EFFECTS OF MENSTRUAL HYGIENE MANAGEMENT ON THE SELF-ESTEEM OF VULNERABLE GIRLS IN COFFEE MINISTRY ORGANIZATION IN KIBRA CONSTITUENCY, NAIROBI COUNTY, KENYA

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DECLARATION

I declare that this thesis describes my original work and that it has not been presented in any other university for academic work.

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DEDICATION

I dedicate this research study to my mother and husband, who supported me through challenging times and inspired me to believe that my dreams are achievable.

I dedicate this study to my supervisors, who, through their expertise, have patiently guided, supported, and greatly contributed to the development of this research.

This thesis is dedicated to my friends Joy Achieng, Meek Mwende, Faith Njeri, Sammy Odhiambo and everyone who contributed towards its completion.

I honor Almighty God, who has given me good health, grace and strength throughout my research study.

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ABSTRACT

Menstrual hygiene management refers to processes and resources essential for women and girls to effectively manage their menstruation in dignity and safety. However, many girls, especially those in disadvantaged communities, continue to experience obstacles in menstrual hygiene management. The main objective of this study was to investigate effects of menstrual hygiene management on the self-esteem of vulnerable girls in Kibra constituency, in Nairobi County, Kenya. The objectives were to examine effects of menstrual hygiene products on the self-esteem of vulnerable girls; to establish effects of menstrual hygiene management education and awareness on the self-esteem of vulnerable girls; to examine effects of menstrual hygiene management sociocultural factors on the self-esteem of vulnerable girls and; to determine effects of clean sanitation facilities on the self-esteem of vulnerable girls during menstruation in Coffee Ministry in Kibra, Nairobi. Liberal feminism theory and Maslow hierarchy of needs was employed in determining the effects of menstrual hygiene management on self-esteem. Data was collected using both qualitative and quantitative methods through self-administered research questionnaires and interviews. Further, the study respondents consisted of 222 respondents aged 10 to 19, and 15 community workers all affiliated to the Coffee Ministry. A sample size was determined using simple and stratified random sampling that consisted of four strata based on age 10-12, 13-14, 15-16 and 17-19. A qualitative and quantitative approach was used to provide comprehensive and holistic data, which was analyzed through a descriptive and thematic approach. Collected data of this study were decoded and presented through graphs, tables, and charts using Statistical packages for the social sciences (SPSS). The study established that access to menstrual products boosted girls' self-esteem. Further, the findings of the study showed that many respondents exposed to menstrual education experienced high self-esteem levels. This study found out that access to clean, private, and secure sanitation facilities resulted in increased confidence and ease in menstrual management. Further, the study established that sociocultural factors led to shame and stigma. Therefore, multi-stakeholder interventions, that includes comprehensive menstrual education, provision of free or affordable sanitary products, improved school sanitation infrastructure, and challenging harmful cultural beliefs surrounding menstruation, are recommended.

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LIST OF ABBREVIATIONS

ANOVA: Analysis of variance

MHH: Menstrual Hygiene Management

NACOSTI: National Council for Science Technology and Innovation

RSES: Rosenberg Self-esteem Scale

SPSS: Statistical packages for the social sciences.

UNICEF: United Nation, Children's Fund

WASH: Water, Sanitation and Hygiene

WHO: World Health Organization

DEFINITION OF TERMS

To facilitate the understanding of this study, different terms are defined herein**:**

Menarche: For the purpose of this study, this term refers to the first occurrence of experiencing the discharge of menstrual blood for girls between the ages of 9 to 16 who have reached puberty.

Menstrual Hygiene Management: As used in this study, the word refers to the process and practices girls use to effectively manage their menstruation in dignity and safety that involves access to menstrual products, menstrual information, sociocultural factors and accessing clean sanitation facilities.

Menstrual Hygiene Products: In this study it is defined as menstruation materials used to collect, remove and contain menses. Such as commercialized menstrual materials, that include disposable and reusable products and homemade alternative products such as menstrual sponges.

Menstrual Education and Awareness: As used in this study the term refers to the process of providing information on hygiene practices, access to resources, misconceptions and stigma related to menstrual hygiene practices.

Menstrual Shame: In this study the term shall refer to feeling of embarrassment, being ridiculed, negative attitudes and secrecy associated with menstruation.

Menstruation: For the purpose of this study, a normal vaginal monthly discharge of blood, that occurs between 2 to seven days.

Sociocultural Factors: Operationally defined as traditional and spiritual beliefs, values, norms, restrictions, and social structures that influence communities' menstrual hygiene attitudes.

Sanitation Facilities: For the purpose of this study refers to infrastructure essential for accessing secure, hygienic toilets, with clean water, allowing girls to manage their menstruation in privacy, dignity and safety.

Self-esteem: In this study the term refers to self-evaluation, reflecting on self-worth, self-acceptance, confidence and ability to perform well in different activities during menstruation.

Self-worth: Operationally defined as a sense of value and respect a person assigns to self.

Vulnerable Adolescent Girls: For the purpose of this study shall refer to a girl between the ages of 10 to 19 that are living in disadvantaged surroundings, come from poor background, face health related challenges and lack basic needs.

CHAPTER ONE

INTRODUCTION AND BACKGROUND OF THE STUDY

1.1 Introduction

Although menstruation is a natural occurrence for adolescent girls it is characterized by challenges on accessing menstrual products, inadequate menstrual education, socio-cultural issues and inaccessible sanitation facilities. Menstrual experience has been found to have effects physically, emotionally and psychologically on girls especially on self-esteem.

This study therefore, was guided by the question of the effects of menstrual hygiene management on self-esteem of vulnerable girls. Self-esteem reflected on self-worth, self-acceptance, confidence and ability to participate in activities during menstruation. Further, the study was based on four objectives that include: lack of menstrual hygiene products, menstrual education and awareness in regards to menstruation, inaccessibility to clean sanitation facilities and sociocultural factors. This study delved on examining the effects of menstrual hygiene management on the self-esteem of vulnerable girls in the Coffee Ministry in Kibra, Nairobi County, Kenya.

Therefore, this chapter provides a brief overview of the thesis introducing the reader to background, statement of the problem, purpose of the study, objectives, research questions, significance of the study, scope of the study, delimitations, limitations assumptions, theoretical framework and conceptual framework.

1.2 Background of the Study

Menstrual hygiene management is progressively being recognized as a public health concern. The government and non-governmental institutions are increasingly addressing the health challenges exposed to gender equality and identifies the ability for programs to handle these challenges (UNICEF, 2019). According to UNICEF (2020) there are 1.8 billion individuals who menstruate worldwide every month. The majority of these menstruators are not able to go through the cycle in a healthy and dignified way. This is because of challenges such as lack of access to menstrual hygiene products, access to clean water, private clean sanitation facilities and limited awareness and education on menstrual hygiene management (World Bank Group, 2022).

According to Van Lonkhuijzen et al. (2022) challenges faced by people who menstruate do not only affect them physically but also their self-esteem. Lacroix, Gondal, Shumway and Langaker (2023) in their study suggested that menstruation is a monthly biological process that starts between the ages of 10 to 16 during puberty and ages of 45 to 55 during menopause (WHO, 2024). According to the management of menstrual hygiene in Budanilkantha's informal settlements are limited by poverty, stigma, and inadequate infrastructure; improving it requires combined efforts in education, WASH services, and changing social norms.

Abdel-Khalek (2016) pointed out that self-esteem is an evaluation of self, and self-conceptualization that individuals make and maintain with regards to themselves. Mayo Clinic Staffs (2025) suggests that women and girls manage their menstruation normally for two to seven days in a month. However, during the menstruation period, many adolescent girls face feelings of shame, embarrassment, stigmatization, loneliness and harassment

during a stage of life where their confidence and self-identity is developing (Sundari et al., 2024).

On the onset of menses girls encounter challenges in accessing suitable sanitary pads, receiving information on menstruation and unavailable safe, private and dignified facilities for changing and disposing used sanitary pads (World Bank Group, 2018). In Scotland over 20% of menstruators face challenges of accessing sanitary towels, 10% of them use irregular products like socks, old clothes, and tissue paper which expose them to genital infections (Medina-Perucha et al., 2020). Vulnerable girls may fail to experience a typical childhood because of the harmful menstrual discriminations and misconceptions (UNICEF, 2018).

According to Muralidharan et al. (2015) there is limited menstrual information on safe and varied use of sanitary pads in India because of cultural taboos and beliefs. According to Ramaiyer et al. (2023), menstruators in the United States experience shame, distress associated with occurrence and open conversation of menstruation. They perceive menstruation as a contamination and menstrual blood is represented by a blue colour instead of red during the commercial advertisement of menstrual products; these misconceptions influence how they deal with menstruation resulting in a negative impact on their self-esteem.

Therefore, AMREF (2023), found out that girls and women can live in dignity, confidence, unashamed and free from discrimination when their menstrual hygiene needs are fulfilled. Further, UNICEF (2018), established that stigmatizations, society norms and taboos associated with menses reduces learning opportunities and development of healthy behaviors. According to Betsu et al. (2024), healthy menstrual management and

government interventions can help in meeting the unmet demands of menstrual products, building girls' confidence and protecting their dignity.

Fauzia Yarim Laar et al. (2022), in their study conducted in the Northern Region of Ghana for adolescent girls in five junior schools, access to menstrual materials has a significant reduction in stigma and shame, because provision of free sanitary pads reduced chances of menstrual accidents among hence the girls menstruated in comfort and dignity.

In a study conducted for several Nigerian communities it was found out that poor menstrual hygiene practices result in psychological issues particularly low self-esteem, depression, anxiety and stress. Hence an impact on their performance in school (James & Olukayode, 2025). Further, a cross-sectional study conducted in Ethiopia among adolescent girls in primary level established that there is a significant correlation between poor menstrual practices and menstrual knowledge, and provision of clean and safe sanitation facilities (Ayele et al. 2025).

In Kenya menstrual hygiene is challenged by high poverty levels hence 65% of girls struggle to afford menstrual products (World Bank Group, 2022). Additionally, many parents are forced to prioritize the need for food and shelter over any other family essentials including sanitary pads; these results in siblings sharing sanitary pads risking infections (Kabiru, 2020). Further, unmet menstrual needs lead to low self-esteem, school absenteeism, shame and depression (Jaafar et al., 2023). Moreover, Hervey (2019), reported about a Kenyan girl who committed suicide after being embarrassed by her teacher who called her “dirty” and dismissed her for soiling her clothes.

According to studies there is insufficient menstrual knowledge and awareness on menstruation which has resulted in increased unhealthy hygiene practices that lead to

infection, cervical cancer, poor academic performance and school dropout (Belayneh et al., 2019). Girod et al. (2017), observed that a large number of adolescent girls in informal settings are uninformed about menses and have inadequate sanitation facilities. Kibuthu and Muasa (2023), noted that limited menstrual knowledge before the onset of monthly periods leads to low- self- esteem and negative menstrual attitude because of lack of psychological and physical preparation for menarche an event that occurs with less warning or suddenly (Marvan et al., 2017).

In Tanzania studies have shown that menstruation is surrounded with secrecy, shame and fear and that girls avoid people because of a belief that they can smell their menses. Additionally, they get mocked by boys in case of a menstrual leak (Mbatia, et al., 2024).

Recently a prominent Makueni's Executive committee member for Trade, Marketing, Industry, Culture and Tourism experienced a public outrage for insinuating that a girl was killed by a crocodile because of the smell of her menses. These sentiments forced the Makueni government to assure the communities of their unwavering commitment to end challenges related to menstruation (Hervey, 2019). Further, Wanganya (2018), noted that negative comments affect both the adults and adolescent girls' self-esteem especially those who experienced difficult life events like lack of sanitary pads. Knight (2020), in his study points out that traditional and religious gaps in the society make it difficult for girls to discuss menstruation issues with parents or care givers. Moreover, Rob (2019), observes that there is limited menstrual discussion with teachers due to stigma and shame

Adane et al. (2025), reported that improved condition and access of sanitation facilities lead to reduced school absenteeism. However, 53.6% of the school students stay

at home because of limited access to facilities for changing and disposing of their used menstrual pads in school. Additionally, Girod (2017), revealed that when changing facilities are in good conditions in the informal settings the dignity, safety, and hygiene of the menstruators similarly improve.

According to Hassan et al. (2024), adolescence is the time when establishing an identity for girls to orient them to adulthood, negotiate through life and form foundations for their academics and future life. Moreover, the formation of self-esteem results from interaction with the environment and it involves what people feel about themselves in relation to their accomplishments, (Yudha, et al., 2020). Meaningful relationship, good academic performance, positive world view and readiness to new risky things is connected to positive self-esteem (Inoue, 2020).

Hence, studies on menstrual hygiene practices have focused majorly on its effect on health risks, academic issues and have not explored the psychological aspect particularly self-esteem. Therefore, this study aimed to find the effects of menstrual hygiene management on self-esteem of vulnerable girls in the Coffee Ministry in Kibra Nairobi Kenya.

1.3 Statement of the Problem

Menstrual hygiene management is an integral part of the constitution of Kenya it stipulates the policy governing menstrual hygiene practices. However, it has been faced with serious challenges that have affected girls psychologically, particularly their self-esteem. Further, girls have been exposed to harmful cultures that result to discrimination (Ministry of Health, 2019). The people who menstruate struggle with lack of privacy, access to affordable and alternative menstrual hygiene materials during menstruation is

grossly associated with high poverty levels in Kenya. This is potentially harmful to the self-esteem of girls who have a challenge in attending, participating and performing in class activities (Dhabi, 2016). According to Manyara et al. (2023), people who menstruate struggle to access safe sanitary pads resulting in use of unhealthy alternatives such as dirty rags, tissue papers, newspaper, pieces of mattress, and cow dung. Others have been forced to acquire pads through transactional sex resulting in teenage pregnancy and increased transmission of HIV/AIDS (Dhabi, 2016). Moreover, vulnerable adolescent girls significantly get affected by the negative comments because they often internalize teasing and stigmatizing remarks from the community. Therefore, when they don't change their pads frequently, they get exposed to ridicule and isolation by peers because of unpleasant smells and stained clothes. The exclusion results in low self-worth since they lack adequate coping skills (Atieno, 2007).

Further, girls experience uneasiness especially when they are interacting with boys (Atieno, 2007). According to Vira (2020), adolescents who menstruate feel irritated, embarrassed and ashamed of menstrual leakage which hinders their progress. Moreover, Aidara (2020), points out that lack of water, sanitation and hygiene facilities is a violation of a girl's privacy, right to human dignity and right to equality. According to Wanganya (2018), the Kenyan government has tried to mitigate this by providing free sanitary pads to girls going to primary and secondary public schools however, many girls are still going through menstrual challenges. According to Namuwonge et al. (2025), recent studies have explored more on the impact of menstrual hygiene management on economic interventions and cultural issues however little is done on psychosocial effects mainly on self-esteem.

Despite the concerns surrounding menstrual practices there is paucity of studies on menstrual hygiene management and its influence on self-esteem among vulnerable girls living in informal settings. Therefore, this study sought a deeper understanding of the effects of menstrual hygiene on the self-esteem of young girls living in Kibra constituency in Nairobi Kenya.

