014) classification of urban and rural communities, 35 communities in the municipality are urban while 75 of them are rural. Using this as a guide, three urban communities (Namolo, Bonia, and Vunania) were selected with Punyoro No. one, Punyoro No. two and Gaani serving as the three rural communities.

After purposively selecting these communities, convenience sampling technique was applied to recruit participants. First of all, for the in-school girls, eligible schools (Namolo JHS, Gaani JHS and Punyoro JHS) were visited, and with the help of the school health teachers, girls who were eligible and consented to participate in the study were randomly selected. Secondly, on the part of the out-of-school girls, through the help of the nurses in the selected communities,

community volunteers were contacted to identify eligible girls. The purpose of the study was then explained to them and those willing to participate were interviewed. After the interview, those who also consented to participate in the group discussions were gathered for the discussion.

In all, a total of 15 IDIs (i.e. eight in-school girls comprising: two from Namolo JHS, four from Gaani JHS and two from Punyoro JHS, and seven out-of-school girls, also comprising: one from Namolo, one from Gaani and three from Vunania communities) as shown in Table 1 were interviewed. Also, with the FGDs, a total of six with 43 participating members (i.e. 24 in-school girls comprising: nine from Gaani JHS, seven from Punyoro JHS and eight from Namolo JHS and also, 19 out of school girls comprising: seven from Gaani, six from Punyoro and six from Bonia communities respectively) were conducted. It should be mentioned that participants were chosen from the qualified schools and communities based on their availability to share information on menstrual experiences.

Research Instrument

This study applied both in-depth interview (IDI) and focus group discussion (FGD) guides. Both instruments covered six (6) main sections in the administration process. The first part which looked at the socio-demographic characteristics of the adolescents, focused on age, history of school attendance for the out-of-school, their levels in-school for the in-school, place of residence, marital status and occupation, if any. The second section explored the lived experiences of adolescents in managing menstruation. Then the third section examined the role of WASH in menstrual management. Then, the fourth sections looked at the

challenges of menstrual management among adolescents while the fifth part of the interview investigated how the management of menstrual flows influences adolescents' social interaction. The last portion of the instrument was on suggestions/recommendations.

Recruitment and Training of Field Assistants

Three males field assistants were recruited and trained for the field work. Their selection process was based on knowledge, level of experience in qualitative research, and also the ability to speak the Kassem or Nankana languages fluently. In order to effectively prepare the research assistants for the work, the study's objectives were explained to them. Additionally, they received instruction in data administration and recording, as well as translating the instrument's material into the local tongue. Finally, they were taught on how to handle ethical issues that might arise during the process.

Pre-test

The instrument was pre-tested at the Bulsa North District of the Upper East Region. This district was selected because it has characteristics that are similar to the study area. Two schools and two communities each were selected for the pre-testing. Then, six adolescent girls each between the ages of 10 and 19 years who had started menstruation were selected for the IDI. Furthermore, one FGD was conveniently held in the district. The purpose of this pre-test was to identify the difficulties that might arise during the actual data collection process. The research questions were modified as a result of feedback from this pre-test. Questions that were unnecessary or inappropriate were removed or changed.

Data Collection Procedure

Data collection took place after approval was granted from the Institutional Review Board of the University of Cape Coast (Clearance ID No: UCCIRB/CHLS/2020/28). It took 28 days to acquire all the data (four weeks).

Before the whole exercise, permissions were sought from the Ghana Education Service and the Ghana Health Service as well as the chiefs and the opinion leaders of the study area. Reconnaissance visits were made to the selected schools and communities to sensitise them on the data collection process and to make arrangements for the convenient times for the exercise. Two in-school and three out-of-school girls were interviewed each day by means of IDI guide until saturation was reached. Each IDI lasted 30-45 minutes. As shown in Table 1, 15 girls were interviewed (i.e. eight in-school girls comprising: two from Namolo JHS, four from Gaani JHS and two from Punyoro JHS and seven out-of-school girls, also comprising: one from Namolo, one from Gaani and three from Vunania communities respectively).

On the other hand, with the help of the research assistants, six FGDs were conducted in three schools and three communities. A total of 43 adolescent girls 10-19 years of age who have started menstruation participated in the discussion (i.e. 24 in-school girls comprising: nine from Gaani JHS, seven from Punyoro JHS and eight from Namolo JHS and also, 19 out of school participants comprising: seven from Gaani, six from Punyoro and six from Bonia communities respectively). Participants in the focus group discussions ranged between six to 11 members. The discussions were carried out in English and where necessary, translations were

made in the Kassem or Nankana languages to adolescents who could not understand questions asked in the English language.

All interviews and discussions were moderated by the researcher while the recordings, pictures, and note-taking were done by the trained assistants. All the three FGDs were conducted on the selected schools on scheduled dates and time as was arranged by the school authorities. Also, the remaining three discussions in the communities were equally done on scheduled dates and time approved by the girls with the help of the health personnel and the community volunteers and their parents. FGDs were conducted in separate days, first of all, starting with the schools and then followed by that of the communities. Two FGDs were conducted on each day with each discussion lasting 50-60 minutes. In order to ensure open interactions and inclusiveness during the data collection, a round table approach was adopted for the discussion.

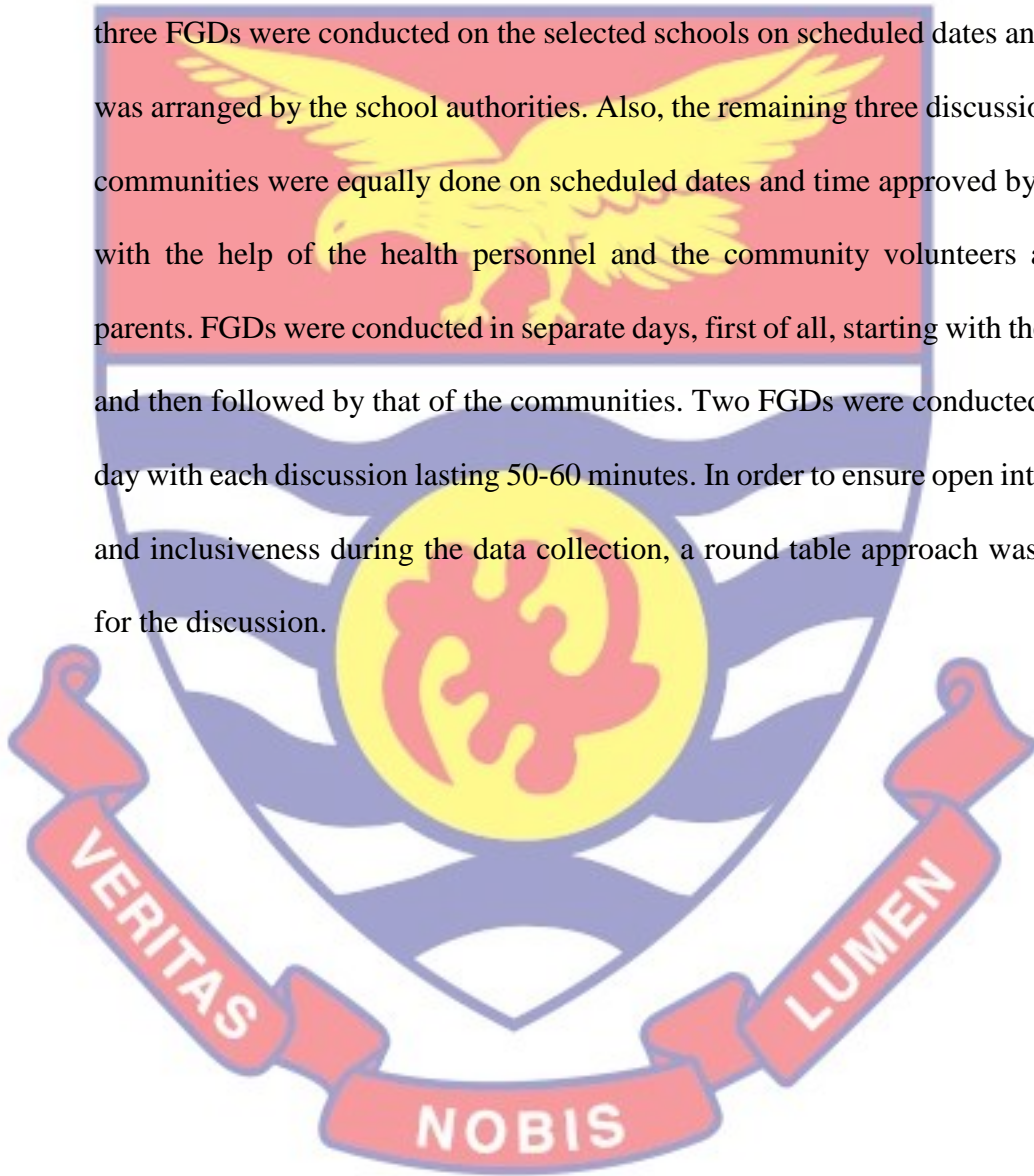


Table 1: Overview of Participant grouped by data collection

Participants	Data collection Method	Community/Sch	Sessions	Total Participants
In school	IDIs	Namolo JHS	2	2
		Gaani JHS	4	4
		Punyoro JHS	2	2
Out of School	IDIs	Namolo Community	1	1
		Gaani Community	1	1
		Vunnania Community	3	3
		Punyoro Community	2	2
			15	
In school Girls	FGDs	Gaani JHS	1	9
		Punyoro JHS	1	7
		Namolo JHS	1	8
Out of School	FGDs	Gaani Community	1	7
		Punyoro Community	1	6
		Bornia Community	1	6
			43	
Total Participants				

Source: Field work, 2020

Data management

After each day's work, the research team usually scrutinised the transcripts, notes, and videos/pictures to rectify errors and inconsistencies if there were any. Each participant's information was categorised into themes, sub-themes, and codes. These themes, sub-themes, and codes assigned to each respondent were then later generated and merged into a combined set of codes. By doing this, disparities in the coding were corrected and consensus reached, and the most appropriate, capable of

reducing biases, was adopted. All information gathered from the field after each day's work were treated with confidentiality. All recorded interviews, notes, videos, photos, and the soft copy of the transcription were kept private.