1.4 Purpose of the Study

The purpose of the study was to determine the effects of menstrual hygiene management on the self-esteem of vulnerable girls in Coffee ministry, Kibra constituency, Nairobi, Kenya.

1.5 Objectives of the Study

The study was guided by both general and specific objectives.

1.5.1 General objective

The study general objective determines the effects of menstrual hygiene management on the self-esteem of vulnerable girls in Coffee Ministry, Kibra Constituency, Nairobi, Kenya.

1.5.2 Specific Objectives

i. To establish the effects of lack of menstrual hygiene products on the self-esteem of vulnerable girls in the Coffee Ministry in Kibra.
ii. To determine the effects of menstrual hygiene management education and awareness on the self-esteem of vulnerable girls in the Coffee Ministry in Kibra.
iii. To examine the effects of sociocultural factors regarding menstrual hygiene management on the self-esteem of vulnerable girls in the Coffee Ministry in Kibra.

iv. To determine the effects of inaccessibility to clean sanitation facilities on the self-esteem of vulnerable girls during menstruation in the Coffee Ministry in Kibra.

1.6 Research Questions

i. What are the effects of menstrual hygiene products on the self-esteem of vulnerable girls in the Coffee Ministry in Kibra?

ii. What are the effects of menstrual hygiene management education and awareness on the self-esteem of vulnerable girls in the Coffee Ministry in Kibra?

iii. What are the effects of sociocultural factors regarding menstrual hygiene management on the self-esteem of vulnerable girls in the Coffee Ministry in Kibra?

iv. What are the effects of inaccessibility to clean sanitation facilities on the self-esteem of vulnerable girls during menstruation in the Coffee Ministry in Kibra?

1.7 Significance of the study

The study is essential for policymakers especially to guide them in coming up with strict measures that will influence a balanced distribution of sanitary pads to all menstruants. The study was important because it contributed to the existing body of knowledge that addressed menstrual management and self-esteem of the adolescent vulnerable girls. This knowledge can not only help in improvement of their self-worth but also help in curbing down maladaptive behavior.

The findings provided knowledge on how the government would assist in minimizing lack of access of sanitary pads. Furthermore, the study covered an academic gap because despite many studies have explored on menstrual hygiene management there is limited scholarly work on effects of menstrual hygiene on the self-esteem of vulnerable girls in Coffee Ministry.

1.8 Scope of the Study

The study focused on the effects of menstrual hygiene management on the self-esteem of vulnerable girls in Kibra Constituency, Nairobi, Kenya. The study aimed to determine if access to menstrual hygiene products, menstrual hygiene management education and awareness, clean sanitation facilities and who enjoy supportive sociocultural factors, promotes changes in their self-esteem levels. The study targeted 222 vulnerable girls between the ages of 10 to 19 who were external beneficiaries receiving support from Coffee Ministry, as well as 15 Coffee Ministry community workers. Coffee Ministry is a non-government organization located within the informal settlement of Kibra, one of the largest informal settlements in Africa.

The beneficiaries consisted adolescent girls who have experienced physical, emotional, sexual, health and psychological challenges in the community. The organization provides a range of services such as: food support programs for the families, academic sponsorship, library services for personal studies and completing school assignments, day care services, life skills training and distribution of sanitary towel.

The study measured menstrual hygiene management's effect on self-esteem by use of surveys and interviews over three months. Therefore, the scope was selected because of the unique challenges they face, the high levels of vulnerability among the beneficiaries, limited access to menstrual products, the organization’s ability to reach adolescent girls from all the five wards in Kibra Constituency.

1.9 Delimitations of the Study

This study did not cover the opinion of parents, stakeholders, boys, girls from wealthier communities and adults because tracing them would require considerable time, resources and they are also not relevant in this study. The study sought to focus only on

vulnerable adolescent girls between the ages of 10-19 and their community workers in the Coffee Ministry in Kibra because of constraints in time and budget. The study was conducted among girls who are beneficiaries of Coffee Ministry to ensure that the research remained focused and specific. Moreover, in this geographical setting they will be easily accessible and secure.

1.10 Limitation of the Study

The study was limited by the fact that some respondents were unwilling to answer the survey questions due to fear of their identities or personal information being disclosed. Researcher mitigated this by assuring them of the confidentiality of their identity. However, a few did not manage to come for the survey. Community workers were interviewed to gather more information and experiences concerning effects of menstrual hygiene management on the self-esteem of the vulnerable adolescent girls. The study used a mixed approach to collect data because of time constraint and logistic challenges. The data collection was done through questionnaires to provide detailed information on experiences of menstrual hygiene management. The qualitative data collection was limited to a few respondents because of time and financial challenges.

1.11 Assumptions of the study

It was presumed that all the respondents would understand the survey questions and provide relevant information as required in the questionnaire, and interviews. It was also assumed that the vulnerable adolescent girls would voluntarily cooperate throughout the study and they would understand their menstrual hygiene management experiences. Additionally, it was assumed that the Coffee Ministry study population would be a clear indication of the effects of menstrual hygiene on vulnerable adolescent girls' self-esteem

in Kibra. The study further assumed that the research instruments menstrual hygiene management questionnaire, Rosenberg self-esteem scale and interviews would accurately measure the respondents, self-esteem levels and menstrual hygiene practices. Moreover, it was presumed that the participants have experienced menstruation and this experience has influenced their self-esteem.

1.12 Theoretical Framework

1.12.1 Introduction to Theoretical Framework

The thesis was anchored on Liberal Feminism Theory with the key figures being Mary Wollstonecraft, Betty Friedan and National organization for women (Fiveable, 2024). According to Trivedi and Mehta (2019), Maslow's Hierarchy of Needs theory by Maslow Abraham Harold in 1943. Both theories provided complementary perspective for helping in exploring the effects of menstrual hygiene management on self-esteem of vulnerable adolescent girls and offered a holistic understanding of how menstrual hygiene practices affect an individual's well-being.

1.12.2 Liberal Feminism Theory

The study was guided by the Liberal Feminism Theory that was established in the eighteenth, nineteenth and twentieth century. According to Sangeetha et al. (2022), this theory emerged from a political philosophy of liberalism known as the first wave of feminism. Further, the author emphasizes that the theory has advanced and is rooted in ideologies of famous liberal developers such as Mary Wollstonecraft's, John Stuart Mill, Elizabeth Cady, Virginia Woolf in the second wave of feminism. This second wave focused on sociocultural, economic issues and equality (Brunell & Burkett, 2025). Equality is demanded in various situations for example in homes, workplace and education, work and

third feminism movement focused on class, role of race, ethnicity and nationality (Nehere, 2016). Moreover, most of the feminist now are focusing on challenging fundamental values, practices and norms within and across societies (Wolff, 2007).

This theory assumes that humans are rational beings who can recognize their capabilities to think and perform when provided with enough information and opportunities. It also assumes that the state can and should work together with women to promote their autonomy. The theory holds that all forms of discrimination and prejudice should be put to an end by enacting fair treatment for all genders to acquire the same fair attention and considerations (Bailey, 2016).

In this study feminist theory shows how existing challenges such as gender inequality, economic barriers, systems, societal stigma and cultural taboos shape the experiences of girls during menstruation. These challenges limit access to menstrual materials, education and awareness and safe sanitation facilities. A change in the policy for providing menstrual products, advocacy for menstrual matters and education to promote menstrual equity could improve a girl's self-esteem (Brunell & Burkett, 2025).

Provision of suitable sanitary towels helps girls to overcome the fear, shame and stigma surrounding menstruation. This helps to end ignorance by promoting equality and a better life; oppression of people in a society is attributed to ignorance which can be removed by offering education to facilitate a better life based on equality for all (Tull, 2019). This theory suggests that freedom is autonomous and that we should personally choose or politically co-author the conditions we live in. The autonomy of women is directly proportional to the sufficiency of enabling conditions in their lives or the social and institutional arrangements surrounding them (Tesiso, 2020).

However, girls and women are inadequately represented in the process of such democratic self-determination making it prejudicial to their autonomy. This deprives them economically leaving them with limited access to the most appropriate pads and access to private changing rooms. Such autonomy limits women's ability to access their preferred choice of sanitary pads and unfairly subjects them to the status quo. If not deescalated it may culminate into deformed preferences like transactional sex or pornographic modelling for sanitary towels due to low self-esteem (Enyewe, and Mihrete, 2018).

Liberal feminism highlights the importance of equal access to menstrual products, education and sanitation facilities which aligns with research objectives. However, according to Bindel (2020), the liberal feminism emphases mostly on personal development instead of a community focused empowerment which reduces chances of addressing the sociocultural norms and influence of peers. Hence the need for Maslow's hierarchy of needs theory that assumes human motivation is structured in level.

1.12.3 Maslow's Hierarchy of Needs Theory

The study is also guided by the Maslow hierarchy of needs theory developed by Abraham Maslow in 1943. According to Maslow's theory, there are five categories of human needs starting from psychological needs, to safety needs, love, and belonging needs, esteem needs and, the highest self-actualization. Maslow demonstrated the theory in the form of a pyramid, and has a five-set hierarchy of needs. These needs are met in a sequential order from the bottom which is the basic needs to the top which is the most advanced needs. The author shows that these needs are supposed to be fulfilled from the most fundamental to the highest needs. Failing to meet the needs at any level limits progress to the next level (Maslow, 1943).

Maslow establishes that physiological needs are the most basic for human survival for example water, food, warmth, and rest. Therefore, in menstrual hygiene management access to sanitary products, water, and sanitation facilities are essential. Lack of these needs will lead to discomfort, shame, fear, and health problems (Amadei, 2023).

Further, Maslow noted that people need safety and security, however lack of it results in individuals being anxious, and worried which can affect their overall well-being. Therefore, limited access to menstrual hygiene management to individuals such as menstrual products would lead to social stigma, ridicule because of soiling clothes which increases their vulnerability (Sommer et al, 2017).

Love and belongingness needs are required to connect, and create a sense of belonging. These connections are the source of emotional support, comfort, and a sense of acceptance. However, during menstruation, vulnerable girls avoid school and social activities because of shame, stigma, isolation, and mockery because of poor menstrual hygiene management (Mary West, 2022).

The fourth level in Maslow's hierarchy of needs is esteem needs. The focus is on feeling a sense of accomplishment, respect, and esteem that result in confidence and physical well-being, and a positive self-image. Lack of menstrual hygiene management leads to low self-esteem, poor academic performance, and lowered aspiration. (Sommer et al., 2017).

The highest set of needs is self-actualization which is achieved when all the other four are satisfied. When other's needs are met the vulnerable teenage girls are not hindered by menstrual-related challenges and can actively participate in social activities, and fully engage in education leading to self-actualization. Therefore, the theory supports the idea

that effective menstrual hygiene management can lead to improved confidence and high self-esteem. However, some studies show that human motivation is overgeneralized by the proposal of linear progression of the needs because the behavior of people is multifaceted and often driven by numerous needs (Ghaleb, 2024).

1.13 Conceptual Framework

Independent Variable Dependent Variable

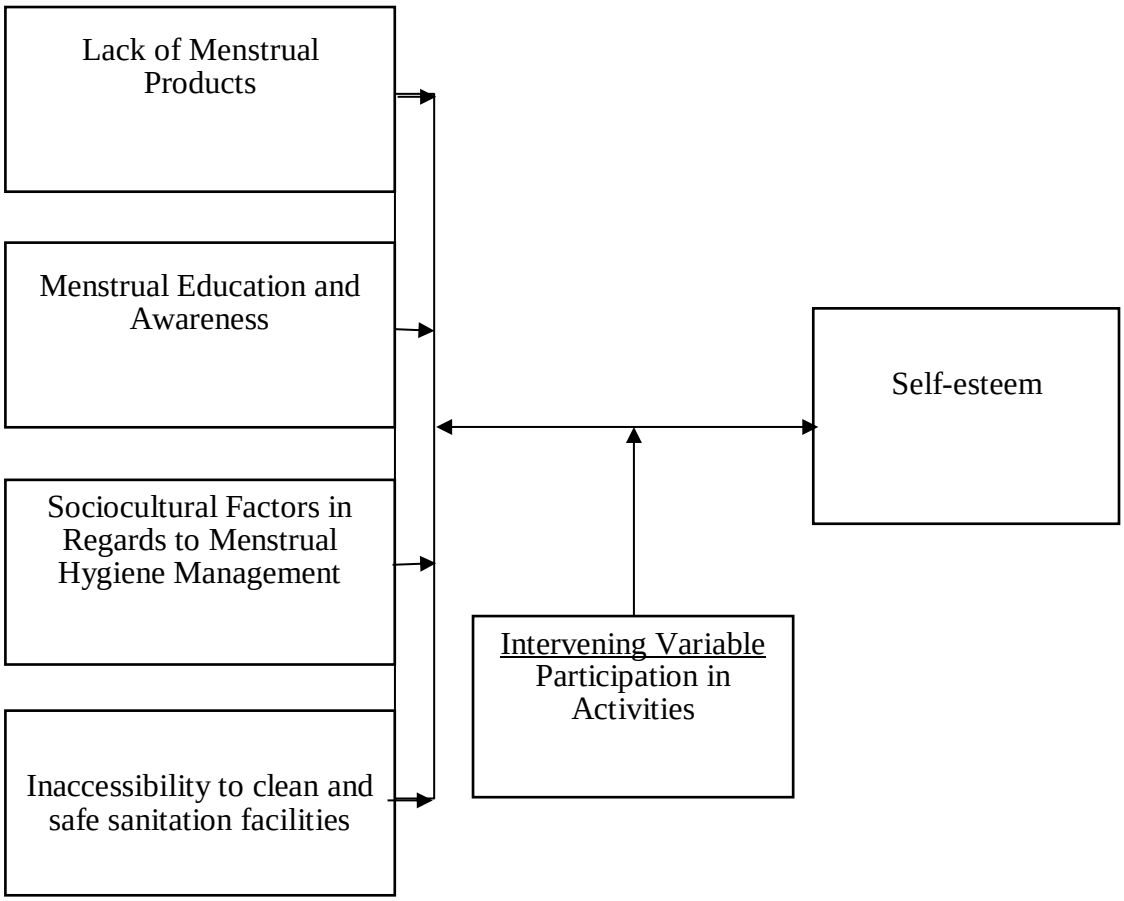

Figure 1.1: *Conceptual framework*

The study is illustrated by the conceptual framework showing the effect of menstrual hygiene management has on the self-esteem of vulnerable girls. The vulnerable girls are between the ages of 10 to 19 supported by the Coffee Ministry who are living in Kibra. They are not able to access the basic needs such as food, shelter water and sanitary products. Conceptual framework is a structure that explains the progress of a phenomenon that needs to be studied. It involves giving a description of the two main concepts of a study, hence, determining principles affecting the structure of the research and the association between a dependent and independent variable (Adom et al., 2018).

The effect of menstrual hygiene management is influenced by various interconnected factors. The conceptual framework of this study includes menstrual hygiene products, menstrual education and knowledge, clean sanitation facilities and sociocultural factors. These variables influence the self-esteem and well-being of the vulnerable girls.

Menstrual hygiene challenges significantly lead to embarrassment, physical discomfort, negative perception about self-worth and individuals' ability to reach full potential. Therefore, access to menstrual resources, including access to tampons, reusable menstrual cups and menstrual pads, helps girls manage their menstrual in dignity and confidence, menstrual education increases confidence because of a sense of preparedness and understanding of menstrual matters, access to clean sanitation provide a safe environment for menstruation and sociocultural factors which positive menstrual experiences increase confidence, self-esteem and self-perception will be enhanced hence reduced stigma, shame linked with menstrual hygiene practice. Participation in activities plays an intervening role because it explains how access to menstrual products, menstrual knowledge, sanitation facilities and reduced menstrual stigmatization increases their

opportunity to attend school more regularly. Participation in school activities results to a sense of belonging, safety, dignity, confidence and eventually increased self-esteem.

Therefore, the study determined the effects of menstrual hygiene management on the self-esteem of vulnerable girls in Coffee Ministry Kibra Constituency.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter focuses on reviewing literature on Menstrual Hygiene Management (MHM) and self-esteem, particularly on vulnerable adolescent girls. There will be exploration of the effects of accessibility of menstrual sanitary products, menstrual hygiene management awareness, availability of sanitation facilities, beliefs, and cultural issues in Kibera, Nairobi Region.

2.2 Review of Literature

During adolescence the self-esteem formation process is promoted and encouraged by both the instructors and the parents (Abdel-Khalek, 2016). Rosenberg (1989) defines self-esteem as the general attitude about self that could be negative or positive. Positive being high self-esteem which shows a person to be good while negative depicts a person as one who generally lacks self-respect and has self-rejection. Self-esteem is made up of several interrelated components that contribute to a person's self-perception. These core components are self-worth, global self-esteem, self-confidence, self-respect, social esteem, and self-acceptance that are essential for a healthy and balanced self-esteem.

According to Rosenberg (1965), self-esteem is an individual's thoughts and feelings about self-worth or a global positive or negative self-evaluation where an adolescent respects and considers herself worthy. Leary and Downs (1995), define self-esteem as the personal inner evaluation of achievements, relationships, the rate at which they are allowed or excluded in social groups, and motivation of prompt actions when the sense of social inclusions reduces to extremely low levels. Abdel-Khalek (2016), stated that self-esteem

is an individual perception or subjective appraisal of one's self-worth, self-respect, self-confidence, and the extent to which the individual holds positive or negative views about self. Further, self-esteem is associated with what an individual believes about personal abilities and skills. One of the simplest ways to describe self-esteem according to Webster's Dictionary (2022) is satisfaction in oneself. Another meaning of the same dictionary is one's good opinion of dignity or worth.

According to Hagen et al. (2020), self-esteem reflects individual feelings, which is connected to other psychological issues that include self-worth, self-confidence, self-concept, self-perception, and self-respect. According to Masselink et al. (2018), Healthy self-esteem involves confidence, competence, a sense of belongingness, security, and self-worth leading to psychological well-being, increased intrinsic motivation, and holistic well-being (Cherry K, 2023). Moreover, self-esteem is essential for adolescents because it is at this stage of life when they become more knowledgeable about self, organization, and transitioning to adulthood (Mastorci, et al., 2024).

Fennel (1998) observes that individuals with self-esteem appreciate and acknowledge self-weaknesses and strengths and are eager to participate in new complex things and make independent decisions. Healthy self-esteem is seen to improve social and academic life, influence good relationships, positive attitudes, and reduce antisocial behaviors (Mann, et al, 2004). In his study, Hepper (2016), noted that adolescents suffering from low self-esteem struggle to attempt doing tasks that they suspect could lead to failure or shame, they struggle to form relationships, lack self-drive, are irritable, and engage in risky behaviors. According to Berg et al. (2023) low self-esteem is caused by unsupportive caregivers, failure, unmet expectations, bullying, discrimination, poverty, and stressful life

events. Lack of menstrual hygiene education, limited access to menstruation products and proper hygiene practices lead to low self-esteem and insecurity (Regional Health-Americas, 2022).

Further, Ridley et al. (2020) stated that people from poor backgrounds are not able to provide basic needs and they experience feelings of hopelessness, helplessness, and anxiety. These failures make them believe they are failures. The study further points out that they experience a sense of guilt because of unmet expectations, inability to access many options and difficulty in influencing change.

Adolescent girls start menstruating between the ages of 10 to 16 years old. According to Worku, et al. (2024) the adolescence stage is marked by mental, physical, social, and emotional changes that determine how healthy or unhealthy an adult life would be. Therefore, the onset of menstruation is one of the most important changes experienced by adolescent girls, and it can lead to long-term effects in their lives, hence the need for healthy menstrual management. World Bank Group. (2022) points out that healthy management of the monthly periods entails practices that are used to maintain cleanliness, good health, and comfort during menstruation. Further, it involves clean, appropriate menstrual products such as pads, tampons, and menstrual cups, maintaining personal menstrual hygiene, proper disposal of used sanitary products, and clean sanitation facilities. However, in developing countries girls and women are affected by inappropriate menstrual practices (Sommer et al., 2016).

According to Deshpande et al. (2018), personal hygiene is necessary for adolescent girls and women, particularly during menses. Unhygienic practices during menstruation lead to various unpleasant results such as sexually transmitted diseases and urinary tract

infections. Further, Shah et al. (2023) suggest that unhealthy menstrual hygiene management can lead to body dysmorphia, low self-esteem, and irresponsible sexual conduct. Unsafe menstrual practices may result in emotional stress, uneasiness, and embarrassment (World Bank, 2022). In their study Shibeshi et al. (2021), suggest that practicing safe and effective hygiene management equips with skills, and information related to menstruation and establishes grounds for healthier development among adolescent girls, which advances their self-esteem.

However poor practices of menstruation negatively influence their well-being, dignity, and privacy resulting in worry (Method et al., 2024). According to the World Bank (2018), safe menstrual hygiene practices are the basic role for menstruators to reach their full potential. Further, the author suggests effective hygiene management needs a cross-sectorial holistic approach because its negative impact cuts across sectors. Hence, all shareholders can endeavor to find lasting solutions for the challenges surrounding menstruation that hinder healthy practices during menstruation. Therefore, there is a dire need to understand the effects of Menstrual hygiene management (MHM) on adolescent girls' self-esteem because of its great contribution to the present and future life.

2.2.1 Effects of lack of Menstrual hygiene products on the self-esteem

Mann Global Health (2021) found out that approximately worldwide 300 million women menstruate in a given day. However, the World Bank (2022) reported that around the world girls are struggling with menstruation management due to limited access to menstrual products, cultural, socio-economic, and unavailability of sanitation infrastructure. Mann Global Health (2021) revealed that there is limited preference for other menstrual products such as menstrual cups, tampons, and reusable sanitary pads. This

preference is attributed to the fact that they are easy to dispose of and convenient to change. Moreso, a study in Australia found that reusable pads and menstrual cups are preferred because of being affordable and eco-friendly (Ramsay, et al. 2023).

In his study, Uddin (2020), found that in Bangladesh women from poor backgrounds would use rags because the sanitary pads were being sold at a high cost. Therefore, their government resorted to its textile industry which used cotton from waste clothes to produce alternative pads that are inexpensive. Moreover, in Namibia, the government made a Value Added Tax (TAX) exemption on sanitary products to reduce the economic burden for women and girls to enable them to manage their menstruation with ease and dignity (Shomuyiwa, et al., 2024). Hence for a girl to maintain her self-esteem and self-dignity access to affordable proper hygiene products is necessary (Das et al., 2015).

Hennegan et al. (2020), found that almost 90% of the schools where female students were practicing improper menstrual hygiene management (MHM), experienced feelings of fear, embarrassment, and uneasiness that could lead to emotional problems. Hennegan et al. (2019), stated that emotional challenges create low self-esteem and reduced confidence. Moreover, Shallo, et al. (2018), suggest that a lack of sanitary pads hurts self-esteem because during menstruation a sense of unpreparedness may develop, and discomfort because of unsuitable alternative products that can cause irritation, infections, and shame. The author further points out that individuals may feel insecure or judged in social situations especially when they soil their clothes. When menstrual products are inaccessible the general motivation to participate in class diminishes, emotional health is affected, and

fear of staining clothes and discomfort end up in feelings of worry and shame (Sommer, 2010).

According to Mann Global Health (2021), there are 14 million menstruators in Kenya. However, Amref Health Africa (2020), and Amref Health Africa (2023), reported that 65% of menstruators in Kenya are not in a position to afford sanitary pads because of high cost. Further, Mann Global Health (2021), noted that 87% of menstruators in Kenya use commercial menstrual products. In a study, conducted on school-going females in Ethiopia, Sahiledengle, et al. (2022), Commercial sanitary pads were being used by 35% of girls while 55% of girls used homemade substitutes when menstruating. In a similar study 82% of respondents use disposable pads, while the reusable pads are used by 4 % and 13% use non-commercial homemade products. Therefore, the government bears the responsibility to provide hygienic and affordable alternative menstrual products by establishing policies that support the provision of Value added tax (VAT) free on menstrual products (Shomuyiwa et al., 2024). Hennegan, et al. (2019), further when menstruators' self-motivation is enhanced, their academic performance improves, well-being, and happiness increases.

Further, Benshaul-Tolonen (2019), revealed that studies show when girls are provided with menstrual materials the rate of sexual transmission reduces. Miiro, et al. (2018), established that access to proper menstrual products assures that a girl menstruates discreetly and in comfort.

Moreover, Manyara and Okube (2023), conducted on adolescent girls between the ages of 10 -19 in a Mixed Primary school known as Bocharia in Nyanza province of Kenya

found out 56.6% of the surveyed girls used unhygienic alternatives including cotton wool, as rags, pieces of mattress, rolls of tissues papers, nylon papers and leaves.

Despite challenges in the affordability of menstrual products Kenya is one of the first countries to revise and implement reforms on menstrual hygiene products to make them more affordable (World Bank, 2022). Moreover, the government's sanitary towels initiative has increased the confidence of adolescent girls as pointed out in the study conducted on 370 female students and 50 headteachers (Mutune, Okoth and Mugambi, 2024). Further, Amolo (2024), found out that rural Kenya menstruators encounter a need to engage in unsafe transactional sex to get money to buy menstrual products (Tellier & Hyttel, 2018). Moreover, Kumar et al. (2023), report that effective menstrual hygiene practices enhance a girl's self-esteem.

Therefore, there is a need for all adolescent girls to access appropriate menstrual products according to their preference because of their direct contribution to the self-esteem of girls and women. The impact is severe because it results in feelings of low self-worth, shame, and embarrassment. Further, the policymakers can form policies that endorse the manufacture of affordable suitable pads and ensure they are accessible to menstruates in rural regions. Moreover, the government could eliminate the law of taxing sanitary products as it discriminates against women and girls. By addressing the effect of access to menstrual hygiene products on the self-esteem of adolescent girls they can feel dignified, empowered, secure, and confident when menstruating.

2.2.2 Effects of menstrual hygiene management Education and awareness on self-esteem.

However, many adolescent girls, mainly those who live in lower and middle-income countries, have no prior knowledge about managing their periods and they don't

know who to ask for assistance. Many who turn to their mothers are misled by mothers who unwillingly discuss menstrual matters.

According to Dixit et al. (2016), A study conducted on 100 girls between 12-16 years in India, found that information about menstruation is passed by mothers compared to menstrual knowledge received from both public and private schools. Further, in a study conducted on 448 girls in secondary schools in Bangladesh found 69% of the adolescent girls, to have the right information concerning menstrual management (Ahmed et al., 2016).

In their study, Rani et al. (2022), found that girls aged 10-19, in rural and urban areas of India, had limited education and awareness on poor menstrual practices. The study also reported that menstrual cycle patterns, age, area of residence, parents' education, and class level factors were associated with low self-esteem. According to Shah et al. (2023), unsuitable menstrual hygiene practices as a result of limited knowledge can be the reasons for harmful sexual habits, unrealistic body image, and low self-esteem (Sychareun et al., 2020). Shah et al. (2023), in a study for 300 adolescent females' girls aged 13 and 22 found 44.3% of the girls had participated in menstrual hygiene education primarily conducted by healthcare professionals.

Further, Srinivasan et al. (2019), In a study conducted among 758 students in India both male and female found that 75.2% of both female and male broadly believed in the misconception that menstruation was poisonous. Girls encountered menstrual shame and stigmatization they were referred to as impure during menstruation (Mohammed et al., 2020). Adane et al. (2023), point out the necessity to promote menstrual health because it

helps in reduction of stigma, improved healthy menstrual practices, and general well-being and safe management of their menstrual health (Van Eijk, et al., 2016).

Mohammed (2020), reported that terms such as "Red card," and "Palm oil" were used to symbolize menstruation in schools and the local community. Further the study noted that teenage girls in their later years were less likely to have insufficient knowledge about menstruation compared to those aged 10–14 years.

According to Rados (2017), negative attitude towards menarche relates unfavorably with self-perception in menstruation, resulting to lack of readiness to plan for menarche, acceptance of society unhealthy beliefs on menstrual matters, increased unhelpful secrecy and low self-esteem accounting for especially for lower age at the menarche stage. According to Shah et al. (2023), girls refrain from conversation on menstrual issues. Chandra-Mouli et al. (2017), suggest that the key impediments to girls' self-confidence, personal growth, and knowledge are lack of preparation, information, and improper menstrual hygiene practices.

According to Fehintola et al. (2017), respondents described menstruation as an abnormal or pathological procedure, 39% said that it is related to hormones, others said that while 40% said that it is a result of virginal bleeding and 22% that it is caused by uterus shedding. Esimai and Omoniyi (2022), in a cross-sectional study, menstrual hygiene information was low among the surveyed 315 students 64% were not well informed on menstrual hygiene management. Ahmed et al. (2020), found that the girls who were using unsuitable menstrual material had limited knowledge on menstrual practices. Further, Fehintola et al. (2017), in Nigeria school-going girls ranging from 31%to 56% were using

rags and pieces of clothes instead of sanitary pads, and 11% of girls from Ethiopia changed only once in a day their used pads.

Kumar and Srivastava (2011), study of 117 adolescent girls and mothers found that beliefs, culture, education, family environment, and attitude of a girl influence the social and cultural practices about menstruation. According to a baseline survey conducted in Tanzania and Zimbabwe by Tamiru et al. (2015), cultural myths and taboos have been shown to affect menstrual knowledge leading to the exclusion of girls from various social and cultural activities.

Addressing this issue involves promoting open conversations, comprehensive menstrual education, and challenging stereotypes to create a more supportive environment (Bobel, 2010; Van Eijk et al., 2019). Adolescent girls opt to miss school to avoid shame related to menstruation and the teachers are not ready to give responses to questions about menstruation. Therefore, menstrual education largely affected girls' attitude on menstruation.

2.2.3 Effects of inaccessibility to clean sanitation facilities on the self-esteem

It is challenging for girls to manage their menstruation effectively without access to clean, private sanitation facilities (World Bank, 2022). Miller et al. (2023), findings in a study conducted in India and Ethiopia for girls between the ages of 12-22 high self-esteem and self-efficacy are associated with access to private toilets among adolescent girls, and boys because it improves their well-being and comfort On the other hand, toilets without doors, or with unlockable doors interfere with their discretion and safety which lead to a feeling of shame (World Bank Group, 2022).