Data Processing and Analysis

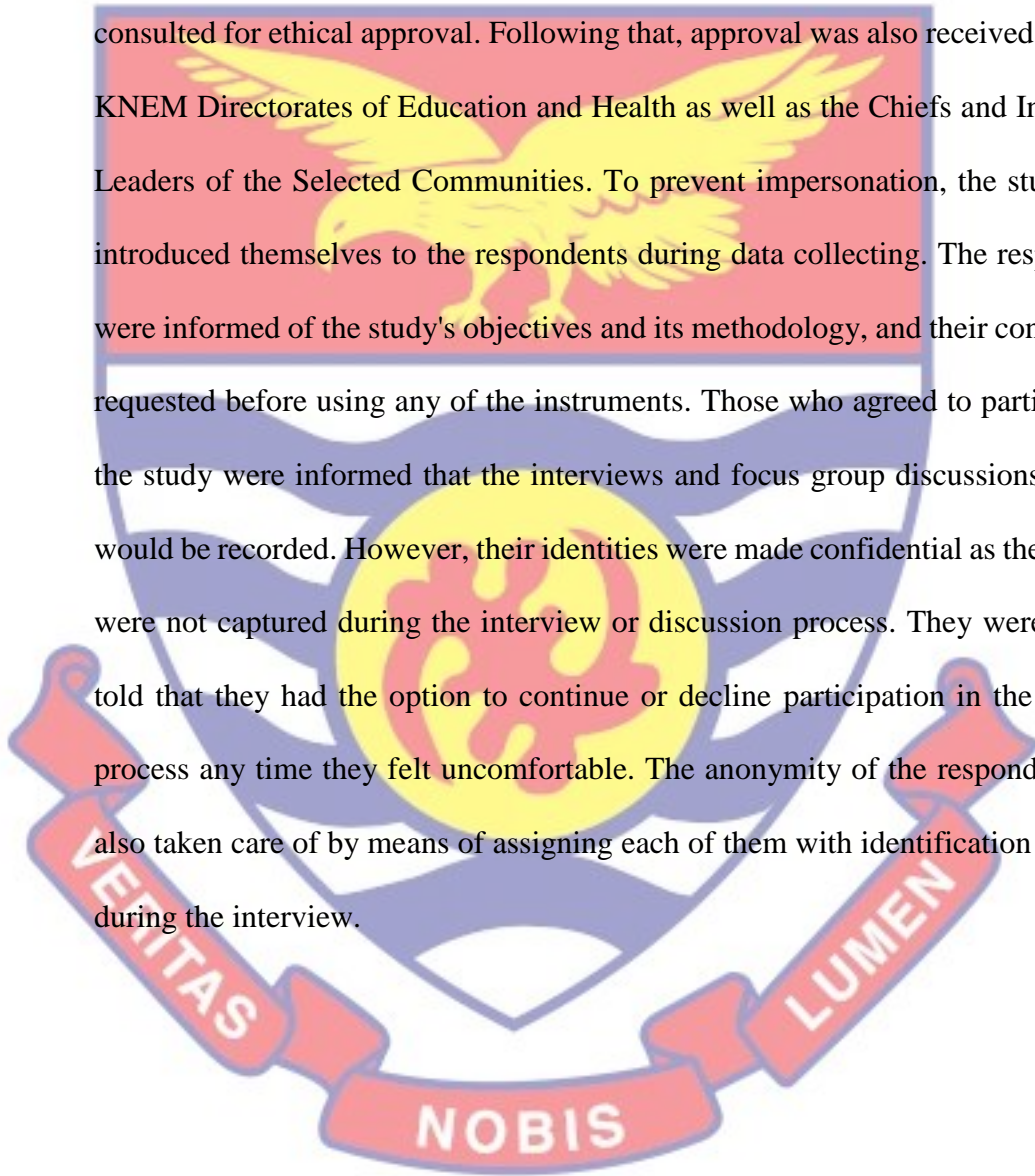
This study adopted the thematic analysis (TA) approach. This approach is aimed at breaking the text into themes where a pattern is drawn and thus considered for the analysis (Strauss & Corbin, 1990; Terre-Blanche, Durrheim & Painter, 2006). The researcher, together with the field assistants, undertook a preliminary data analysis where daily debriefing with the research team was done. Here, detailed field notes from data collectors were deliberated upon and emerging themes identified. Through these deliberations, there was the need to amend question guides with specific probes in order to draw out themes requiring further explorations. Once the data collection was completed, all recordings were transcribed.

Through the use of the thematic approach, the researcher was able to familiarise himself with the data through thorough reading of each transcript before the coding framework could be refined if it became necessary. This further gave the researcher a deeper insight into the kinds of interpretations that the data might possibly support. After familiarisation with the data, key issues that emerged were put into different categories and sub-categories according to menstrual hygiene management protocols. This was afterwards classified, grouped, and organised into topics and sub-themes in accordance with the study objectives. The data were then

manually analysed based on the primary and supporting themes mentioned in the objectives.

Ethical Issues

The Institutional Review Board (IRB) of the University of Cape Coast was consulted for ethical approval. Following that, approval was also received from the KNEM Directorates of Education and Health as well as the Chiefs and Influential Leaders of the Selected Communities. To prevent impersonation, the study team introduced themselves to the respondents during data collecting. The respondents were informed of the study's objectives and its methodology, and their consent was requested before using any of the instruments. Those who agreed to participate in the study were informed that the interviews and focus group discussions (FGDs) would be recorded. However, their identities were made confidential as their names were not captured during the interview or discussion process. They were equally told that they had the option to continue or decline participation in the research process any time they felt uncomfortable. The anonymity of the respondents was also taken care of by means of assigning each of them with identification numbers during the interview.



CHAPTER FOUR

RESULTS AND DISCUSSION

Introduction

This chapter covers the findings and discussion on menstrual hygiene management among adolescent girls in the KNEM in the Upper East Region of Ghana. The findings in this chapter are divided into five thematic areas: sociodemographic characteristics of the participants; lived experiences of adolescents in the management of menstruation; WASH facilities in menstrual management; challenges of menstrual management among adolescents; and influence of menstruation on adolescents' social interaction.

Characteristics of Respondents

The ages of the girls were between 13 and 19 years. Majority of the girls who participated were between 15 and 19 years of age for the in-school adolescents while most of the out-of-school adolescent girls were between the ages of 17 and 19, with a number of them either being mothers or pregnant at the time of the study.

The analysis further showed that most of the girls had their first menstrual experience between the ages of 12 and 14 years. This finding affirms a research that was conducted in India and northern Ethiopia which found that the mean age at menarche among girls was between 12 and 13 years (Senapathi & Kumar, 2018; Tegegne & Sisay, 2014).

Additionally, most of the in-school adolescents who participated in the FGDs were in JHS 3 while that of the IDIs were a mixture of JHS 1 and 2. It was also revealed that the respondents were mostly living with their nuclear families or

extended families. With regard to residence, participants were drawn from both rural and urban communities.

Menstrual Experience of Adolescent Girls

Finding out how girls felt about menarche and menstruation management was one of the research goals for this study. Although the girls presented varied experiences based on their unique physiological make-ups, family backgrounds, level of support, and socio-cultural/religious belief systems, three major issues emerged during the discussion: knowledge, socio-cultural perceptions, and menstrual management practices.

Knowledge and understanding of menstruation by girls on or before menstrual debut play a vital role in their management practices and perceptions. In our quest to gather the knowledge and understanding of adolescent girls on menstruation and its management, the analysis showed various responses from both the interviews and FGDs. In spite of the fact that most girls could describe scientifically what menstruation is and the people who menstruate, there was a knowledge gap regarding menstruation and its management prior to menarche. It was very common for most girls to indicate not having prior knowledge about menstruation. They described knowing about it when they got their first bleeding. This, however, made their first menstrual experiences to be met with unhealthy feelings and reactions. Most of them revealed having terrible physical discomfort and mixed feelings about the cause of the blood. Below are some excerpts:

“I felt weak and was afraid as I did not know what it was because I had my menses before they then taught us in school.