According to Singolyo and Ngussa (2019), investigating the correlation between the self-esteem of female students and the availability of menstrual facilities for 320 girls in Monduli public secondary schools there was a positive relationship between self-esteem and proper sanitation, as well as the correlation between the quality of toilets and the availability of water, hence a high self-esteem. Tavishi (2025), argues that clean toilets particularly for the underprivileged in the communities is essential for the restoration of dignity and sense of safety. The condition or quality of the facilities is assessed by availability of disposal options of used sanitary pads, access to clean water and hand-washing places (Ballard Brief, 2025). According to Agyei et al. (2017), there is a shortage of sanitation resources, water, and poor hygiene in Uganda and Tanzania schools. Therefore, enhancing sanitation facilities results in good improved dignity, high self-esteem, and a good sense of civic pride (Malolo et al., 2021). However, in the rural areas of Kenya the issue of changing facilities is a challenge because it was observed that 6% of schools do not have facilities for sanitation and 84.4 % do not own a handwashing station (WHO/UNICEF, 2021).

Akanzum and Pienaah (2023), stated that when the sanitation facilities do not provide comfort and privacy, girls become distracted, shy and perform poorly academically. Consequently, providing them with private toilets and places of change creates a sense of security, comfort, and confidence. Plummer (2017), noted that 65% of menstruators in rural Kenya dispose used menstrual pads in pit latrines as well as 50% in the urban areas, others throw in the garbage from the urban 39 % and the rural 22% respectively, a number of them dispose through burning while others use reusable menstrual products.

According to Higgins (2018), only 32% of schools had a private place for girls to change their sanitary products. Further, Alexander et al. (2014), showed that schools provided separate pit latrines for girls but only 33% of these toilets were lockable. Sampson (2019), only a third of rural schools provided a place where girls can manage their periods, privately, forcing many to use their backyards at home or sleeping areas as changing areas. Another study found that only 30% of Kenya had access to improved sanitation facilities.

The 2010 Constitution of Kenya stipulates that access to water and sanitation is a basic human right. Its purpose is to preserve the self-respect of persons and societies by the advancement of social justice (Ministry of Health, 2020). Therefore, this study is significant in exploring more on the contribution of access to sanitation facilities and suggesting solutions that can enhance vulnerable girl's self-esteem.

2.2.4 Effects of sociocultural factors regarding menstrual hygiene management on the self-esteem

According to Maulingin-Gumbaketi et al. (2022), across the globe, menarche and menstruation are deeply influenced by social and cultural beliefs, norms, and practices, which can influence women's ability to manage menstruation with dignity. Although Menstruation is a biological process that is normal and an indication that a girl has entered into womanhood (Amatya et al., 2018). Many societies hold secrecy and misinformation caused by the stigma and cultural taboos surrounding menstruation.

Mahon and Fernandes (2010), revealed that several myths link menses with illnesses and impurities and personal freedom is engulfed by prohibitions from attending schools, religious places, and cooking. These restrictions lead to feelings of unworthiness, loneliness, and low self-esteem because they infringe on a menstruator's independence and self-expression. Moreover, UNICEF (2021), established that girls are not allowed to

interact with their fathers or touch anything because of the unbearable consequences such as curses. Mohammed and Larsen-Reindorf (2020), found that during menstruation 85.7% of the respondents were not active in religious matters, 73.2% believed it is unclean and 36.4% experienced it in privacy. Additionally, Arora (2021), established that a lower self-esteem rate is reported majorly by girls living in areas where they experience stigmatization, and negative perception. Limited open conversation on menstrual matters makes individuals who menstruate to feel inefficient, worried and insecure about their personal abilities and socialization (Akerman et al., 2019). This practice results in menstrual shame, worry, stigmatization, and poor menstrual hygiene practice (Thakuri et al., 2021).

Korir et al. (2018), from a study conducted to 96.8% of Maasai community members reported that among the menstruators 37.8% experienced stigma, 44.7% went through menstrual shame, 23.3% struggled with anxiety and 17.5% stated menstruation is a taboo topic. Findings from the study by Altunkurek et al. (2024), stated that unlawful cultural norms such as female genital mutilation, experience accumulation of blood and obstruction behind the areas that were deeply cut. Furthermore, Mason et al. (2013), argues that harmful attitudes and secrecy related to menstruation in many societies, lead to stigma, embarrassment, poor academic results and negative social interactions. Therefore, addressing this research can be beneficial in developing ways of dealing with harmful social and cultural issues and promote better experiences during menstruation.

2.3 Summary of review of Literature and Research Gap

Many studies have explored more on menstrual hygiene and their impact and association to academic performance and physical health of women and girls. However,

there is limited literature addressing the effect of menstrual hygiene practices on social and psychological impact specifically on self-esteem of vulnerable adolescent girls. Many existing studies have not paid much attention to the contribution of social and cultural factors that have impacted female experience and attitude towards menstruation. Studies to explore more on the societal norms, and taboos, the stigma experienced by teenage girls and its influence on the self-worth and confidence of menstruators.

There is inadequate exploration of studies on how access to menstrual products, education, access to facilities during menses and socio-cultural jointly impact on a girl's self-worth and confidence. Many studies have promoted policies for free menstrual products, removal of tax to make pads affordable and access to private facilities with water stations, however there are a few studies that evaluate whether they have been implemented and their role in reducing stigmatization and improving self-esteem.

Most research has focused more on the impact of menstrual hygiene practices in the institutions and there is limited exploration on family perception, and social expectations such as restrictive beliefs that makes the girls feel ashamed and inferior. Minimal open conversation on menstrual matters in the families especially with the fathers or male caregivers makes the girls rely on misinformation. The female may develop a negative attitude because menstruation is demonstrated as a taboo topic and a burden. Further the girls lack the support they disserve from their families and significant others who are afraid of giving guidance on menstruation issues.

Further studies have left out the role of peers' influence and menstrual stigma where they are afraid of being teased, by boys in the community and they are afraid of being seen carrying menstrual products. These girls may be embarrassed to join social activities like

sports because they are afraid of being judged and labelled as dirty. More research in the community may help foster a supportive environment and challenge the negative sociocultural narratives. This research aims at addressing these gaps by exploring the specific effects of menstrual hygiene management on vulnerable girl's self-esteem and focusing on access to sanitary pads, menstrual education, changing sanitation facilities in addition to the social and cultural factors.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter describes the methodology employed to collect and analyze data of the study. The research design, research site, target population, sampling, and sample size are outlined. The description of the data collection, the data collection instrument, its reliability, validity, and the data collection procedure used in the study on the effect of menstrual hygiene management on the self-esteem of vulnerable adolescent girls is provided.

3.2 Research Design

According to Khandy and Khanam (2023), a research design is a structured plan used by a researcher to provide valid answers on data collection. This study adopted a mixed method design which combines both qualitative and qualitative research design to collect data. This approach has become more common in research, and it provides detailed and comprehensive responses that meet the research objectives (Dovetail Editorial Team, 2023). Mixed approach is relevant in this study for a better understanding of the problem and yielding of more complete evidence. The findings of the study were strengthened through triangulation. The qualitative data clarified the results of quantitative data and the knowledge gap obtained was essential in stimulating new research (Wasti et al., 2022).

The approach was used to provide detailed information on the effects of menstrual hygiene management (MHM) on the self-esteem of girls. By utilizing explanatory sequential design, a quantitative data collection will be conducted that will help identify trends and correlations, and thereafter collect a qualitative data through semi-structured

interviews through a qualitative sequential design to 15 community workers to establish the reasons behind the findings and gain a deeper understanding of the effects of menstrual hygiene management on the self-esteem of vulnerable adolescent girls.

3.3 Research Site

The research was conducted at Coffee Ministry, a Non - governmental organization (NGO) Coffee Ministry is a community-based initiative running within the informal settlements of Kibra in handling the social, mental and economic issues of the residents. The organization works towards improving the living conditions of the marginalized economically, academically, psychologically and socially. They provide services such as skills training, academic support, feeding programs, mentorship, dance groups, guidance and counseling, and educational sponsorship. They offer support to teen mothers by sponsoring the education of their children from day care, to primary school level.

The Coffee Ministry organization is located in the informal settlements of Kibera in Laini Saba, Nairobi County. Kibra is one of the biggest informal settlements and tightly populated informal settlements in Kenya and in Africa. The available houses are congested, with insufficient space, semi-structured buildings, inadequate sanitation facilities and limited access to water. It is marked by high insecurity, unemployment, lack of basic needs and poor garbage collection system (Powell, 2022). Many organizations are helping the community as noted by The World Bank (2020), who found that there are 511 charitable organizations in Kibra offering different support programs. The Kibra constituency consists of five wards Makini, Laini Saba, Lindi, Woodley and Sarangombe. It is from this community where the Coffee Ministry organization selects the most vulnerable members to benefit from their services.

Therefore, this organization will be suitable for the study because it aligns with the objectives of this study and it is serving a vulnerable community from all the five wards. The organization is situated where it is more accessible to both the researcher and participants of the study.

3.4 Target Population

This study's target population was vulnerable girls between the ages of 10 to 19 from Coffee Ministry, located in Laini Saba within Kibra constituency. Kibra is one of the biggest informal settlements in Africa, and residents live in poverty, unemployed, and they struggle to access basic services (Mokaya et al., 2022). The target population for this study consists of all adolescent girls aged 10 to 19 years who have attained menarche and live in informal urban settlements. The adolescent vulnerable girls share similar socio-economic and environmental challenges (Mokaya et al., 2022). These problems include limited access to sanitary products, inadequate sanitation facilities, and sociocultural constraints (Chebii, 2018).

Further, the target population are beneficiaries of Coffee Ministry organization located in Laini Saba within Kibra Constituency. Kibra is an informal urban settlement that is densely populated with a large part of the population being youths, composed of people from all major Kenya's ethnic backgrounds (Maina & Ochiri., 2018). It is from this broader group that the study sample is drawn from.

3.5 Study Sample

3.5.1 Sample Procedure

The researcher obtained permission from the Coffee Ministry a list of 500 adolescent girls aged 10 to 19 was identified from the organization's registration records.

The population consisted of girls who reside in Kibra constituency, enrolled in Coffee Ministry and have started menstruation. Parents and caregivers who were informed about the main reason for the study were requested to give consent for their children's participation.

A stratified sampling technique was employed to ensure inclusivity of all age groups. The population was categorized into four ages: 10-12, 13-15, 16-17 and 18-19 years. The strata show different stages of adolescence because girls may experience menstruation and self-esteem distinctively because of differences in developmental levels. To select eligible members in each stratum, simple random sampling for data collection was employed. Thereafter a simple random sampling by assigning random codes to use within the stratum to determine eligible members and to give the respondents equal chance of being involved in the study.

3.5.2 Study Sample size

A sample size of 222 girls was obtained from the study population of 500 adolescent girls in Coffee Ministry through Yamane's formula mostly used by researchers for calculating sample size (Iddon & Boyd, 2023). The formula was used to determine the exact and appropriate number of respondents needed to provide an accurate conclusion. **N** symbolizes the total population size for the study which is 500, to represent the margin (0.05) and **n** is equal to sample size population to be surveyed. This formula is appropriate in ensuring that the sample size was valid for obtaining results that reflect the population. Qualitative data information was determined through interviews of 15 community workers.

Yamene's formula $n=N/(1+N(e)2$

$n=500\div1+500\ (0.0025) = 500\div1+2.5 = 500\div3.5 = 222.2$

Sample Size is approximately 222 respondents.

Therefore, the entire population was categorized into strata that were formed based on age 10-12 (55 girls), 13-15 (61 girls), 16-17 (56 girls) and 18-19 (47 girls) from the stratum a simple random sample was selected ensuring fair representation of all the subsets, and increased reliability. For the Qualitative the sample size of 15 individuals was selected based on their experience with menstruation and their availability. The total number of the sample size was 237, that consisted of 222 adolescent girls and 15 community workers among them young girls who volunteer to coordinate some programs. Purposive sampling was used to determine the 15 respondents because they were directly involved in supporting the vulnerable girls as community workers. Their experiences working with the girls enabled them to provide relevant information on menstrual hygiene management and its influence on self-esteem of the vulnerable girls.

3.6 Data Collection

3.6.1 Data Collection Instrument

Questionnaires and interview guides were used to measure menstrual hygiene management effects on the self-esteem of vulnerable girls. A questionnaire reaches out to a large number of respondents within a short period, offers a sense of privacy and the interview helps in getting valid and rich information on the experiences because of the flexibility and room for probing (Murithi, Mwania & Mwinzi, 2016). The questionnaire was tailored to study objectives to measure the effect of menstrual hygiene management on self-esteem.

The semi-structured questionnaire was categorized into parts as follows: Part A solicits demographic data about the respondents. These data include information about

participants of the survey age, level of education, living situation (If they were living with their both parents, single parent guardian or alone). Further, the study sought to know if the respondents were receiving external support in regards to menstrual hygiene management. For more precise analysis respondents were asked if they have started menstruating. The other sections were organized according to research objectives and questions in different sections.

The instrument measures; Part B is on access to menstrual hygiene products; this section consisted of five items. Part C focused on the effect of menstrual hygiene education and awareness, and consisted of 4 items while Part D of the questionnaire had 4 items that were used to collect data on social cultural factors, Part E, contained 7 items on availability to sanitation facilities and the last section is on self-esteem. In each section there are sets of statements, where the participants were requested to frequency their level of agreement or rate of the experiences on a Likert scale. Further the qualitative analysis was used to provide deeper understanding of the qualitative data.

Data was collected using a free version of Rosenberg Self-Esteem Scale (RSE) which is widely used to assess an individual's self-esteem (Moksnes, et al., 2024). The data instrument consists of 10 items, with a scoring system that differentiates between positively and negatively worded statements. For items 1, 2, 4, 6, and 7 (positive items), responses are scored as: strongly agree = 3, agree = 2, disagree = 1, strongly disagree = 0. For items 3, 5, 8, 9, and 10 (negative items), the scoring is reversed: strongly agree = 0, agree = 1, disagree = 2, strongly disagree = 3. The total score can range from 0 to 30, with higher scores indicating higher self-esteem. A score between 15 and 25 is considered within the normal range, while scores below 15

The semi-structured interview was administered to assess girls' experiences in menstruation practices and the setting for managing menstrual hygiene. The interviews were themed according to the research study objectives. Further the interview was to capture the menstruators' experiences on how menstruation was managed and if their menstrual needs were met by the environment and hygiene practices.

3.6.2 Pilot Testing of the Instruments

A pilot study was conducted by the researcher through distribution of questionnaires and interview schedules. Piloting testing is an initial trial of research design, procedures, sampling, and data processing and analysis which is pre-tested on a subset of the research target population (Malmqvist, et al. 2019). Therefore, a pre-test of a small sample of 15 respondents was used to ensure validity and reliability of the instrument (Baker et al., 2018). The Pre-test was surveyed at the Coffee Ministry organization hall for a different group of respondents from those who participated in the main study. The same venue was used because it was more accessible and suitable for the interviewee. They were given the self-administered questionnaire to fill. This was conducted through the guidance of the researcher. The piloting test used helped to guide on the appropriate time required to complete filling the questionnaire. Moreover, it was found out that the variables were measurable, relevant, clear, and readable and the respondents were in a position to respond. Through the pre-test the researcher was able to adjust the number of questions and arrange them in an orderly manner.