“(13 Years Old JHS 1 Girl-Tono)

“I felt stomach pains, however, I initially thought something cut me.” (15 Years old girl-Gaani)

“It was very painful and happened in school so I went to the teacher and asked and she said it was my menses.” (FGD, 18 Years old JHS1 girl-Bonia)

“When I saw the blood, my body was just shaking because I was afraid, I thought something pricked me.” (18 Years old adolescent mother-Vunania)

Although majority of the girls expressed negative feelings about their first ever menstrual experience, others felt it was a joyous and normal phenomenon. Their statements re-emphasised the fact that when adolescents are given the right information and education on menstruation, its experience appeared normal for the girl. This was what these young girls said during the interview:

“For me, it was normal, I did not care about it, I just told my mother but after a few hours I started experiencing abdominal pains.” (13 Years old JHS 2 Girl-Namolo)

And yet another also stated that

“I had abdominal pains before the blood but when I saw the blood, I was happy because I felt am now grown.” (15 Years old JHS 3 Girl-Namolo)

Secondly, how a particular society perceives menstruation, also has a significant impact on girls' experiences and practices. The findings of this study demonstrated that different levels of views about menstruation were present throughout the municipality. Here, menstrual blood is considered as unhealthy and, therefore, must be treated with some reservations. Again, it was also revealed that menstrual debut signifies maturity in the girls' life and might lead to early sexual initiation based on the conditions in which the girl finds herself. Whereas the in-school girls had a contrary view, the out-of-school adolescent girls felt it attracts men to worry them, especially in the rural communities. In addition, respondents further indicated that apart from being seen as sexually matured, some other community members, especially the males, consider menstruating girls as being filthy and, therefore, avoided them. Others, however, felt the perception of the community members about menstruating girls is a matter of personal hygiene. For them, if a menstruating girl is able to keep her body and clothes clean during periods, nobody will worry her. These were some of the views expressed by some respondents:

“The community members always see you to be mature enough to marry and sometimes some other people may see you as dirty and may not want you to fetch water for them.” (19 Years old adolescent girl-Bonia)

“Here they see you as mature to have sex. People may also avoid you if you get your menses and you didn't bath you will be smelling.” (19 Years old pregnant adolescent girl-Vunania)

“It depends on how you handle yourself, if you bath constantly and keep your cloths clean nobody will say anything bad, but, if you don’t bath you will be smelling and they will see you as dirty.” (FGD, 17 Years old JHS3 girl-Gaani)


This notwithstanding, respondents further revealed that menstrual debut within the municipality is considered by some other people as a sign of fertility and, therefore, must be celebrated. This was what some young girls said about menstruation during focus group discussion:

“Here they consider menstruation to be good because they believe it is a sign of fertility” (FGD, 19 Years old girl-Punyoro)

“They see it as a gift so if you don’t menstruate you cannot give birth. It is also seen as a period you can marry” (FGD, 17 Years old JHS 1 girl-Bonia)

Finally, apart from the knowledge gaps and socio-cultural perception identified from the responses as influencing girls’ menstrual lived experiences in the KNEM, girls’ menstrual management practices were also considered as one of the biggest matters to girls’ experience. The type of materials used during monthly periods contributes significantly to the comfort and safety of the girl. In ascertaining this, we tried to find out from the respondents the particular type of materials used during their first menstrual experience and in subsequent ones. The findings revealed a variety of products ranging from sanitary pads, rags, papers, cotton, and ashes. Although majority of the participants, both ‘in’ and out-of-school, have revealed that they used pads during their first menstrual experience, not all of them

continue to use pads in subsequent periods. The results further showed that most of the girls had their first menstrual experience while at home or in school for those attending school. This explains why the school environment should be conducive enough to safeguard this unavoidable situation. The following are some excerpts:



“It happened at home, so I told my sister and she said I was then a teenager and gave me a pad to wear after I had a bath. Since then, I have been using pad usually given to me by my mother.”

(13 Years Old JHS 1 Girl)

“I woke up in the morning and saw blood, I went to my mother and she said am mature so if I sleep with a man or a guy, I will get pregnant, then later I had a bath and she asked me to go to my father for money to buy pad. Subsequently, I sometimes wear my panties like that without putting anything.” (FGD, Another

17 years old JHS3 girl-Gaani)

“It was at home, after I finished bathing, I just saw some blood flowing through my legs and I went and bathed again. I did not know what it was, I just rode a bicycle and came so I thought something pricked me from the bicycle. I then used my book papers to put it inside my pantie and wear. After that I went and told my sister who then gave me a pad to wear and since then I have been using pad.” (FGD, 17 Years old JHS3 girl-Namolo)

However, not all of the respondents could afford and used sanitary pads during their first menstrual experiences. A greater number of them also said they

used other materials to control the blood. Although the safety of those materials used could not be guaranteed, their only concern according to them, was to stop the blood flow no matter what it takes.

“Mine was at home and I was afraid and I didn’t tell anybody but used a rag.” (FGD, 17 Years JHS 2 girl-Bonia)

“In my first menses I used a rag, my friend provided me with the rag and then later they provided me with a pad.” (FGD, 15 Years old JHS3 girl-Namolo)

“In my first experience I used a cotton. I didn’t even know it was my menses, I thought it was a cut.” (FGD, 16 Years old JHS3 girl-Namolo)

That notwithstanding, others also stated they did not use any product.

“Mine happened in the farm and I went home without telling anybody and didn’t use anything. However, I was bathing minute after minute.” (FGD, 18 Years JHS 2 girl-Bonia)

Disposal of Sanitary Waste and Availability of Water, Sanitation and Hygiene (WASH) Facilities

The relevance of WASH facilities in the management of menstruation can never be underestimated in terms of the comfort and hygiene they provide to adolescent girls. Also, research has shown that there are a lot of traditional beliefs and misconceptions surrounding menstrual blood. Therefore, the purpose for this question was to find out from the girls how they dispose of soiled menstrual materials and the reasons behind their mode of disposal. In responding to this question, several revelations were given by the girls. However, one thing that was

consistent was the fact that all the girls stated categorically that the used sanitary material was not just thrown anyhow but was either wrapped in a polythene bag or with something before disposal. The differences then lied in where it was disposed of, after it had been wrapped. Some said they burned it, others burried it in the ground while others indicated they either threw it into a pit latrine or into a dustbin. The reasons they gave regarding their mode of disposal were to avoid environmental pollution and not being used for ritual purposes. Below are some excerpts from their responses:

“I put it in a polythene bag and tie and burry because my grandmother said it is not good to throw it like that as people can use it for ritual purposes.” (FGD, 16 Years old JHS3 Girl- Namolo)

“When am using a piece of cloth I normally wash it to reuse the next time but if it is pad, I normally burn it or burry it in the ground. If you didn’t do that somebody can pick it and use it for rituals.” (17 Years old adolescent mother- Vunnania)

“I normally rap it in a rubber and throw at where we throw our rubbish if that is pad but when am using rag, I normally wash it and dry it in the sun. I do it that way because sometimes it smells or dogs or pigs can take it if you throw it anyhow.” (17

Years old JHS2 girl- Gaani)

Furthermore, another theme that emerged from the questions was the importance of WASH facilities to menstrual management. In response to that, the

girls could not deny the fact that the provision of WASH facilities is useful to their cause as they enable them to change comfortably and then bath. Many of them, however, lamented that these facilities are either not available or in an unfriendly condition if available. As for water and soap in their schools, the least talked about them the better, they said. The following are some of their statements:

“These facilities are important because if there are dustbin you can always put your used pad there if not if you throw them anyhow sickness can catch you.” (19 Years old pregnant adolescent Girl-Vunnania)

“WASH facilities are important because girls can go into the toilet to change, use the water to bath and throw the used pads into the dustbins.” (15 Years old JHS3 girl- Navrongo)

“If there is toilet, water and dustbins in school is good because you can go to the toilet and change, then the water we can used it to bath and wash our soiled panties.” (FGD, 16 Years old JHS3 Girl-Namolo)

Challenges of Menstrual Management among Adolescents

Menstrual hygiene management practices among adolescent girls come with a lot of challenges and these challenges affect them in several aspects of their daily lives. In this regard, the study sought to get the views of adolescent girls on some of the challenges they faced in their menstrual management practices. The responses from the participants on this subject matter were mixed. Majority of them had issues ranging from physical discomfort, access to safer sanitary products and

hygienic facilities to change during menses and many others. In all these, three sub-themes emerged during the discussion: dysmenorrhea, lack of WASH infrastructure, and lack of financial support.

First of all, in our quest to unearth some of the challenges adolescent girls faced during menstruation in the municipality, dysmenorrhea (Menstrual pains) was identified to be prominent among menstruating girls in the study area. In both the in-dept interviews and FGDs, the girls complained bitterly about the pains they have to endure every month as a result of menstruation. Below are some excerpts:

“My only challenge is stomach pains whenever I had my menses, however my mother usually gives me medicine to suppress the pains.” (13 Years old JHS 2 Girl-Tono)

“I have stomach pains and you have to take medicine and at times too it is difficult to get soap and if you don't have soap, you only used water. Also, here we don't have toilet facilities.”

(19 Years old pregnant adolescent girl-Vunania)

“Sometimes is very painful.” (FGD, 17 Years old JHS1 girl-Bonia)

Secondly, the responses from the participants also revealed that majority of the girls complained about the difficulties in changing their menstrual materials both in school and at home because of the absence or unhygienic nature of the facilities in either the school or at the community. The following are some statements from the responses:

“I always have difficulties in changing because you can be in the toilet or urinal to change and another colleague of yours can come in and see you and am not always comfortable.”

(FGD, 17 Years old JHS3 Girl-Gaani)

“I sometimes find it difficult to get soap to wash, also, in our schools there are no dustbins and water and sometimes I still feel the stomach pains. In place of the soap, I use ash to wash my soiled sanitary cloth.” (17 Years old JHS 2 girl-Gaani)

“My challenge is the pressure to change under unhygienic conditions in school such as dirty toilets, coupled with the lack of water and soap to wash hands after changing. Based on this if my menses is over-flowing, I don’t come to school until it stops.” (FGD, Another 17 years old JHS3 girl-Gaani)

Further to the above, there were those that complained about the inability to get assistance to buy sanitary napkins and soap, which compelled them to adopt unhygienic means of managing their menses such as the use of rags. This they said affects them especially during school hours. These were what some girls had to say:

“Me when I cannot get pad, I wash rags and use it so when am in school I cannot get up in class I will be sitting like that until closing time and because of that I used not to go to school.”

(FGD, 19 Years old adolescent mother-Punyoro)

“My challenge is, I always lack money to buy pads and so I feel uncomfortable because I use rags” (FGD, 19 Years old adolescent mother-Punyoro)

“Sometimes I have challenge in getting soap for regular bathing and to wash my cloths” (19 Years old adolescent mother-Gaani)

Not only this, it was further revealed by some respondents that their inability to get support from parents sometimes compelled them to seek help from their boyfriends and that can lead them to unplanned pregnancies. This was what some girls said during FGDs:

“Me I face challenge because when I ask my mother for money to buy pad, she will tell me she does not have money then she will tell you, you are now grown you can go to your boyfriend and get money to buy the pad. When she says that to me, I wear the pantie like that because when your boyfriend gives you pad today, then tomorrow he will want to have sex with you before he gives you the money” (FGD, 15 Years old girl-Punyoro)

Menstruation and Adolescents’ Social Interaction

In some cultures, especially in the low-and-middle-income countries, menstrual blood is considered unhealthy and, therefore, has the tendency to carry misfortunes to individuals who come into contact with it. For this reason, menstruating girls are sometimes perceived as unclean. On the basis of this, one of the objectives of this study was to get the views of menstruating girls on how

menstruation limits or affects their social interaction/engagements. In answering this, three sub-themes came up as follows: the concern was on activities or programmes traditionally forbidden for menstruation girls, those they themselves voluntarily avoid because of menses and how they are treated by others during menstruation.

On the part of activities traditionally forbidden for menstruating girls (women), it was evident from majority of the participants that clearly, there are some activities within the KNEM that menstruating girls do not participate in, although, others also mentioned that they have never been prevented from any activities. What was, however, interesting was that most girls could not tell the reasons why they are not allowed to participate in those activities. The following are some of the excerpts from the interaction:

“In school no, but at home, my mother does not allow me to participate in prayer. According to her it is stated in the Quran.” (13 Years old JHS2 Girl-Tono)

“In my community no, but when I was staying with my auntie who is a Muslim, I used not to cook because if you cook, they will not eat.” (19 Years old adolescent-Bonnia)

“Yes, my mother does not allow me to cook because if you cook and they eat the food they can get disease or the food will not be sweet for them to eat.” (15 Years old adolescent Girl-Gaani)

“You are not allowed to attend church especially (a particular church was mentioned).” (FGD, 17 Years old adolescent girl-Punyoro)

On their part, almost all the adolescents stated that they do not participate in some social activities when they are in their menses. They gave varying reasons accounting for their inability to participate in those social activities. Many of the reasons centered on the fact that they do not use proper sanitary towels and for that reason, the tendency to embarrass themselves in public is high. Below are some of their responses:

“I don’t go to church, market or where people are gathered because the blood may appear and people will see. I avoid going to these places because I don’t use the right product.” (FGD, 19 Years old adolescent girl-Punyoro)

“Yes, if am over flowing I don’t normally go into the public or engage in public gatherings because the pad can get soaked and exposes me.” (18 Years old adolescent Mother-Vunnania)

“Yes, I avoid going to where people are gathered or where guys are because am afraid, I may be exposed. Although, I use pad, I still don’t think it is 100%.” (19 Years old adolescent-Bonnia)

“I don’t take part in some activities because I feel shy and I use cloth and the cloth can expose me if my blood is flowing too much.” (15 Years old adolescent Girl-Gaani)

Finally, on how they are treated during menses, although their responses were varied, most of the school girls said their male colleagues do not play with them again while others nick-named them. However, for others, it is a matter of personal hygiene. If girls do not take care of themselves while in menses, they might smell and that is where people will avoid them.

These were their responses:

“Yes, the boys normally will tease us when they are aware and call you names like “motor king knocks you.” (FGD, 18 Years old JHS2 girl-Bonnia)

“Yes, if they know you are menstruating, they will not come near you because they don’t know whether you have put pad or not and if your blood touched them, they will get sickness.” (19 Years old pregnant adolescent-Vunnania)

“Not really, but if you don’t take good care of yourself during menses, you will be smelling and people might avoid you.” (18 Years old adolescent Mother-Vunnania)

Discussion of Findings

The findings of this study are categorised and discussed based on the four broad thematic areas identified in the analysis. The discussion is also supported by empirical and theoretical literature.

Lived Experiences of Adolescents in Management of Menstruation

The first menstrual experiences of girls in the low- and middle-income countries are usually not palatable to talk about due to the lack of pre-menstrual

education. In this study, the findings showed that the lived experiences of adolescents' menstrual hygiene management in the KNEM was greatly influenced by the lack of knowledge prior to menstruation, physical discomfort, the feeling of excitement, socio-cultural perception and the use of unhygienic sanitary napkins.

From the responses gathered in both the FGDs and the individual interviews, it was clear that most girls understood what menstruation is about and why women menstruate as was found by Khaweka (2017). However, they reported that their first menstruation was shocking and strange as well as embarrassing. This finding was found to be in line with that of Burnet Institute et al. (2015) where girls knew about menstruation but were still not prepared. Although most of the girls expressed negative feelings about their first menstrual experience, others said it was a moment of excitement. To them, it was a sign of maturity and should be received with joy, which, in effect, confirms the finding by Khaweka (2017) that some girls see it as a healthy transition. This, however, is at variance with Hennegan et al. (2018), that some girls said it was scary and embarrassing.

The findings also suggest knowledge gap prior to menstruation or inadequate information (Abanyinie et al., 2016). From the evidence gathered, majority of the girls said they got the information about menstruation from their mothers. This reaffirms the role of mothers in the reproductive lives of girls, as highlighted by Boakyi-Yiadom et al. (2018) and Mohammed, Larsen-Reindorf and Awal (2020), where girls indicated their sources of information to be from mothers.

Although mothers are important sources of knowledge for girls, the challenges are that most of these mothers are not educated and, therefore, are more

likely to provide girls with inadequate or distorted information that might not be useful to them (Boakyi-Yiadom et al., 2018). Furthermore, the study also found that there was a widespread socio-cultural perception about menstruation within the municipality. Whereas girls in school felt menstruation did not mean anything within the school environment, those outside-of-school said menstruation was perceived as a sign of maturity. For that reason, they are viewed by the opposite sex as sexually matured and ready for sex or marriage. This finding was consistent with that of Lawn, Sallis, Wootton, Taylor, Demange, Fraser, and Munafò (2020) where menarche was seen to be associated with age at early birth. It might, however, be an affirmation of the high prevalence of teenage pregnancy in the municipality reported by the Ghana News Agency (2019).

The study further found that, males perceived girls as filthy when they are in their menses and, therefore, should not mingle with people. Though girls themselves sometimes felt they are not clean because of menses, some equally believed it is a matter of personal hygiene. This finding agreed with that of Mohammed et al. (2018) which found menstruating girls as filthy. For them, when girls are able to keep themselves clean, men might not shy away from them. This assertion underscores the importance of maintaining personal hygiene during menses. It also suggests that with the right knowledge and information made available to people about menstrual matters, people's perception towards the phenomenon is likely to change.

Also, the finding revealed that menstruation signifies fertility and, thus, menarche is received with some kind of joy. For them, without menstruation, a girl

cannot give birth. Therefore, it is gratifying when a girl begins menstruation and, thus, must be celebrated. This finding corroborates that of Mimche et al. (2017) where mothers felt excited to inform their husbands that their daughters had started their menses and can now marry to give birth to children. Additionally, another factor that equally appeared to be a major concern to the menstrual experience of adolescents in the less developed countries is the type of material used in controlling menstrual flows. The study found that majority of the girls used sanitary pads during their first menstrual experience, which appeared to agree with that of Ameade and Majeed (2015) as well as Mohammed, Larsen-Reindorf and Awal (2020) where 78 and 54 percent respectively of girls' used pad at menarche.

However, in the preceding periods, many of the girls stated clearly that they use pad and rags interchangeably, implying they either used pad or other materials depending on the prevailing circumstances. This was also found to be in line with that of Khaweka (2017) where girls indicated they occasionally used cloth, newspapers and other materials. They, however, stated that they knew the other materials are not safe but due to financial challenges, they could not afford pads all the time (Wall et al., 2018). For some girls, they did not have any option than to just wear their panties without anything to hold the blood flow during menstruation. This may have both social (e.g., embarrassment) and health (e.g., high risk of vaginal infections) implications for the adolescent girls.

Water, Sanitation and Hygiene (WASH) Facilities in Menstrual Management

The significance of WASH facilities in maintaining the dignity, safety, and confidence of menstruating girls, especially those in school, can never be

overlooked. WASH facilities play a vital role in ensuring the retention of girls in school as far as menstruation consequences are concerned (Nanda et al., 2016). However, this was not the case in the Kassena Nankana East Municipality, as the findings acknowledged that WASH facilities were highly inadequate. Also identified in the study was a widespread perception about the mystical nature of menstrual blood in the community and that informed the manner with which menstrual waste materials are disposed of. For instance, it was believed that menstrual blood, if found in the wrong hands, can be manipulated spiritually in a manner that will affect the owner. It was again perceived that the fertility of the woman is in jeopardy if a dog happened to have access to the menstrual blood of that girl. These findings are consistent with that of Sommer et al. (2015) where it was identified in Ghana and Tanzania that improper menstrual waste disposal can result in infertility if an animal, especially a dog, has access to it. However, it was inconsistent with Sommer et al.'s (2015) findings in Ethiopia and Cambodia where there were no taboos regarding menstrual waste disposal.