3.6.3 Instruments of Reliability

According to Moksnes, et al (2024), The Rosenberg self-esteem scale (RSE) is a valid and reliable tool with a high level of consistency and test-retest reliability. According

to the American Psychological Association. (2006) reliability of Rosenberg self-esteem scale is shown by a Guttman scale coefficient of reproducibility of .92, which has demonstrated an excellent internal consistency. Further, it was revealed that the Rosenberg Self-esteem is a universal scale that was advanced in 1965, interpreted into 28 languages and used to measure self-esteem in 53 countries (Jiang, et al., 2023). Gupta (2025), suggests that self-esteem has validity in different cultural contexts; it has severally been used in psychological research because of its ability to predict various psychological outcomes. Reliability is the degree to which a research instrument yields consistent results or data after repeated trials (Africa Nazarene University, 2017) and (Moksnes, et al., 2024) to ensure reliability the survey and the Rosenberg self-esteem scale (RSE) was pre-tested through a pilot study involving a small sample of the target population. A test -retest was administered again to the piloting group to check for consistency.

3.6.4 Instruments of Validity

According to Patino and Ferreira (2018), validity refers to the degree to which an instrument measures accurately what it is supposed to measure, meaning that it should accurately be interpreted and generalized. The research instrument was reviewed by the supervisor and feedback used to revise the structure, wording and its relevance. The questions reflect components from previous studies on the variables such as access to menstrual hygiene products, menstrual hygiene education and awareness, sociocultural issues and access to sanitation facilities. Moreover, the data collection instrument was pilot tested by a small sample size of respondent and adjustments were made to improve its validity. The Rosenberg Self-esteem Scale retained its original validity structure as it is a standardized tool (Jiang, et al., 2023).

3.6.5 Data Collection Procedure

To ensure there is reliability, accuracy and ethics in collection of data a structured procedure was followed. The research proposal was submitted to the board of postgraduate studies of Nazarene University Ethics Review Committee, thereafter approval from National Commission for Science, Technology and Innovation (NACOSTI) was sought to ensure the researcher adhered to all the research guidelines on protection of humans. Moreover, the researcher acquired ethical approvals from the Coffee Ministries Organization study area chief requesting permission to collect data from girls in Kibra Constituency, recruitment and training of assistants on ethical issues, data collection method and procedures. For the recruitment of participants, the target population was determined to be vulnerable adolescent girls from Coffee Ministry who live in Kibra.

The researcher organized a training session for research assistants to explain the procedure of data collection and the ethical issues that must be observed, and handling of the filled in survey in confidentiality. Informed consent was sought, from participants 18 and above years, parents and primary caregivers for children below 18 years before participation in the survey. The purpose, voluntary nature of the study, confidentiality issue and rights were communicated in a detailed manner to respondents. The survey was done by participants who were present during the data collection only. Thereafter the questionnaires were distributed in the organization in a controlled environment within the Coffee Ministry premises to the sample size in two days because the hall could not contain the entire group at once. The supporting researchers were available for clarifications and respondents accorded sufficient time to complete the questionnaires. Then the interviews were conducted later (Blommaert and Jie, 2020). To maintain consistency an interview

guide was used for the interview in a conducive environment. It was conducted in a non-judgmental, respectful manner to help participants to feel safe to respond truthfully.

The responses were hand written with permission for proper analysis and transcription.

After the questionnaires were filled with the help of research assistants they were collected, reviewed for completeness and then stored securely. The quantitative information was collected first to identify patterns, and relationships. Thereafter, a qualitative analysis was done to explain the experience behind those patterns. The categorization of score for the self-esteem test was: score between low self-esteem, moderate self-esteem and high self-esteem.

3.7 Data Processing and Analysis

This study utilized a mixed-method design to determine the effects of menstrual hygiene management on the self-esteem of vulnerable girls in Coffee Ministry, Kibra, Nairobi County. Upon completion of collection of data, the responses were entered into a computerized database using statistical software. A data quality control procedure was followed to ensure the accuracy of the entered data. The collected data would be examined for completeness and the quantitative data would be analyzed through the statistical packages for the social science (SPSS) program to identify patterns in self-esteem across menstrual hygiene management factors. The analysis of qualitative data was done according to the themes and research objectives.

Descriptive Statistics was used to determine mean, standard deviations, frequencies, percentages, table distribution and give a summary of demographic characteristics, menstrual hygiene management and self-esteem.

Inferential statistics was used to assess the relationship between menstrual hygiene objectives that is effects of lack of menstrual hygiene products, education and knowledge in regards to menstrual hygiene management, sociocultural factors and availability of clean sanitation facilities on self-esteem. This was done using correlation analysis persons to determine if there is a significant relationship and multiple regression analysis. Stratified analyses including t-test and Anova were performed to compare differences across subgroups across the study.

Qualitative transcription. The qualitative data from the semi-structured interviews were transcribed verbatim, arranged and analyzed thematically to list patterns and attitudes regarding menstrual hygiene experiences. then coded and themes interpreted to explain the quantitative results.

Integration of quantitative and qualitative findings was done to allow qualitative data to interpret and clarify the numerical patterns. Further, the data triangulation provided a deeper understanding of how the self-esteem of vulnerable girls in Kibra is influenced by menstrual hygiene management. Therefore, the analyzed data was presented in tables, charts, bars and narrative descriptions.

3.8 Legal and Ethical Considerations

In this study there are various legal and ethical issues that were put into consideration. Therefore, the researcher sought approval from the university, permits from

the National Council for Science Technology and Innovation (NACOSTI) in Nairobi, from the Coffee Ministry Organization and the area Administrative Office.

The process of collecting data was guided by ethical guidelines; the rationale was to ensure privacy and confidentiality of participants. The instruments used to collect data were anonymous instead of the actual names' participants were coded to protect their identities. All the respondents were informed about the aim of the study, risks, procedures, steps taken to protect the participant's privacy, the voluntary nature of participation, the right to withdraw without any consequences. All the participants were informed and requested to present signed informed consent. Consent was sought from parents of respondents aged 18 and below.

The questionnaires and interview results were stored in a safe place and only the researcher or the assistants would access them for the purpose of review. The research assistants were trained by the researcher on how to administer the questionnaires, confidentiality protocols and ethical considerations. The researcher ensured that non-judgmental language was used and cultural norms were adhered to. During the data collection a professional counsellor was present to support respondents in case of emotional distress because of the sensitive nature of menstruation. The collected data was stored in a secure place where only the researcher and the assisting team would access for analysis reasons only and keep respondents' data confidential.

CHAPTER FOUR

DATA ANALYSIS AND PRESENTATION OF FINDINGS

4.1 Introduction

In this chapter there is inclusion of data analysis, discussions and findings from the study. The conclusions of the thesis are based on the specific objectives. The purpose of this study was to determine the effects of menstrual hygiene management on the self-esteem of vulnerable girls in Coffee Ministry, a non-governmental organization (NGO) which is a community-based initiative running within the formal settlements of Kibra, Nairobi County, Kenya. The objectives of the study were: to establish the effects of lack of menstrual hygiene products on the self-esteem of vulnerable girls in the Coffee Ministry in Kibra; to determine the effects of menstrual hygiene management education and awareness on the self-esteem of vulnerable girls in the Coffee Ministry in Kibra; to examine the effects of menstrual hygiene management sociocultural factors on the self-esteem of vulnerable girls in Coffee Ministry in Kibra and; to determine the effects of inaccessibility to clean sanitation facilities on the self-esteem of vulnerable girls during menstruation in the Coffee Ministry in Kibra. This chapter provides an analysis of the responses from the questionnaire in addition to interviews.

4.2 Characteristics of the Respondents

4.2.1 Response Rate

The study targeted 237 respondents that included; 222 girls aged 10-19 years and 15 community workers. Out of these, 219 girls and all the 15 key informants responded. These make a return rate of 98.7% for the girls and 100% for the community workers as shown in Table 4.1 below.

Table 4.1: *Response Rate*

Category	Sampled	Responded	Response Rate
Girls	222	219	98.7%
Community Leaders	15	15	100.0%
Total	**237**	**234**	**99.4%**

The girls responded to the questionnaires while the community workers were interviewed. In survey studies, response rates above 60% are generally viewed as acceptable and sufficient for analysis (Mugenda & Mugenda, 2003), and therefore the response achieved in this study is considered very strong and reliable for drawing conclusions.

4.2.2 Social Demographic Characteristics of Respondents

General information about the respondents that were assessed in the study included age, education level, living situations and receiving external support.

4.2.2.1 Age of Respondents.

The study sought to find the age of the respondents. The findings are presented in Table 4.2 below.

Table 4.2: *Age of Respondents*

Age	Frequency	Percent
10-12 years	55	25
13-15 years	61	28
16-17 years	56	26

18-19 Years	47	21
Total	**219**	**100**

As indicated in table 4.2 28% of the girls were aged 13-15 years, followed by those aged 16-17 years with 26%. The 10-12 years age group accounted for 25% girls, while the 18-19 years group comprised 21% girls. Therefore, the ages of the participants were well distributed from 10-19 years.

4.2.2.2 Level of Education of Respondents

The study went on to investigate the education level of the girls. The findings were presented in Table 4.3.

Table 4.3: *Level of education of respondents*

Level of education	Frequency	Percent
Primary	68	31.1
Secondary	145	66.2
Not in school	6	2.7
Total	**219**	**100.0**

The majority (66.2%) of the girls, had completed secondary education, totaling 145. Those with primary education were 68 (31.1%). A small proportion, 6 (2.7%), were not in school as shown in Table 4.3 above.

4.2.2.3 Living Situation of Respondents

The study also investigated the living situation of the girls to ascertain the person they were living with. The findings were presented in Table 4.4.

Table 4.4: *Living Situation of Respondents*

Living situation	**Frequency**	**Percent**
With both parents	118	53.9
With one parent	82	37.4
With guardian	19	8.7
Total	**219**	**100.0**

The majority of the girls (53.9%) reported living with both parents, while 37.4% lived with one parent and only 8.7% stayed with a guardian. This pattern shows that most respondents come from households where parental presence is still strong. Having one or both parents at home can suggest that the girls are likely to receive some level of care, guidance and emotional support. On the other hand, the smaller number living with a single parent or a guardian may indicate households where support systems are more limited, which could make these girls more exposed to challenges in managing their wellbeing, including menstrual hygiene.

4.2.2.4 Receiving of External Support

The girls were asked if they received external support from NGOs, churches or the government. The findings were presented in Figure 4.5 below.

Table 4.5: *Receiving external support*

Response	Frequency	Percent
Yes	110	50.2
No	109	49.8
Total	**219**	**100**

The findings show that approximately half, 110 (50.2%) of the girls received some form of external support such as from NGOs, churches, or the government. Conversely, 109 (49.8%) did not receive any external support as shown in Figure 2 above.

4.3 Presentation of Research Analysis, Findings and Interpretation

This section presents the findings of the study. This is done in line with the study objectives. The purpose of the study is to determine the effects of menstrual hygiene management on the self-esteem of vulnerable girls in Coffee Ministries in Kibra. The first objective of the study was to assess the effects of menstrual hygiene products on the self-esteem of vulnerable girls in the Coffee Ministry in Kibra. This section presents the findings obtained from questionnaires and interviewees. The findings were presented in two sections. The first section presents findings on the dependent variable, self-esteem while the second section presents findings on the menstrual hygiene products.

4.3.1 Effects of lack of menstrual hygiene products on the self-esteem of vulnerable girls.

The study sought to find whether the respondents had started menstruation. The findings are presented in table 4.6.

Table 4.6: *Have you started menstruating?*

Response	**Frequency**	**Percent**
Yes	156	71.2
No	63	28.8
Total	**219**	**100**

As indicated in table 4.6, majority of the girls, 156 (71.2%) had started menstruating. The remaining 63 (28.8%) had not yet begun menstruation.

The girls were asked the question, "How often do you have access to menstrual hygiene products (pads, tampons, cups, etc.)?" The findings obtained were presented in Table 4.7.

Table 4.7: *How often do you have access to menstrual hygiene products?*

Response	Frequency	Percent
Always	78	35.6
Sometimes	114	52.1
Rarely	13	5.9
Never	14	6.4
Total	**219**	**100.0**
Mean	1.83	
Std. Dev.	.80	

As indicated in table 4.7, the responses were recorded on a four-point scale where 1 = Always, 2 = Sometimes, 3 = Rarely and 4 = Never. The results show that access to menstrual hygiene products is generally moderate. A total of 35.6% (n = 78) of the respondents indicated that they always have access, while 52.1% (n = 114) said they

sometimes have access. Only 5.9% (n = 13) reported that they rarely access these products and 6.4% (n = 14) reported that they never do. The mean score of 1.83 further suggests that most girls fall between “always” and “sometimes” in terms of product accessibility. The low standard deviation of 0.80 also shows that there is little variation in responses among the participants.

The girls were asked about their usual sources for obtaining menstrual hygiene products. The results as presented in Table 4.8 below.

Table 4.8: *Where do you usually get your menstrual hygiene products from?*

Source of Products	**Frequency**	**Percent**
Guardians/Parents	80	36.5
School	75	34.2
NGO/Church	45	20.5
Buy myself	13	5.9
Other	6	2.7
Total	**219**	**100.0**

As displayed in table 4.8, the most common source of the menstrual hygiene products was guardians or parents, with 80 girls (36.5%) of the girls reporting they obtained their products from them. A comparable proportion, 75 girls (34.2%), indicated that they usually got their menstrual hygiene products from their school. Some girls also relied on non-governmental organizations or church-based sources, accounting for 45 girls (20.5%). A smaller number, 13 girls (5.9%), reported purchasing the products themselves, while 6 girls (2.7%) indicated they obtained their products from other sources.

The study sought to find if the respondents had ever missed school or an activity due to a lack of menstrual products. The findings were presented in Table 4.9 below.

Table 4.9: *Missing school or an activity due to a lack of menstrual products?*

Response	**Frequency**	**Percent**
Yes	174	79.5
No	45	20.5
Total	**219**	**100**

The study found that 45 girls (20.5%) responded affirmatively, indicating that they had missed school or activities because of this issue. Conversely, a larger proportion of 174 girls (79.5%) reported that they had not missed any school or activities due to a lack of menstrual hygiene products.

The study also examined the respondents' concerns regarding access to menstrual materials. The findings are summarized in Table 4.10 below.

Table 4.10: *Were you worried about getting more menstrual materials if they ran out?*

Response	**Frequency**	**Percent**
Always	27	12.3
Sometimes	100	45.7
Rarely	19	8.7
Never	73	33.3
Total	**219**	**100.0**
Mean	2.63	
Std. Dev.	1.073	

Participants were presented with the question, “Are you worried about how you would get more of menstrual materials if you ran out of them (for example, if you needed to purchase materials, retrieve materials from home, or ask someone for materials)?” This was measured on a 4-point scale, where 1 indicates "Always," 2 "Sometimes," 3 "Rarely," and 4 "Never." Nearly half of the respondents expressed some level of concern about obtaining additional menstrual materials when they run out. As presented in Table 4.10, 45.7% (n = 100) of the girls indicated that they sometimes worry about how they would get more products. About a third of the respondents, 33.3% (n = 73), reported that they never worry about access. A smaller proportion expressed frequent concern, with 12.3% (n = 27) stating that they always worry and 8.7% (n = 19) saying they rarely worry about obtaining additional materials.