According to the participants, soiled menstrual materials are not just thrown away anyhow, but are wrapped in a polytene bag before they are disposed of. The commonest places they dispose of these waste products were: the toilet for those who have access to pit latrines, some prefer to bury it in the ground, while others prefer to throw it deep into the bush where it might be difficult for anybody to have access to it. This finding was found to corroborate that of Abanyie et al. (2016) where the lack of dustbins compelled girls to dump used materials into the toilet. That notwithstanding, it was again found that some girls prefer to dispose of soiled

menstrual products in a wrapped polytene bag because of environmental reasons. They believe throwing them anyhow can lead to animals such as pigs spreading them within the environment and that might result in an unpleasant smell.

The findings again identified that most school environments within the KNEM did not have functional WASH facilities such as toilets and dustbins (Abanyie et al., 2016). Dustbins could only be found in a few urban schools, although unauthorised sites were created for dumping of refuse. At the community level, apart from the urban communities, majority of the communities visited did not have toilet facilities. There were also no dustbins especially in the rural communities aside from the indiscriminate dumping sites created by community members. On the part of water, despite the fact that majority of the schools visited had nearby sources of water such as boreholes or taps for those within the town, there was no special arrangement for hand washing but for covid-19. This finding was, however, inconsistent with that of Abanyie et al. (2016), where they found that seven out of eight schools visited within the municipality did not have any source of water at all. At the community level, it was also found that majority of them had boreholes although some complained they were a bit far from where they lived. These findings were found to be consistent with that of Abanyie et al. (2016), Acheampong et al. (2018) and Asimah et al. (2017).

It was further realised that menstruating girls placed high premium on the provision of these WASH facilities in both the schools and at home because of the comfort they provide them during menstruation. According to them, if these facilities were made available and in good form, they could change their sanitary

napkins in the toilet and use the water and soap to wash and clean themselves after that. For some, personal hygiene during menstruation was very paramount because when one bath frequently during menses, it reduces the bad odour. This finding supports that of Nanda et al. (2016) that girls talked about the increased need to bath during menses in order to reduce bad odour. They, however, lamented about the lack of decent sanitary facilities which makes it challenging for them to change during menstruation. This was found to be in tune with the findings by Nanda et al. (2016) and Chinyama et al. (2019) that school girls acknowledged the importance of WASH facilities to their menstrual management. They were, however, categorical that they feel very much comfortable when WASH facilities are provided for them.

Challenges of Menstrual Management among Adolescents

There has been an increased attention on stigmatisation of menstruation across the world, unfolding several challenges encountered by women and girls. Although this appeared not to be too much of a problem in the developed countries, it is, profound in the low- and middle-income countries of Asia and sub-Saharan Africa (Karlsson, 2019). In an attempt to unravel some of these challenges girls faced when managing their menses, three distinct sub-themes emerged: menstrual pains (dysmenorrhea), the lack of safe and convenient facilities, and lack of financial support.

First of all, menstrual pain and discomforts were among the prominent challenges that manifested among girls. Indeed, menstrual pains, medically referred to as dysmenorrhea has been one of the obstacles many adolescent girls have to

face every month when menstruating. From the findings, some girls have indicated that the pains have compelled them to be taking medicine (pain killers) almost every month in order to suppress it. For others, pain during menstruation had a reflective effect on their academic performance, as it might be practically impossible to even attend school due to the severity of it. In some instances, when they did attend school, concentration becomes difficult. This finding was found to agree with that of Wall et al. (2018) as well as Kemigisha, Mlahagwa, Nyakato and Ivanova (2020) that girls felt distracted and could not concentrate and many at times absent themselves from school because of menstrual pains.

On the part of the out-of-school adolescents, participating in daily activities became impossible because the pain is sometimes unbearable. In severe situations, some girls reported being hospitalised in order to manage or suppress the pains. However, the difficulties, pains during menstruation is inevitable especially with adolescents because of the continuing physiological transformation. Although menstrual pain can be normal to most women, when menses are not properly managed with the sanitary products, it can create more pain or discomforts. Pre-menstrual education to young girls before menstrual experience is meant to prepare them and to take them through rudimentary ways of managing menstrual challenges such as menstrual pains. This is mostly not done in many rural communities thereby making it difficult for menstruating girls to find remedies to these basic problems.

Another issue of concern which was found to manifest in the findings was the lack of safe and convenient facilities for girls to change their menstrual materials during menstruation. Finding a convenient place to change sanitary

napkins during menstruation became one of their major challenges for both in-and-out-of-school adolescent girls as was also identified in other empirical studies (Tull, 2019). Although the situation was more serious among the in-school, girls expressed a lot of disappointment in their inability to find decent toilet facilities to change during menstruation. For some girls, it was much desirable to stay at home while menstruating than to encounter embarrassment in school. However, for others, their major challenge remains the lack of privacy where both girls and boys shared the same toilet. Such situations compelled them to sit with their soiled products no matter how heavy the flow may be and that affects them psychologically. This finding was in line with that of Henngan et al. (2018) and Sommer et al. (2015) where it was identified that the perception of the physical environment's cleanliness, privacy, and safety plays an integral role in women and girls' menstrual experience.

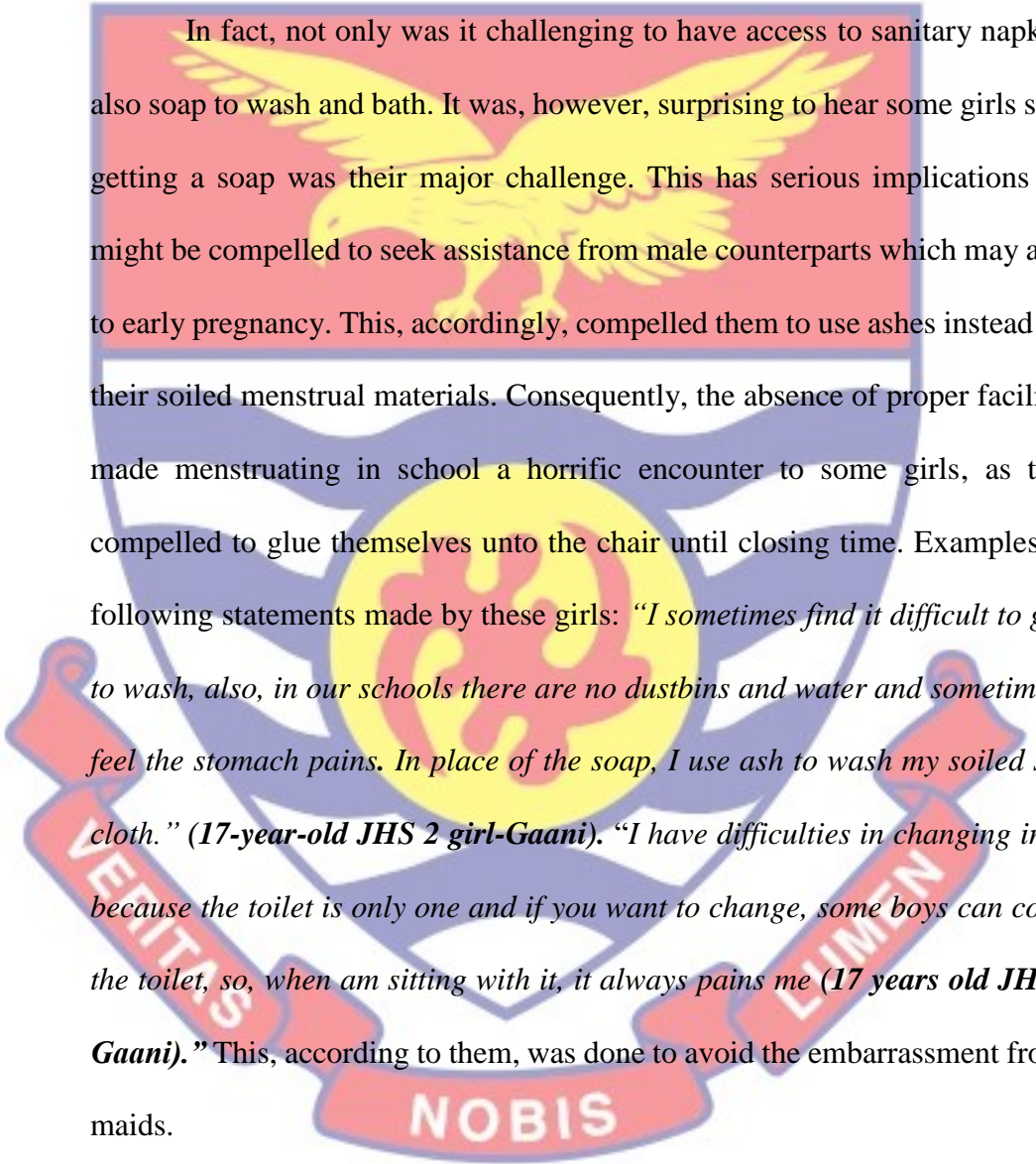
In an attempt to salvage the situation, others had to sneak back home during classes in order to redeem themselves from humiliations from colleagues especially boys, as was identified in the findings of Khaweka (2017). This, in effect, has a dire consequence on their academic progress. Consequently, girls were very emphatic about how the absence of these basic facilities in schools have affected their academic progress. This finding was consistent with the findings of Pandey (2014) where the lack of facilities affected their performance in school. Invariably, it has become a common practice where at some period in the month, some girls had to abandon school for some time in order to attend to their hygiene needs at home as

was evident in the findings of UNICEF (2016) in their study in Zabzugu and North Dayi in Ghana.

This finding has implications for the achievement of the Sustainable Development Goal 4 which seeks to ensure inclusive and equitable quality education and, hence, promoting a lifelong opportunity for all and Goal 5 which seeks to achieve gender equality and empowerment of all women and girls. The situation was no different at the community level, and in an attempt to maintain some privacy, girls who are menstruating are compelled to go far into the bush in order to replace their sanitary napkins. Accordingly, this unpleasant circumstance of not being able to get a comfortable place to change their sanitary napkins makes the experience of menstruation a burden.

Last but not least, another challenge that was identified was the lack of financial support or the inability to get safe and hygienic material during menstruation. Having access to sanitary pads and some toiletries has become the surest way to guarantee safety, comfort and confidence amongst adolescent girls during menstruation. However, this was not the case in the KNEM. The study found that access to hygienic sanitary products remains a major concern among girls in their menses in the Municipality. Although many of the girls have indicated getting family assistance in the purchase of sanitary napkins, they added that it has not been consistent because of financial constraints. It was further found that getting the right sanitary products such as sanitary pads gives them the comfort and confidence to participate in their daily activities, especially in the classroom. However, because of poverty, it has become challenging for many of them to afford sanitary pads.

Hence, they resort to unhygienic products such as rags, cotton, and tissue papers/toilet rolls and in the worst scenario, they are compelled to wear their dresses like that. This was found to be consistent with the findings of Mutunda (2016), Pandey (2014) as well as Tegegne and Sisay (2014).

The logo of the University of Cape Coast is a watermark in the background. It features a shield with a yellow eagle at the top, a central yellow circle with a red symbol, and a red banner at the bottom with the word "NOBIS". The shield is flanked by two red banners with the words "VERITAS" and "LUMEN".

In fact, not only was it challenging to have access to sanitary napkins, but also soap to wash and bath. It was, however, surprising to hear some girls state that getting a soap was their major challenge. This has serious implications as girls might be compelled to seek assistance from male counterparts which may also lead to early pregnancy. This, accordingly, compelled them to use ashes instead to wash their soiled menstrual materials. Consequently, the absence of proper facilities has made menstruating in school a horrific encounter to some girls, as they are compelled to glue themselves unto the chair until closing time. Examples are the following statements made by these girls: *“I sometimes find it difficult to get soap to wash, also, in our schools there are no dustbins and water and sometimes I still feel the stomach pains. In place of the soap, I use ash to wash my soiled sanitary cloth.” (17-year-old JHS 2 girl-Gaani).* *“I have difficulties in changing in school because the toilet is only one and if you want to change, some boys can come into the toilet, so, when am sitting with it, it always pains me (17 years old JHS2 girl-Gaani).”* This, according to them, was done to avoid the embarrassment from class maids.

It is important to state that unavailability or lack of access to hygienic management products does not only affect the health and education of girls, but also their social and recreational activities as was identified in other empirical

studies (Kemigisha et al., 2020; Ssewanyana & Bitanhirwe, 2019; Wall et al., 2018). Again, it was also found that the lack of access to hygienic management materials by girls in the Municipality had some relationship with the higher numbers of teenage pregnancies realised in the Municipality. The girls revealed that in their quest to minimise the embarrassments from possible menstrual leakage, they are sometimes compelled to seek support from male friends, which inevitably results in sexual engagements. Without that, the continued support for their sanitary products might not be guaranteed. In the most precarious situation, parents especially mothers in an attempt to free themselves from the insistent demands, instruct their girls to seek help from their boyfriends. As was stated by this girl, *Me I face challenge because when I ask my mother for money to buy pad, she will tell me she does not have money then she will tell you, you are now grown you can go to your boyfriend and get money to buy the pad. When she says that to me, I wear the pantie like that because when your boyfriend gives you pad today, then tomorrow he will want to have sex with you before he gives you the money (FGD, 15 years old girl-Punyoro)*. This finding agrees with that of Millington and Bolton (2015) where it was found that access to sanitary pads was higher among single females with multiple partners.

Influence of Menstruation on Adolescents' Social Interactions

The myths and misconceptions surrounding menstruation across cultures cannot be underestimated. The situation is pervasive in the less developed countries of Africa and the Middle East in which Ghana is no exception (Amatya et al., 2018; Atreya & Nepal, 2019). Clearly enforced by socio-cultural beliefs and expectation

of menstruating women, it is eminent from the findings of this study on MHM amongst adolescent girls in the KNEM that several restrictions were imposed on menstruating girls. Although they did not manifest so much in the urban towns of the municipality, they appeared to be more pervasive in the rural communities.

They stem from those that infringe on the engagement in some household activities such as cooking and the performance of some household chores, those that impact on the spiritual, religious and other social lives of the affected girls, those that affect hygienic and effective management of menstruation and finally restrictions that stem from women and girls' own perception that they are unfit during menses.

First of all, contrary to the findings by Wall et al. (2018) where Tigrayan women and girls were obliged to participate in their household chores while menstruating, the situation was different in the KNEM. Most menstruating adolescent girls were prevented from participating in household chores such as cooking. Although there were no justifiable scientific bases for disallowing menstruating women and girls to cook, it appeared to be a perceptual belief that cooking while menstruating may result in the food not being palatable and/or infliction of ailments to those who might have eaten the food. This was found to be consistent with that of Mohammed et al. (2018), where women were disallowed to cook food/pick fruits from trees while menstruating, with the belief that it is harmful to men and boys causing them to age faster or the tree will die from the poison of the menstrual blood of the woman.

The findings reported above emphasise the need for education on human reproductive biology to demystify the age-old perceptions that have been harboured

and transcended from generation to generations (Tull, 2019; Walle et al., 2018). It is, however, important to add that these revelations from the girls were found to be more evident among girls who came from the Islamic homes, thereby demonstrating the role of religion in menstrual management. Furthermore,

although there were no direct restrictions on social gathering, it was found that some girls were restricted on religious and spiritual grounds during menstruation in the municipality. A number of girls reported not being allowed to worship or fellowship with the people because of menstruation. According to them, this act of restricting them from participating in religious activities was bad and exposed them to public ridicule.

Not being able to participate in a religious activity in a society where prayers and success are inseparable serves as an affront to girls' fundamental human rights to freedom of worship. This finding agrees with the empirical finding by Mohammed, Larsen-Reindorf, and Awal (2020) where abstinence from religious activities constituted about 85.7 percentage of the commonest restrictions imposed on menstruating women and girls in Ghana. Also, empirical findings from other studies equally revealed how menstruating women and girls were banished from the community and/or participating in some activities (Amatya et al., 2018; Hennegan et al., 2019; Mohammed et al., 2018).

Contrary to the findings by Mohammed et al. (2018) where women reported they had to stay out of the public to keep men safe from menstrual blood contamination, this study revealed that most girls stayed out of social gatherings or engagements to avoid embarrassment. Several reasons were cataloged for their

public disengagement during menses. Consistent with the findings by Kemigisha et al. (2020), for most of them, the inability to afford hygienic and safer sanitary napkins leaves them with no option than to stay out of the public to avoid humiliation or being ridiculed for a possible menstrual leakage. While for others, despite the fact that they used sanitary napkins, they still do not trust it for fear that it might shift or get soaked during times of over-flow and thus to play safe, they stay out of the public.

It was also identified from the findings that, women and girls in the Municipality have this age-old perception that menstrual blood is unclean, and for that matter, women who are menstruating are unclean. This perception, without any persuasion compelled some of them, especially those who are traditional believers, to stay completely out of touch with the general public during menstruation. The idea is to play safe for not contaminating people with their unclean bodies, especially the males. This was found to be consistent with the findings from Amatya et al. (2018), Boakye-Yiadom et al. (2018), Mohammed et al. (2018), Mohammed, Larsen-Reindorf and Awal (2020), and Pandey (2014).

For the in-school girl, academic progress may be impeded by this as many of those in this category reported avoiding school for the entire duration of their menstrual phase to save themselves from the teasing, harassment and name calling from male colleagues. This finding confirms that of Kemigisha et al. (2020) and Mohammed et al. (2018) where poor menstrual care resulted in absenteeism from school and reduced active class participating among girls for fear of being embarrassed. As a way to mitigate the effect on girls' school attendance, this

finding emphasised the need for the government to re-introduce the free sanitary pad policy that was started some years back. This can help to reduce the menstrual effects on needy school going adolescent girls.

Finally, for some girls the unhealthy attitude toward menstruating girls stems from poor personal hygiene. Girls or women who do not take good care of themselves by way of good personal hygiene will definitely smell. This will compel others, especially the males, to stay away from them or call them names. For others, they were mindful of the consequences of poor hygiene during menstruation. However, the socio-economic challenges denied them the rights to good hygiene during periods. Where access to daily bread is a major concern, how more can one complain about money to buy sanitary pad, soap and other facilities that are necessary for adequate personal hygiene during menses? The easiest choice in a situation of this nature according to the girls is to stay out of the public. This, however, agrees with the finding of Mohammed et al. (2018), that staying away from the public was not on traditional grounds as had been purported to be, but rather due to poor access to quality sanitary absorbent products and the fear of bad smell.