The mean score for this item was 2.63, suggesting that the typical response falls between “sometimes” and “rarely.” This implies that although some girls frequently worry about access to menstrual products, the concern is not constant for everyone. The standard deviation of 1.073 indicates a moderate level of variation in the responses, meaning that the degree of worry differs across individuals.

The girls were also asked to point out how not having access to menstrual products made them feel. The response is as presented in table 4.11 below.

Table 4.11: *Feeling of not having access to menstrual periods?*

Feeling	**Frequency**	**Percent**
Ashamed	63	28.8
Anxious	24	11.0
Less confident	91	41.6
No change	41	18.7
Total	**219**	**100.0**

The findings as presented in Table 4.11 indicate that the lack of access to menstrual products significantly affects the emotional well-being of the girls. Specifically, 63 respondents (28.8%) reported feeling ashamed, highlighting feelings of embarrassment or stigma associated with menstruation and insufficient access to products. Additionally, 91 girls (41.6%) felt less confident, suggesting that the inability to access menstrual products may undermine their self-esteem and sense of self-assurance. Anxiety was experienced by 24 girls (11.0%), reflecting concerns or worry related to menstruation issues. Meanwhile, 41 respondents (18.7%) reported no change in their feelings, indicating that for some, lack of access does not affect their emotional state.

Access to menstrual hygiene products was found to have a significant influence on the self-esteem of vulnerable girls in the Coffee Ministry in Kibra. Girls without consistent access to menstrual products reported using improvised materials such as plastic bags, old clothes, pieces of mattress, or tissue paper to manage their periods. These innovative options were demonstrated as uncomfortable, inconvenient, and shameful. A good number of girls stated that in instances they lacked quality materials, they opted to remain at home,

staying out of school and other social engagements due to avoiding leaks, shame or discrimination.

Unpredictable availability of menstrual products further enhanced their worry. The majority of the girls were dependent on charitable agencies such as the Coffee Ministry or Dreams Organization. These entities share pads and other sanitary products when donations come in. This proved tricky as the support was not always ascertained. With this kind of unpredictability, girls underwent anxiety and left them unprepared during their periods. A number of community leaders indicated that they had to ask from peers or depend on parents or relatives to assist. A good proportion of them highlighted that they resorted to staying at home after lacking the essential items.

"The Coffee Ministry and organizations like Dreams, do provide girls with sanitary pads but it's not consistent every month." (Interviewee 3, July 2025)

One of the most stated constraints was the cost of menstrual hygiene products. To a majority of girls, the cost of buying pads independently was not sustainable due to lack of finances. A few girls observed that their mothers or extended family members chipped in sometimes with sanitary products, which decreased their anxiety. Nonetheless, a good number reported that in most instances, pads were unavailable or inadequate to sustain them during the entire menstrual duration. To this end, inconsistent availability of sanitary products led to decreased self-esteem, overdependence, and social isolation from daily routines.

Another issue girls highlighted is the shame that arose with missing school when on their menses. To the girls, periods were a physical challenge as well as emotional and

social handicap. The constrained capacity to come across these basic essentials made them feel inferior to their age mates, worsening their vulnerability.

"Emotions of shame overwhelm me when I lack sanitary pads, making me miss school." (Interviewee 4, July 2025)

Amongst these constraints, the community leaders stated that girls relied on supporting organizations near them to provide sanitary pads. To these girls, acquiring menstrual products enhanced their confidence and power, allowing them to continue engaging in school activities and community life without fear or shame.

"Having sanitary pads makes girls feel confident and at ease because they aware that they are not pregnant, giving then inner peace." (Interviewee 14, July 2025)

4.3.1.1 Self-Esteem of vulnerable girls in the Coffee Ministry in Kibra

The dependent variable in the study was Self-Esteem of Vulnerable Girls in the Coffee Ministry in Kibra suggesting low self-esteem. To assess this construct, the Rosenberg Self-Esteem Scale (RSES) was used. The RSES is one of the most commonly applied tools for measuring general self-esteem among adolescents and young people, and it was selected because of its established reliability and long record of use in similar social studies. In this research, the scale was applied in its original form and the items were not altered. This approach was taken so that the results would remain consistent with the standard format and allow comparison with findings from other studies that use the same scale.

The scale is publicly available for academic and non-commercial research, so no special license or written permission was required. However, the original author is acknowledged to maintain ethical and scholarly integrity. Even though the wording of the

items was not changed, the scale was still applied within the context of this study by interpreting the girls' responses in relation to their menstrual hygiene situation rather than self-esteem in general. It is also important to note that the scale was not used on its own.

The level of self-esteem was analyzed alongside the four independent variables in the study: access to menstrual materials, education and awareness, sociocultural influences and sanitation facilities. The relationship between these variables and self-esteem was tested statistically, which made it possible to determine whether differences in self-esteem were linked to menstrual hygiene management rather than other unrelated factors. In this way, the use of the Rosenberg scale was aligned to the purpose of the study and helped in answering the research questions on how menstrual hygiene experiences influence the girls' self-esteem.

The findings from the Rosenberg Self-Esteem Scale, used without modification, were presented in Table 4.12.

Table 4.12: *Self-Esteem of vulnerable girls in the Coffee Ministry in Kibra*

Statement	Strongly Disagree		Disagree		Agree		Strongly Agree		Total			
	F	%	F	%	F	%	F	%	F	%	Mean	SD
On the whole, I am satisfied with myself	10	4.6	19	8.7	70	32.0	120	54.8	219	100	2.4	.83
At times, I think I am not good at all	58	26.5	66	30.1	69	31.5	26	11.9	219	100	1.3	.99
I feel that I have a good number of qualities	11	5.0	15	6.8	83	37.9	108	49.3	217	99.1	0.7	.81
I am able to do things as well as most other people	26	11.9	40	18.3	71	32.4	82	37.4	219	100	2.0	1.02
I feel I do not have much to be proud of	63	28.8	75	34.2	44	20.1	36	16.4	218	99.5	1.8	1.05
I certainly feel useless at times	83	37.9	62	28.3	47	21.5	25	11.4	217	99.1	1.1	1.03
I feel that I am a person of worth, at least on an equal plane with others	24	11.0	28	12.8	85	38.8	81	37.0	218	99.5	2.0	.97
I wish I could have more respect for myself	21	9.6	8	3.7	75	34.2	115	52.5	219	100	0.7	.93
All in all, I am inclined to feel that I am a failure	114	52.1	60	27.4	26	11.9	19	8.7	219	100	2.2	.97

I take a positive attitude towards myself	20	9.1	21	9.6	66	30.1	112	51.1	219	100	0.8	.96

The study assessed the self-esteem of vulnerable girls participating in the Coffee Ministry in Kibra. Table 4.12 summarizes the descriptive findings for the different statements used to measure self-esteem.

The distribution of responses shows that the girls hold both positive and negative views about themselves. For instance, more than half of the respondents strongly agreed (54.8%, n=120) and 32.0% (n=70) agreed that they were generally satisfied with themselves, producing a mean score of 2.4. Likewise, a considerable proportion also expressed self-worth, where 38.8% (n=85) agreed and 37.0% (n=81) strongly agreed that they felt they were persons of value, which had a mean of 2.0. These responses reflect a reasonable level of confidence among many of the participants.

However, the data further reveals the presence of self-doubt among a sizable number of girls. The statement “At times, I think I am not good at all” recorded a mean score of 1.3, with 26.5% (n=58) strongly disagreeing and 30.1% (n=66) disagreeing. Similarly, in the item “I certainly feel useless at times,” 37.9% (n=83) strongly disagreed and 28.3% (n=62) disagreed, resulting in a mean of 1.1. These findings point towards recurring negative self-perceptions for some participants.

Other items demonstrate similar concerns. For example, 34.2% (n=75) disagreed and 28.8% (n=63) strongly disagreed that they have little to be proud of (mean = 1.8). A high proportion (52.5%, n = 115) strongly agreed and 34.2% (n=75) agreed that they wished to have more respect for themselves, with a mean score of 0.7. The statement “I am

inclined to feel that I am a failure" also recorded strong responses where 52.1% (n=114) strongly disagreed and 27.4% (n=60) disagreed, with a mean of 2.2.

Based on the Rosenberg Self-Esteem interpretation criteria where scores between 0–14 reflect low self-esteem, 15–25 reflect normal self-esteem and 26–30 indicate high self-esteem the results show a mixture of low and moderate self-esteem among the girls. Although several respondents exhibited positive self-belief and confidence, others displayed feelings of inadequacy and self-doubt.

The findings above are an indication that a substantial number of girls are vulnerable in the Coffee ministries in Kibra thus confronting self-worth and confidence. This calls for targeted psychosocial interventions to assist them. Overall, the data suggests that while most respondents exhibit moderate self-esteem, a significant portion may experience low self-esteem tendencies

The vulnerable girls were presented with the questions: How do you feel about yourself during periods? What makes you feel good or bad about yourself? What would help you to feel confident? Among the interviewee participants, menstruation was described as a time of emotional and physical distress that significantly affects self-esteem, especially when menstrual products are unavailable. The community leaders stated that girls felt ashamed and uncomfortable when pads were unavailable, with one alluding:

"Girls are always ashamed whenever they are low on pads. They are am forced to sit lonely in the house and avoid interacting with people." (Interviewee 1, July 2025)

This feeling of shame was in addition linked to a sense of dirtiness and social isolation. Menstruation was not only explained to be a physical experience but one attached with social constraints and emotional stigma. Girls opined:

"In most instances, girls feel dirty. Even after they take a bath, they still feel as if something is off." (Interviewee 6, July 2025)

Availability of sanitary pads was linked with self-confidence, security and ease. They community leaders pointed out that girls had confidence and boldness when they got the products they required, and some felt ecstatic for not conceiving:

"When girls are in possession of sanitary pads, they are confident and delighted as they are assured, they are not pregnant. That gives them a feeling of relief." (Interviewee 4, July 2025)

Nonetheless, society's thinking of menstruation contributed substantially to girls' low self-worth. Young girls were in most cases vulnerable to confinement when experiencing periods for instance not being permitted to do house chores, discouraged from hanging out with peers and prevented from undertaking religious activities. One of the community leaders said:

"When menstruating, some girls are ordered not to attend church, reason being they are unholy. They remind them that they are unclean and as such should not prepare meals as they are bound to contaminate food." (Interviewee 8, July 2025)

Being treated this way heightened emotions of shame and withdrawal, with little or no talk about menstruation within the society. Most girls had been brought up with negative stories regarding periods, although few were starting to have different views as they got older and acquired more accurate information:

"To begin with, they felt uneasy when sharing about periods, even with their close peers. For now, they are at peace with it, knowing it's a normal biological process." (Interviewee 2, July 2025)

To some teenage girls, having seamless accessibility to standard menstrual hygiene products which are of high quality from privately owned facilities brought about a notable change in their self-esteem. With adequate preparation and support, girls were able to feel normal and in control:

"Accessing all essential health products, clean pit latrines/toilets and bathrooms, assured girls that they can manage. They feel alright and contented." (Interviewee 8, July 2025)

Yet, despite such progress, many still reported negative emotional and physical experiences tied to menstruation. Feelings of sadness, weakness, and stress were common. Girls also described heightened emotional vulnerability and sensitivity. Interestingly, a few girls also recognized menstruation as a sign of maturity and a marker of womanhood, despite its challenges: However, this sense of pride coexisted with physical discomfort and fatigue.

4.3.1.2 Correlation between Menstrual Hygiene Products and Self-Esteem of Vulnerable Girls

The study sought to find the correlation between menstrual hygiene products and self-esteem of vulnerable girls. The finding is presented in the table below.

Table 4.13: *Correlation between Menstrual Hygiene Products and Self-Esteem of Vulnerable Girls*

Variables	**Pearson Correlation (r)**	**p-value**	**N**
Menstrual Hygiene Products vs Self-Esteem of Vulnerable Girls	0.976**	<0.01	219

**. Correlation is significant at the 0.01 level (2-tailed).

A strong and statistically meaningful relationship was observed between access to menstrual hygiene products and the self-esteem of vulnerable girls ($r = 0.976$, $p < 0.01$). The findings suggest that better access to menstrual hygiene products tends to correspond with improved self-esteem among the girls taking part in the Coffee Ministry in Kibra.

4.3.2 Effects of menstrual hygiene management education and awareness on the self-esteem of vulnerable girls.

The research objective was "to determine the effects of menstrual hygiene management education and awareness on the self-esteem of vulnerable girls in the Coffee Ministry in Kibra." responses from questionnaires and interviews were discussed in this part.

To begin with, the girls were asked "if they had received any education or training about menstrual hygiene management." The findings are shown below in table 4.14.

Table 4.14: *Receiving of education or training about menstrual hygiene management*

Response	Frequency	Percent
Yes	204	93.2
No	15	6.8
Total	**219**	**100**

The findings as presented in Table 4.14 show that a significant majority of respondents, 204 girls (93.2%), have received some form of education or training about menstrual hygiene management (MHM). In contrast, a small proportion of 15 girls (6.8%) reported not having received any such education or training.

The girls were also asked to point out who provided them with menstrual hygiene education. The findings as presented in Table 4.15.

Table 4.15: *Source of menstrual hygiene education*

Response	Frequency	Percent
School	90	41.1
Friends	10	4.6
NGO	77	35.2
Parents/Guardians	36	16.4
Other	6	2.7
Total	**219**	**100.0**

As indicated in table 4.14, the primary providers of menstrual hygiene education among the girls in the Coffee Ministry in Kibra are schools and NGOs. Specifically, 90 girls (41.1%) received education from their schools, while 77 girls (35.2%) were educated

by non-governmental organizations (NGOs). Additionally, some girls learned about menstrual hygiene from their parents or guardians (36 girls, 16.4%), friends (10 girls, 4.6%), and others through various sources (6 girls, 2.7%).

The findings are summarized in Table 4.16 below.

Table 4.16: Feelings of confidence when handling menstruation safely and hygienically

Response	**Frequency**	**Percent**
Always	142	64.8
Sometimes	38	17.4
Rarely	8	3.7
Never	31	14.2
Total	219	100.0
Mean	1.67	
Std. Dev.	1.072	

More than half of the respondents expressed confidence in handling their menstruation safely and hygienically. As presented in Table 4.12, 64.8% (n = 142) of the girls reported that they always feel confident, while 17.4% (n = 38) indicated that they sometimes feel confident. Only 3.7% (n = 8) said they rarely feel confident, and 14.2% (n = 31) mentioned that they never feel confident when managing their periods safely.

The mean score for this item was 1.67, which suggests that the average response lies between “always” and “sometimes.” This indicates that the majority of girls tend to feel capable of handling their menstruation in a safe and hygienic manner. The standard deviation of 1.072 indicates some variation in responses, although the overall trend still

reflects relatively high confidence among the participants. More than half of the respondents expressed confidence in handling their menstruation safely and hygienically. As presented in Table 4.12, 64.8% (n = 142) of the girls reported that they always feel confident, while 17.4% (n = 38) indicated that they sometimes feel confident. Only 3.7% (n = 8) said they rarely feel confident, and 14.2% (n = 31) mentioned that they never feel confident when managing their periods safely.

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Respondents were asked about handling their menstruation safely and hygienically. These findings were presented Table 4.17.

Table 4.17: *Has learning menstruation matters improved your self-esteem*

Response	**Frequency**	**Percent**
Yes	188	85.8
No	12	5.5
Not sure	19	8.7
Total	**219**	**100.0**

Table 4.17, indicates that among the 219 respondents, the majority 85.8% answered "Yes" A small percentage, 5.5%, responded "No," indicating they do not feel confident in managing their menstruation safely. Additionally, 8.7% of respondents were unsure,

indicating some uncertainty about their confidence levels in handling menstruation hygienically.

Menstrual hygiene education for vulnerable girls in the Coffee Ministry in Kibra is accessed through a variety of formal and informal channels. The girls reported learning about menstruation from schools, mothers, churches, and peer interactions, as well as through life skills programs and community organizations such as the Coffee Ministry itself. Psycho-education sessions conducted by visiting groups were identified as especially impactful, offering structured opportunities for girls to ask questions and receive factual, supportive guidance on menstrual health.

In disseminating information regarding menstrual hygiene awareness including availing programs on hygiene and self-care, the Coffee Ministry organization plays a core function. With these engagements, girls are educated on the biological processes of menstruation. In addition, they are informed of the benefits of observing hygiene, recommended use of products, and ways to undergo menstruation with self-pride.

It is worthy to note that a vast number of girls indicated that their first encounter with word menstruation was from family members. This particularly came from their mothers, older sisters, or peers. To some, this reassured and comforted them, while for others it was vague and compounded by societal silences. It was posited by one community leader:

"Girl's sisters are there for them when they encountered the first period. They guided them on how pads were applied and assured them it was a normal biological process." (Interviewee 2, July 2025).

Apart from conventional sources of information, new digital and online platforms were quoted as trusted information hubs. A substantial number of girls indicated relying on the internet, especially Google and TikTok to derive information regarding menstruation. These platforms came in handy in instances where it proved shameful to ask questions one on one or for confirmation purposes on what they had heard from different sources.

"Google and TikTok platforms have been a great source of information. In most instances girls do not have to rely on anyone to offer them explanations, so they just type a question, search and watch videos online." (Interviewee 3, July 2025)

Other mentioned sources of information regarding menstruation came from church-based programs and life skills classes. During these sessions, practical lessons were integrated with moral guidance, contributing to a more rounded understanding of menstruation as both a natural biological process and a topic worthy of open discussion. Still, for some girls, these messages could be limited by cultural taboos or lack of depth, leaving them to fill the gaps through conversations with peers. One community leader said:

"Girls have life skills in school and sometimes in church, and they talk about periods, but not in much detail." (Interviewee 11, July 2025)

4.3.2.1 Correlation between Menstrual Hygiene Management Education and Awareness and Self-Esteem of Vulnerable Girls.

The study sought to establish the relationship between menstrual hygiene management education and awareness and self-esteem of vulnerable girls in Coffee Ministry in Kibra.

Table 4.18: *Correlation between menstrual hygiene management education and awareness and self-Esteem of vulnerable girls.*

Variables	Pearson Correlation (r)	p-value	N
Menstrual Hygiene Management Education and Awareness vs Self-Esteem of Vulnerable Girls	0.937	<0.01	219

**. Correlation is significant at the 0.01 level (2-tailed).

A strong and statistically meaningful relationship was observed between menstrual hygiene management education and awareness and the self-esteem of vulnerable girls ($r = 0.937$, $p < 0.01$). The findings suggest that better access to menstrual hygiene management education and awareness tends to correspond with improved self-esteem among the girls taking part in the Coffee Ministry in Kibra.

4.3.3 Effects of menstrual hygiene management sociocultural factors on the self-esteem of vulnerable girls.

The third objective of the study examined how sociocultural factors related to menstrual hygiene management influence the self-esteem of vulnerable girls in the Coffee Ministry in Kibra. The findings are presented in Table 4.19 below.

Table 4.19: *Freedom to Talk about Menstruation with Family Members*

Response	Frequency	Percent
Yes	135	61.6
No	47	21.5
Sometimes	37	16.9
Total	219	100.0
Mean	1.55	
Std. Dev.	0.767	

As illustrated in Table 4.14, 61.6% (n = 135) of the respondents reported that they are free to talk about menstruation with their family members, while 21.5% (n = 47) stated that they are not. A further 16.9% (n = 37) indicated that they sometimes feel free to discuss menstruation at home.

The mean score for this item was 1.55 on a four-point scale where 1 = Always and 4 = Never, showing that the typical response lies between “always” and “sometimes.” This indicates that many girls feel able to speak openly about menstruation within the family setting. The standard deviation of 0.767 suggests relatively low variability among responses, meaning that most girls share similar levels of freedom in discussing menstruation.

The respondents were asked about their freedom when talking about menstruation with their family members. These findings were presented in Table 4.20.

Table 4.20: *Freedom to Talk about Menstruation with Family Member(s)*

	Frequency	**Percent**
Yes	135	61.6
No	47	21.5
Sometimes	37	16.9
Total	**219**	**100.0**

As shown in table 4.20, for the total number of the 219 responders, the majority 135 girls (61.6%) answered "Yes" when asked about their freedom when talking about menstruation with their family member(s). A small percentage, 47 girls (21.5%), responded "No," indicating they do not feel free in talking about menstruation with members of their family. In addition, 37 responders (16.9%) said they were unsure, indicating some uncertainty about their sense of freedom in sharing about menstruation with family members.

The study sought to find if the participants of the study felt judged or shamed by others during menstruation. Outcomes were presented on Table 4.21.

Table 4.21: *Feeling of being Judged or Shamed by Others during Period*

	Frequency	**Percent**
Yes	70	32.0
No	149	68.0
Total	**219**	**100.0**

As illustrated in table 4.20, from the reaction of 219 participants, the vast majority of 149 girls (68%) answered "No" when queried about feeling judged or shamed by others during periods. A small percentage, 70 girls (32%), responded "Yes," indicating they felt judged or shamed when experiencing menses.

Respondents were asked about cultural or religious rules they followed when menstruating. These findings were presented Table 4.22.

Table 4.22: *Cultural or Religious Rules Followed when Menstruating*

Response	**Frequency**	**Percent**
Yes	62	28.3
No	107	48.9
Not sure	50	22.8
Total	**219**	**100.0**

Among the 219 responders, the majority 107 (48.9%) indicated "No" when asked about cultural or religious rules they followed when menstruating. They were followed by 62 girls (28.3%) who responded "Yes," revealing that they followed cultural or religious rules when menstruating. They were not supposed to participate in religious activities like leading others in prayers or serve in any church program. They were not to interact with boys and their menstrual was deemed as a sign of danger.

Similarly, 50 (22.8%) of girls said they were unsure, indicating some uncertainty about following cultural or religious rules they followed when menstruating. The research study asked the respondent about their feelings of being supported by friends, and coffee ministry organization during menstruation. These findings were presented Table 4.23.

Table 4.23: *Feeling of Being Supported by Friends, and Coffee Ministry Organization during Menstruation*

Response	Frequency	Percent
Yes	179	81.7
No	16	7.3
Sometimes	24	11.0
Total	**219**	**100.0**

As shown in table 4.23, the vast majority 179 (81.7%) of the 219 girls reacted "Yes" when queried about feeling supported by their family, friends and Coffee Ministry Organization during menstruation. A small minority of 16 girls (7.3%) responded "No," hinting that they did not feel supported. At the same time, a paltry 24 girls (11%) of girls said they sometimes felt supported, indicating some uncertainty about feeling supported by their family, friends and Coffee Ministry Organization during menstruation.

Sociocultural attitudes toward menstruation in the communities surrounding the Coffee Ministry in Kibra have a strong and often negative influence on the self-esteem of vulnerable girls. The data revealed that menstrual health is largely shaped by silence, stigma, misinformation, and deeply rooted cultural taboos. Many girls reported that menstruation is not openly discussed within families. In some cases, girls noted that their parents, particularly fathers, avoid the topic altogether, reinforcing the idea that menstruation is a private or shameful issue that should be hidden. To this end, one community leader had this to stay:

"The majority of fathers are not interested in knowing anything regarding periods on their daughters. According to them, it is a woman' thing." (Interviewee 8, July 2025)

Poor communication structures in the society often exposed girls, made them feel isolated, more so when undergoing physical distress or psychological changes associated with monthly periods. A number of responders alluded to feelings of frustrations when parents failed to grasp or react accordingly to their mood shifts or accompanying pain. Others reported feeling uneasy interacting closely with siblings during their periods due to inherent shame. One community leader had this to say:

"Girls hardly engage with their immediate siblings during menstruation. They usually feel inwardly embarrassed when sharing seats with them when experiencing periods." (Interviewee 16, July 2025)

Normally, society understood menstruation as a step to maturity. However, it lacked the prerequisite emotional support needed to ease the transition. Some girls observed that their closest family members blocked them socially once they began menstruating. To illustrate this scenario, community leaders said that girls reported being warned about boys or being reassigned from specific duties. Some of these measures were meant to safeguard girls but, in the end, left them feeling confused or alienated. This is because their connections and daily programs changed without satisfactory discussion.

"Their association with boys is strictly forbidden by their parents who inform them that they are now women." (Interviewee 2, July 2025).

Other common misconceptions stemmed from cultural myths and misinformation. One responder was being informed that if she missed her periods prior to joining high school, she risked missing entirely. To others, having periods was contagious or affected

by close proximity to menstruating girls. This kind of misinformation enhanced fear and confusion among first-timers.

Peer relationships with friends and peers were influential in forming self-esteem. A number of girls indicated being teased or alienated after dirtying their clothes in public. This left an indelible emotional mark. Becoming a laughing stock or name calling during menstruation was dehumanizing as posited by one girl. This reinforced emotions of guilt and dreadfulness. There were negative responses from some families to the natural odour of menstrual blood. As a result, most girls preferred to keep away from their counterparts during their menses.

Despite the fact that few responders confided overcoming shame and portraying confidence with their periods, majority of them still harbored frustration with limitations heaped on their freedom. This was depicted through constrained movement, minimal association with peers aggravated by stigma and limited discussions on menstrual experiences. As such these reactions indicated that menstrual hygiene management and sociocultural factors impacted self-esteem of vulnerable girls in the Coffee Ministry in Kibra, Nairobi County.

4.3.3.1 Correlation between Menstrual Hygiene Management Sociocultural Factors and Self-Esteem of Vulnerable Girls

The study sought to determine the correlation between menstrual hygiene management sociocultural factors and self-esteem of vulnerable girls. The findings are illustrated in the table below.

Table 4.24: *Correlation between menstrual hygiene management sociocultural factors and self-esteem of vulnerable girls*

Variables	Pearson Correlation (r)	p-value	N
Menstrual Hygiene Management Sociocultural Factors vs Self-Esteem of Vulnerable Girls	0.936**	<0.01	219

**. Correlation is significant at the 0.01 level (2-tailed).

As indicated in table 4:24, a strong and statistically meaningful relationship was observed between menstrual hygiene management and the self-esteem of vulnerable girls ($r = 0.936$, $p < 0.01$). The findings suggest that better access to menstrual hygiene management and sociocultural factors tends to correspond with improved self-esteem among the girls taking part in the Coffee Ministry in Kibra.

4.3.4 Effects of inaccessibility to clean sanitation facilities on the self-esteem of vulnerable girls during menstruation.

The fourth objective of the study was to examine the influence of clean sanitation facilities on the self-esteem of vulnerable girls during menstruation in the Coffee Ministry in Kibra.

The study examined whether the respondents' experienced feelings of being ashamed when seen washing menstrual materials. The findings are presented in table 4.25 below.

Table 4.25: *Feelings of being ashamed when seen washing menstrual materials*

Response	Frequency	Percent
Always	48	21.9
Sometimes	73	33.3
Rarely	14	6.4
Never	84	38.4
Total	**219**	**100.0**
Mean	2.61	
Std. Dev.	1.204	

As shown in Table 4.25, 38.4% (n = 84) of the respondents stated that they are never ashamed of being seen washing their menstrual materials, while 33.3% (n = 73) indicated that they sometimes feel ashamed. A smaller proportion reported higher levels of embarrassment, with 21.9% (n = 48) saying they always feel ashamed and 6.4% (n = 14) stating that they rarely feel ashamed.

The mean score for this item was 2.61, suggesting that the average response falls between “sometimes” and “rarely.” This reflects that some girls feel uncomfortable with the possibility of being seen, although this concern is not consistent across all respondents. The standard deviation of 1.204 shows that there is modest variability in the responses, meaning that the level of embarrassment differs among participants but is not widely dispersed.

The respondents were asked if they have access to clean, safe and private toilets during menstruation. The finding in table 4.26.

Table 4.26: *Access to clean, safe and private toilets during menstruation*

Response	**Frequency**	**Percent**
Always	115	52.5
Sometimes	62	28.3
Rarely	20	9.1
Never	22	10.0
Total	**219**	**100.0**
Mean	1.767	
Std. Dev.	.984	

Table 4.26 shows that most of the girls reported having access to clean, private and safe toilets during menstruation. A majority, 52.5% (n = 115), said that they always have access to such facilities, while 28.3% (n = 62) mentioned that they sometimes do. A smaller number of respondents reported poor access, with 9.1% (n = 20) indicating they rarely have access and 10.0% (n = 22) saying they never have access when they are menstruating.

The mean score for this item was 1.77, suggesting that the typical response lies between "always" and "sometimes." This indicates that access to suitable toilets is generally available for many of the girls, although it is not universal. The standard deviation value of 0.984 shows some spread in the responses, pointing to differences in access among the participants.

These findings concerning the presence of the facilities for changing menstrual hygiene products were presented in Table 4.27.

Table 4.27: *Are there facilities for changing menstruation products?*

Response	Frequency	Percent
Yes	154	70.3
No	34	15.5
Not sure	31	14.2
Total	**219**	**100.0**

As indicated in table 4. 27, among the 219 girls, the majority—154 (70.3%) indicated "Yes" when asked about the presence of facilities for changing menstruation products at home/school/community center. Only 34 girls (15.5%) who responded "No," suggesting that they lacked facilities for changing menstruation products. This was followed closely by 31 girls (14.2%) who reported they were unsure, indicating some uncertainty.

The study sought to find whether lack of proper toilets affected their attendance or participation in activities. Outcomes were presented Table 4.28.

Table 4.28: *Does lack of proper toilet have effects on attendance or participation in activities*

Response	Frequency	Percent
Yes	127	58.0
No	92	42.0
Total	**219**	**100.0**

Table 4.28, shows a slim majority 127 (58%) answered "Yes" when asked about whether lack of proper toilets affected their attendance or participation in activities. Similarly, 92 girls (42%), responded "No," indicating their attendance or participation in activities was hampered by lack of proper toilets.