Limitations of the Study

Despite the fact that the study delves deeper into menstrual hygiene management in the KNEM, the use of qualitative data makes it impossible to generalise the findings. Furthermore, the findings from this study pertain to menstrual hygiene management among only adolescent girls, therefore, the inclusion of older women can give us a balance of the various management

practices. The views expressed by adolescents are unique to their own feelings and experiences and, therefore, might not reflect the views of other menstruating adolescents.



CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary

This study looked at menstrual hygiene management among adolescent girls in the Kassena Nankana East Municipality and how it affects their social interaction. Specifically, it focused on the lived experiences of adolescents in the management of menstrual flows, the role of WASH facilities in menstrual management, the challenges of menstrual management among adolescents and, finally, how menstruation influences adolescents' social interaction. This study used qualitative design adopting the inter-subjective epistemology and ontological belief that reality is socially constructed. It, therefore, relied on the varied opinions and views of menstruating adolescent girls in the study area to come out with its findings and conclusions. Six communities were purposively sampled in the Kassena Nankana East Municipality and data were collected from both in- and out-of-school adolescent girls. In all, sixteen individual interviews were conducted among eight in-school and eight out-of-school girls who have started menstruating. In addition, a total of 43 adolescents participated in-six FGDs in three schools and three communities.

Summary of Main Findings

Although several of the respondents had fairer knowledge about menstruation, the findings from the study revealed that girls in the KNEM had inadequate knowledge prior to menarche. Widespread minor physical discomfort among menstruating girls during monthly periods was also reported by participants.

Adding to the above, the findings also revealed widespread socio-cultural misconceptions about menstrual blood being mysterious and, thus has the ability to cause physical and spiritual harm to individuals who come into contact with it. This preconceived perception further informed the menstrual waste disposal pattern of girls across the municipality. The safest means of menstrual waste disposal reported was throwing used sanitary napkins, usually rapped in a polythene bag, into a pit latrine or burying it in the ground.

Furthermore, the study also revealed that most school environments did not have functional WASH facilities. The few that had, were not in use because of their unhygienic nature. It was again revealed that majority of schools and communities in the municipality did not have bins nor proper sanitary disposal sites. That made it very challenging for menstruating girls to conveniently dispose of their used towels with ease, considering the perceptual view about menstrual blood in the study area.

More so, another obstacle that appeared to be prominent among menstruating girls in the municipality was the prevalence of dysmenorrhea (painful menstruation). Most of the girls indicated that, that was their main problem every month as far as menstruation is concerned. This, in effect, contributes to girls' school absenteeism during monthly periods. Also, the findings further revealed lack of financial support for some menstruating girls to acquire proper sanitary napkins. This served as a serious challenge as some girls are compelled to seek assistance from their male counterparts, which can result in sexual intercourse and consequently early pregnancy. However, in an attempt to find out how menstruation

influences adolescents' social interaction, it was realised that menstruation has strong restrictions on girls' movements, interactions, and involvements in certain activities.

Conclusions

Based on the key findings, the following conclusions were drawn from the study. Adolescent girls within the KNEM did not have adequate knowledge of menstruation prior to their menarche. Most adolescent girls in the KNEM used sanitary napkins in managing their menstruation. The KNEM lacked adequate sanitation and hygiene facilities that can support effective management of menses. There was also widespread socio-cultural belief that menstrual blood can be manipulated in a malicious manner to cause harm to the affected person if found in evil hands. Girls in the municipality lacked financial support to buy sanitary napkins. Finally, menstruation affects girls' social interaction, and school attendance for those in school.

Recommendations

Based on the conclusions, the following recommendations are presented:

1. The Ministry of Health through the Ghana Health Service should ensure that reproductive health education, specifically menstruation and its management, plays an integral part of the monthly health education and school health programmes of public health nurses across the country.
2. The Ministry of Local Government, Rural Development and Regional integration through the KNEM Assembly should ensure that basic sanitation

and hygiene facilities are provided in the municipality, particularly in basic schools.

3. The government, through the Ministry of Gender, Children and Social Protection as well as the National Commission for Civic Education, should identify communication strategies that factor in local taboos, myths and misinformation about menstruation and menstrual blood.
4. Parents and families should endeavour to provide their adolescent girls with the needed support that will enable them effectively manage their menstruation.
5. The government should do well to re-introduce the free sanitary pads policy system for basic school girls. Also, school authorities through the PTAs should ensure that sanitary napkins are made available for emergency purposes

Suggestions for Further Research

1. This study was limited to only adolescent girls, and as such, future studies can go beyond the girls to also gather the views of parents, teachers, policy makers and opinion leaders on how best menstruation can be handled.
2. Further studies need to also look at whether males' sanitary support to adolescent girls has implications on sexual promiscuity among girls.
3. This study was qualitative, and therefore makes it difficult for generalization of the findings. Hence, a quantitative future study is needed to enable us know how widespread the phenomenon is.

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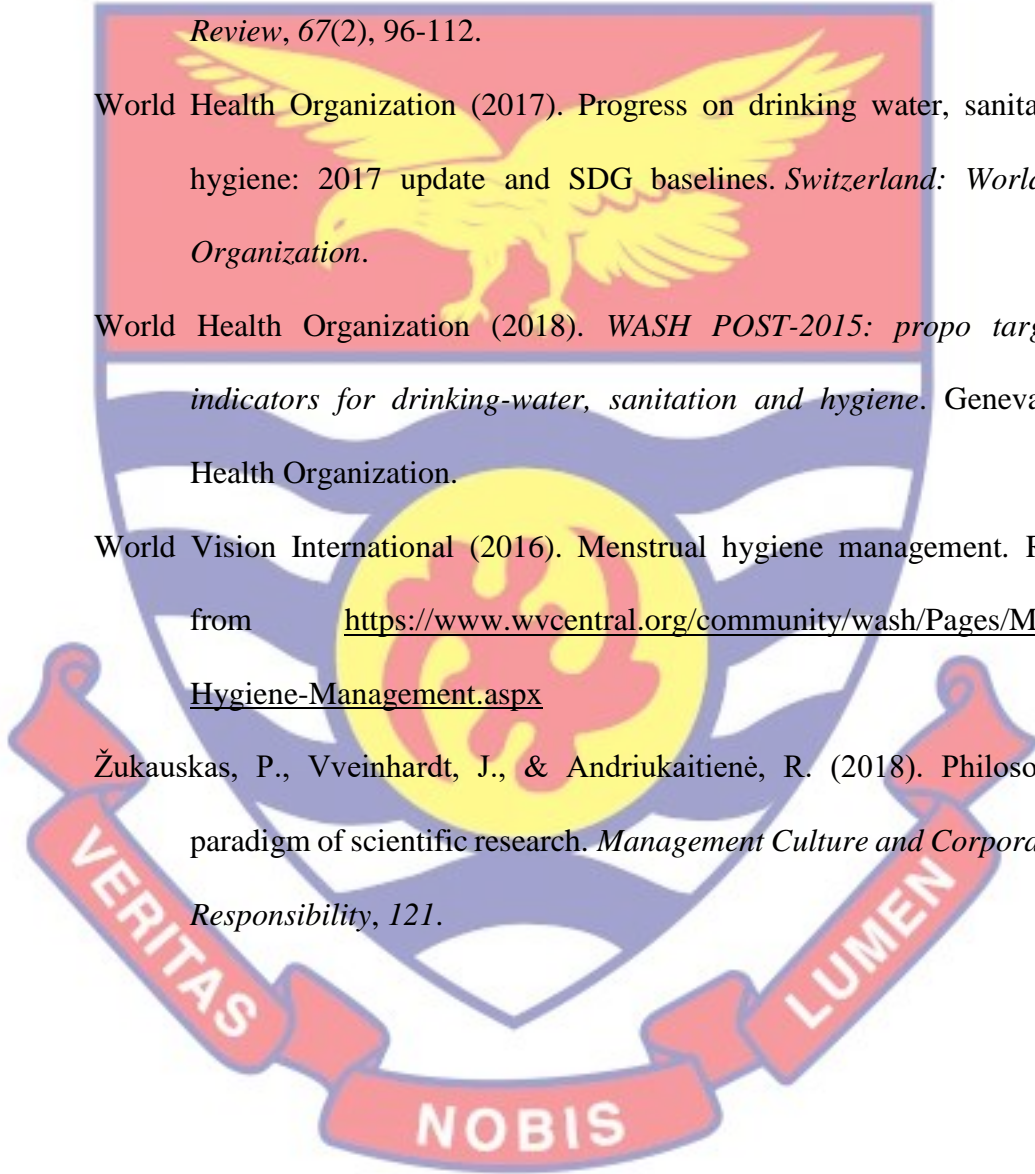
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APPENDIX A

INFORMED CONSENT FORM FOR THE OLDER ADOLESCENT GIRLS (18 AND 19 YEARS)

Title: MENSTRUAL HYGIENE MANAGEMENT AMONGST ADOLESCENT GIRLS: A CROSS-SECTIONAL STUDY IN THE NAVRONGO MUNICIPALITY

Principal Investigator: JOSEPH SOBIE DERY

Address: COMMUNITY HEALTH NURSING TRAINING COLLEGE,
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General Information about the Research

The main objective of this study is to investigate menstrual hygiene management (MHM) practices and their impact on adolescents' social interaction in the Navrongo Municipality. Specifically, the study seeks to answer the following questions:

1. What products do adolescents use in the management of monthly menstrual flows?
2. What are some of the lived experiences of adolescents' menstrual hygiene management?
3. How does the provision of WASH facilities affect the management of menstruation?
4. What are the challenges associated with the management of menstrual flows among adolescents?
5. How does the management of menses affect how adolescents interact with people?

The Upper East Region is one of the poorest regions in the country with an extreme poverty incidence rate of 27.7%, only 33% of portable water supply, the region with the highest open defecation rate of about 81% and also among the lowest with WASH facilities in schools. However, evidence from some researches point to the fact that with a poverty prevalence rate of 30.8%, 11.7% of population having access to improved sanitation in the district, and a low coverage rate of schools with adequate water and sanitation facilities, the Navrongo Municipality cannot be left out in this menace, thereby raising questions about the status of menstrual hygiene management in the municipality. For that reason, this study investigated MHM practices amongst adolescent girls in the Navrongo Municipality and how that can affect their social interaction. The study was guided by a framework developed by Hennegan et al. (2019) to measure Women's and girls' experiences of menstruation in low-and middle-income countries. This research applied both in-depth interview and focus group discussion guides to collect data. Each interview section lasted between 30-45 minutes. Adolescents are expected to answer question in connection with MHM. Participating adolescents consented to be part of the study by subscribing to the informed consent form.

Procedures

To find answers to the research questions that the study aimed to answer, it will be our pleasure to invite your ward to be part of the research process. If you consent to that, your ward will be required to participate in an interview that will be conducted by Field Assistants. She is given the opportunity to be part of this research because, we believe her experience as post-menarcheal adolescent can be

of paramount importance to this discussion. Questions that would be asked will touch on aspects such as her lived experience of menstruation and menstrual management, assessment on the type of product/materials used during menstruation and how menstruation can affect your social relationship.

In the event that she wishes to decline answering a question posed in the course of the interview, she will be permitted to alert the interviewer so that he/she can move to the next question. This interview will be conducted at the selected schools and homes of the in-school and out-of-school adolescents. It will be recorded for the sake of recall. The recorded interview will be treated with the level of confidentiality that it deserves. The duration of the interview is between 30 and 60 minutes.

Possible Risk and Discomforts

There is no predictable risk associated with the research aside from the discomfort it might create on participating adolescents.

Possible Benefits

The findings from this study are predicted to contribute greatly to the existing knowledge on menstruation and its management amongst adolescents in Ghana. It will again bring some understanding to boost the confidence levels of adolescents thereby fostering peaceful socialization and interactions. Also, results from this study will contribute greatly to the formulation and strengthening of already existing WASH policies in the country in order to ensure a level playing ground for both men and women. Finally, it is my expectations that this finding will

serve as a reference document for students, academia and researchers who are interested in MHM related issues.

Confidentiality

We wish to assure you that the information provided by your ward will be treated as confidential, and shall only be used later during the analysis. Recorded interviews as well as the transcribed version will be kept safe with the help of 'my lockbox app' to prevent unauthorised persons from coming into contact with the data apart from the researcher. Your ward's identity shall not be disclosed in the reports.

Compensations

In fact, there is no compensation package either in kind or cash for any participant. Participation is purely voluntary and without any string attached

Voluntary Participation and Rights to Leave the Research

Your ward's participation in this research is purely voluntary and she is at liberty to decline participation at any point in time when she feels uncomfortable with questions being asked without any consequence.

Contacts for Additional Information

In case you want any other information regarding this study, you can contact the following people:

1. Joseph Sobie Dery
Phone numbers: 0209419968/0543443930
Email: josephsobiedery@gmail.com
1. Dr David Teye Doku
Phone number: 05438330866
Email: ddoku@ucc.edu.gh

Your rights as a Participant

This research has been reviewed and approved by the Institutional Review Board of University of Cape Coast (UCCIRB). If you have any questions about your ward's rights as a research participant you can contact the Administrator at the IRB Office between the hours of 8:00 am and 4:30 p.m. through the phones lines 0558093143/0508878309/0244207814 or email address: irb@ucc.edu.gh.

Voluntary Agreement

The document above, which talks about the benefits, risk and procedures for the research has been read and explained to me. I was accorded the opportunity to ask questions and answers were given to my satisfaction. I therefore agreed to participate as a volunteer.

Date

Name and signature or mark of a volunteer

I certify that the nature and purpose, the potential benefits, and possible risks associated with participating in this research have been explained to the above individual.

Date

Name Signature of Person Who Obtained consent

UNIVERSITY OF CAPE COAST
COLLEGE OF HUMANITIES AND LEGAL STUDIES
FACULTY OF SOCIAL SCIENCES
DEPARTMENT OF POPULATION AND HEALTH

**MENSTRUAL HYGIENE MANAGEMENT AMONGST ADOLESCENT
GIRLS IN THE NAVRONGO MUNICIPALITY
IN-DEPTH INTERVIEW GUIDE FOR MENSTRUAL HYGIENE
MANAGEMENT (2020)**

Introduction

Socialisation and social engagement are key elements of adolescent's development. They give them the opportunity to build self-confidence in order to ensure gender equality and self-reliance. Research however, has shown that menstruation and its management has been a major stumbling block for women and young girls participating in social activities especially schooling. The purpose of this study is to investigate MHM practices amongst adolescent girls in the Navrongo Municipality. The study is primarily for academic work, and, therefore, you are assured that the information you provide shall be kept secret and will not be disclosed to any person. Your identity shall equally not be disclosed to any one, as it will be treated as anonymous. We are interested in learning from you about all your experiences and opinions about this topic. We need all your responses, both positive and negative, and there are no right or wrong answers. Please be informed that this interview will be recorded and it will last between 30-45 minutes.

- 1. Objective 1:** the lived Experience of Adolescents' MHM

1. Can you tell me what you know about menstruation?

Probe: the people who menstruate, why they menstruate, at what period they menstruate

Probe: the places they first heard about menstruation (from teachers, friends, family or health workers?)

2. How was your first experience of menses like?

Probe: the age she was; the place she was when first menses appeared

3. What is the significant of menstruation in your community?

Probe: is it a sign of maturity, time to marry, a sign of been filthy

4. Please can you tell me what products you use to prevent the blood from flowing during your first experience and subsequent ones?

Probe: type of material used, where she had them and where she gets subsequent support whenever she experiences her menses.

2. Objective 2: How relevant is the provision of WASH Facilities to MHM

5. How do you normally dispose of your soiled menstrual materials?

6. What are the reasons behind the manner with which you disposed of materials?

7. How important is the provision of WASH facilities to menstrual management?

Probe: ask if she change her napkins, number of times, where she does the changes and whether she clean herself

8. Do you have enough WASH facilities in your school/community?

Probe: the number of toilet facilities and the number in use (ask if they even utilize them at all, and if not why?), the water facilities available and whether there are available places to dispose sanitary napkins.

9. Do you have difficulties in changing your sanitary napkin in your school/ community?

10. What are these difficulties?

3. Objective 3: Challenges of menstrual managements among adolescents

11. Did you experience any challenges when managing your menses?

Probe: example of those challenges (difficulty in getting sanitary towels, physiological changes)

Probe: how does she resolve those challenges?

12. Where do you always get assistance from during your menstrual periods?

Probe: is it from parents, boyfriend, care taker or NGO

13. What do you always do to help yourself if you do not get support from those who are supposed to help you?

4. Objective 4: How menstruation Affects Adolescents' Social Interaction

14. Are there any activities you are prevented from participating in during your menstrual periods?

Probe: free to move, cook, and bath in your usual place or attend school

15. Have you ever found it difficult to take part in certain social activities because you are menstruating?

Probe: like standing exercises in class, playing games with friends, getting closer to friends and community services

16. Do people behave differently towards you when they are aware you are in your period?

Probe: staying away from you, denying the opportunity to come closer to them or stigmatised you.

5. Personal background

17. Please can you tell me more about yourself?

Probe: your name, age, level of education, your family, who she stays with

And for the out of school, ask about their highest level of education, marital status, the type of work and friends

6. Concluding questions/Recommendations

18. What advice can you give to the school authorities concerning menstruating girls?

19. What do you think should be done by the government to make menstruating girls comfortable?

20. If you were to advice parent/family members on menstruation of girls, what will you tell them?

NOTE!!!

Thank you so much for participating in this interview.
However, before I leave, is there any question/clarification?



UNIVERSITY OF CAPE COAST

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5TH NOVEMBER, 2020

Mr. Joseph Sobie Dery
Department of Population and Health
University of Cape Coast

Dear Mr. Dery,

ETHICAL CLEARANCE – ID (UCCIRB/CHLS/2020/28)

The University of Cape Coast Institutional Review Board (UCCIRB) has granted **Provisional Approval** for the implementation of your research titled **Menstrual Hygiene Management among Adolescent Girls in the Navrongo Municipality**. This approval is valid from 5TH November, 2020 to 4TH November, 2021. You may apply for a renewal subject to submission of all the required documents that will be prescribed by the UCCIRB.

Please note that any modification to the project must be submitted to the UCCIRB for review and approval before its implementation. You are required to submit periodic review of the protocol to the Board and a final full review to the UCCIRB on completion of the research. The UCCIRB may observe or cause to be observed procedures and records of the research during and after implementation.

You are also required to report all serious adverse events related to this study to the UCCIRB within seven days verbally and fourteen days in writing.

Always quote the protocol identification number in all future correspondence with us in relation to this protocol.

Yours faithfully,

A handwritten signature in blue ink, appearing to read 'Samuel Asiedu Owusu'.

Samuel Asiedu Owusu, PhD
UCCIRB Administrator

ADMINISTRATOR
INSTITUTIONAL REVIEW BOARD
UNIVERSITY OF CAPE COAST