The question, “how does having a clean and private place to manage your period affect your self-esteem” was posed to the 219 girls. These outcomes were presented Table 4.29.

Table 4.29: *Effect of a clean and private place to manage period on self-esteem*

Response	**Frequency**	**Percent**
Increases confidence	154	70.3
No change	36	16.4
Makes me anxious	29	13.2
Total	**219**	**100.0**

Most respondents 154 (70.3%) posited it increased their confidence while 36 girls (16.4%) responded by saying it had no change on their self-esteem. This was followed closely by 29 (13.2%) responders who said it made them anxious.

The respondents were asked about if they were worried about where to dispose of used menstrual materials. Outcomes of research were presented Table 4.30.

Table 4.30: *Feeling of Worry about Where to Dispose used Menstrual Materials*

Response	**Frequency**	**Percent**
Yes	63	28.8
No	123	56.2
Not sure	33	15.1
Total	**219**	**100.0**

Among the 219 girls, most of them—123 (56.2%) responded "No" when asked about if they were worried about where to dispose of used menstrual materials. On the other hand, 63 girls (28.8%) indicated "Yes," suggesting that they were worried about where to dispose of menstruation materials. Only 33 (15.1%) of girls were not sure where to dispose of their menstrual materials, indicating some uncertainty.

The study also explored whether the girls felt worried that someone at home might see them while changing their menstrual materials. The results are summarized in Table 4.31 below.

Table 4.31: *Feeling of being seen changing menstrual materials when at home*

Response	Frequency	Percent
Always	45	20.5
Sometimes	59	26.9
Rarely	15	6.8
Never	100	45.7
Total	**219**	**100.0**
Mean	2.78	

Std. Dev.	1.227

As shown in Table 4.31, 45.7% (n = 100) of the respondents indicated that they never worry about being seen, while 26.9% (n = 59) reported that they sometimes worry. A smaller proportion expressed higher concern, with 20.5% (n = 45) stating that they always worry and 6.8% (n = 15) saying that they rarely worry about this.

The mean score for this item was 2.78, indicating that the average response lies between "sometimes" and "rarely." This suggests that although some girls feel concerned about privacy while changing menstrual products, the concern is not universal. The standard deviation of 1.227 reflects modest variability in the responses, showing that levels of worry differ from one participant to another.

The availability, cleanliness, and privacy of sanitation facilities were found to significantly influence the self-esteem of vulnerable girls during menstruation in the Coffee Ministry in Kibra. While some girls reported having access to school toilets for changing their pads, the majority emphasized that these facilities were either crowded, lacked privacy, or were not sufficiently clean. These conditions often left girls feeling uncomfortable, exposed, and anxious when managing their menstrual hygiene at school. One community leader had this to say:

"School toilets are not as clean as girls would like them to be. Sometimes they just wait until they go home." (Interviewee 4, July 2025).

Lack of personal privacy was a key issue in many instances. A significant number of responders said that they were embarrassed when carrying pads to the restroom in the presence of boys. As a result, they were publicly ridiculed and attracted undue attention.

With the absence of personalized, lockable doors in most schools and public rest-rooms, embarrassment was magnified making it hard for girls to comfortably wear or change pads. Lack of privacy encouraged girls to wear pads in the comfort and safety of their bedrooms at home.

"Since most public utilities lack functioning doors, it is embarrassing to change sanitary pads. To this end, girls are forced to change in their bedroom when they reach home." (Interviewee 1, July 2025).

At home, constraints regarding sanitation persist. A good number of households share latrines forcing menstruating girls to depend on payable community facilities. The majority of public toilets in most cases lack adequate ways of disposing of waste. To compound this problem, they are always not accessible when need arises. To use public facilities girls had to part with 10 shillings in order to use them. This amount can be challenging if needed often during menstruation. Similarly, the surroundings where these toilets are located was in most cases deplorable and unsecure. This affected the dignity and hygiene of adolescent girls.

Another major issue highlighted was security. A notable percentage of community leaders said that girls experienced fear when going to toilets built in isolated vicinities. Due to this predicament, they opted to accompany a friend or a family member for security. The negative mix of fear, lack of privacy, and dirty utilities enhanced emotional turmoil. In this regard, managing periods felt like a disgusting and risky affair rather than a normal biological cycle.

"Girls often felt awkward whenever people witnessed them disposing used sanitary pads in a plastic paper bag and nicknamed them the pad girls." (Interviewee 10, July 2025)

Where standard sanitation was a challenge, girls postponed changing sanitary pads. This heightened infection risk coupled with associated discomfort. For others, they had to align change times to correspond with situations having fewer people around. Another option was absenteeism from school whenever menstruation was heavy. This pattern of avoidance further impacted their self-esteem by limiting their participation in education and social life.

While a few girls noted that some facilities were clean, they were still not private enough to feel safe or confident. The burden of having to navigate substandard toilets during menstruation added to the emotional strain that girls already experienced, reinforcing feelings of shame, fear, and exclusion. These results allude that accessing clean sanitation facilities during menses had a favorable impact on self-esteem of vulnerable girls in the Coffee ministries in Kibra. Outcomes from interviewed girls indicated that they felt more confident, dignified and less anxious when visiting hygienic, private, and well-preserved toilets. Clean facilities countered embarrassment and fear of menstrual leaks or Oduors, enabling girls to engage more in daily routines e.g. going to school and interacting with peers.

4.3.4.1 Correlation between Clean Sanitation Facilities and Self-Esteem of Vulnerable Girls

The study assessed the correlation between clean sanitation facilities and self-esteem of vulnerable girls. The outcome is presented in table 4.32 below.

Table 4.32: *Correlation between Clean Sanitation Facilities and Self-Esteem of Vulnerable Girls*

Variables	Pearson Correlation (r)	p-value	N
Clean Sanitation Facilities vs Self-Esteem of Vulnerable Girls	0.974	<0.01	219

**. Correlation is significant at the 0.01 level (2-tailed).

A strong and statistically meaningful relationship was observed between clean sanitation facilities and the self-esteem of vulnerable girls ($r = 0.974$, $p < 0.01$). The findings suggest that better access to clean sanitation facilities tends to correspond with improved self-esteem among the girls taking part in the Coffee Ministry in Kibra.

4.4. Multivariate Regression Analysis

Multivariate analysis was undertaken to find out the level to which the independent variables predicted the dependent variable. The findings are presented in Tables 4.33, 4.34 and 4.35 respectively.

Table 4.33: *Model summary*

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.981[a]	.961	.961	.05597

a. Predictors: (Constant), Clean Sanitation Facilities, Menstrual Hygiene Management Sociocultural Factors, Menstrual Hygiene Management Education and Awareness, Menstrual Hygiene Products

As shown in Table 4.33 below; the independent variables explained 96.1% of the change in safe practices among the youth (r squared = 0.961).

Table 4.34: *Analysis of Variance*

ANOVA[a]

Model		**Sum of Squares**	**Df**	**Mean Square**	**F**	**Sig.**
1	Regression	16.737	4	4.184	1335.846	.000[b]
	Residual	.670	214	.003		
	Total	17.407	218			

a. Dependent Variable: Self-esteem of vulnerable girls during menstruation in the coffee ministry in Kibra

b. Predictors: (Constant), clean sanitation facilities, menstrual hygiene management sociocultural factors, menstrual hygiene management education and awareness, menstrual hygiene products

As shown in Table 4.34, clean sanitation facilities, menstrual hygiene management sociocultural factors, menstrual hygiene management education and awareness, menstrual hygiene products statistically significantly predict self-esteem of vulnerable girls during menstruation in the Coffee Ministry in Kibra as shown by a significant F test ($F= 1335.846$, $p <0.05$).

The analysis revealed that, among the four factors examined, both menstrual hygiene products and clean sanitation facilities were significant predictors of self-esteem among vulnerable girls during menstruation in the Coffee Ministry community in Kibra. Specifically, access to menstrual hygiene products had a strong positive influence, with a standardized beta coefficient of 0.655 ($p < 0.001$), indicating that better availability of these products considerably boosts the girls' self-confidence. Similarly, the presence of clean, private sanitation facilities also contributed positively to self-esteem, with a beta value of 0.549 ($p < 0.001$), emphasizing the importance of adequate sanitation in fostering a sense of dignity and confidence during menstruation.

On the other hand, the study found that menstrual hygiene management education and awareness had a negative but statistically significant effect on self-esteem ($\beta = -0.151$, $p = 0.009$). This unexpected result may suggest that simply raising awareness without providing sufficient support or resources could potentially lead to increased concerns or anxiety rather than empowerment. Meanwhile, sociocultural factors related to menstrual hygiene management did not significantly predict self-esteem ($p = 0.158$) and were consequently not included in the final model.

Accordingly, the fitted regression model is:

Self-Esteem = 0.136 + (0.399 × Menstrual Hygiene Products) + (-0.095 × Education and Awareness) + (0.390 × Clean Sanitation Facilities)

Table 4.35: *Regression Coefficients*

Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.136	.026		5.156	.000
	Menstrual Hygiene Products	.399	.046	.655	8.592	.000
	Menstrual Hygiene Management Education and Awareness	-.095	.036	-.151	-2.654	.009
	Menstrual Hygiene Management Sociocultural Factors	-.064	.045	-.076	-1.417	.158
	Clean Sanitation Facilities	.390	.056	.549	7.005	.000

a. Dependent Variable: Self-Esteem of Vulnerable Girls during Menstruation in the Coffee Ministry in Kibra

The regression analysis above demonstrates how the different variables in menstrual hygiene influence self-esteem of vulnerable girls during menses in the Coffee Ministry in Kibra. The first variable which is Menstrual Hygiene Products (B = 0.399, p = .000) hints that it had a strong positive and significant effect on self-esteem. In this regard, as access to menstrual products improves, self-esteem increases.

In regards to the variable of clean Sanitation Facilities (B = 0.390, p = .000) hints a strong positive and significant effect. This means that clean, private toilets bolster self-worth and confidence among girls when undergoing menstruation. For menstrual hygiene management education and awareness which had B = -0.095, p = .009) showed a surprisingly minor but significant negative impact on self-esteem. This could hint that heightened awareness with no corresponding assistance or resources may increase anxiety or self-consciousness. The last element which was sociocultural factors (B = -0.064, p = .158) had a negative but non-significant impact. This hinted that sociocultural expectations may diminish self-esteem though the impact is not statistically conclusive in this particular framework.

To summarize, access to menstrual products alongside presence of clean sanitation facilities significantly improves self-esteem of vulnerable girls in the Coffee Ministry, Kibra. At the same time, access to education or cultural norms translates to complex or limited effects when they lack supportive environments.

CHAPTER FIVE

DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

The study examined the effects of menstrual hygiene management on the self-esteem of vulnerable girls in Kibra in Nairobi Kenya. The study were: assessed the effects of menstrual hygiene products on the self-esteem of vulnerable girls in the Coffee Ministry in Kibra; determined the effects of menstrual hygiene management education and awareness on the self-esteem of vulnerable girls in the Coffee Ministry in Kibra; examined the effects of menstrual hygiene management sociocultural factors on the self-esteem of vulnerable girls in Coffee Ministry in Kibra and; assessed the effects of clean sanitation facilities on the self-esteem of vulnerable girls during menstruation in the Coffee Ministry in Kibra. This chapter provides a discussion of the findings, a summary of key findings, conclusion, and recommendations.

5.2 Discussions

In this section, a discussion of the study findings is presented. This is done in line with the study objectives. The findings are also analyzed in line with findings from other studies.

5.2.1 Social Demographic Characteristics of Respondents

5.2.1.1 Response Rate

The study targeted 237 respondents that included; 222 girls aged 10-19 years and 15 community workers. Out of these, 219 girls and all the key informants responded. These make a return rate of 98.7% for the girls and 100% for the community workers. Some of

the girls who never responded failed to show up for their appointments. In this regard, a response rate of 98.7% was considered sufficient to capture comprehensive insights on menstrual hygiene experiences (Cooper & Schindler, 2013). The high response rate also indicated a reduction in non-response bias hence increasing confidence in validity and study findings. This corresponds with Atchison et al. (2025), study that suggested that high response rate ensures an effective sample size, accuracy and an increased generalizability of the findings.

5.2.1.2 Age of respondents

The finding indicated that most of the girls were aged 13-15 years, accounting for 28% of the sample. These were followed by those aged 16-17 years, 26%. The 10-12 years age group accounted for 25% girls, while the 18-19 years group represented 21% girls. These provided diverse responses because the vulnerable girls were drawn from numerous age groups thus gave diverse responses regarding their menstrual hygiene management experiences and self. These findings correspond with Method et al (2024), study that involved 400 girls aged 10-19 from 4 different schools and were spread out from form 1 to form 4 to reduce biasness and increase chances of varied responses.

5.2.1.3 Level of Education of Respondents

The study found that the most of the girls, 66.2%, were in secondary education, while 31.1% were in primary education. Only a small proportion, 2.7%, were not currently in school. Therefore, the findings showed the majority of respondents were schooled thus able to understand the context of research and give valid information concerning menstrual concepts. The finding agrees with a study conducted by Tumusime, Twabeza and Bargye

(2024), who established that there is a correlation between being in school and knowledge on menstrual matters.

5.2.1.4 Living Situation of Respondents

The study findings suggested that the majority of the girls, 53.9%, lived with both parents. While those residing with only one parent accounted for 37.4%. A smaller group of 8.7%, lived with a guardian. The findings demonstrated that the respondents came from various backgrounds hence could offer a holistic representation of the subject under investigation. Similarly, Namuwonge et al. (2025), in their study found out that 82.9% of the respondents were not orphans, while the majority 76% lived with their biological parents, and the average population of the family was 7 people among them 3 children in a household.

5.2.1.5 Receiving of External Support

The study found out that 50.2% of the vulnerable adolescent girls received some form of external support such as from NGOs, churches, or the government. Conversely, 49.8% did not receive any external support. This result is similar to a study which found out that 75% of the respondents were receiving support from internal and external support. while 25% have no access to external support. These participants received external support from NGOs/CBOS, government, expert groups, various religious groups and some respondents sponsored themselves (Mokaya, 2015).

5.2.2 Effects of lack of menstrual hygiene products on the self-esteem of vulnerable girls.

The study indicated that during menstruations girls' self-esteem levels were generally in the low to moderate range, with a total mean of 14.8, which is slightly below the cut-off of 15 for low self-esteem. In his study, Hepper (2016), noted that adolescents

with low self-esteem find it difficult to attempt tasks that may lead to failure or shame, tend to avoid forming relationships, lack motivation and may engage in risky behavior.

Items reflecting positive self-evaluation such as “On the whole, I am satisfied with myself” and “I feel that I’m a person of worth” recorded mean scores of 2.4 and 2.0, showing moderate agreement. This finding agrees with Fennel (1998), who argued that individuals with self-esteem recognize both strengths and weaknesses. Further, they are more willing to attempt new and complex tasks. Moreover, a study suggested that healthy self-esteem contributes to improved academic and social life, better relationships and reduced antisocial conduct (Mann et al., 2004).

The finding further revealed some girls experienced self-doubt and lacked pride in themselves statement that indicated negative self-perception such as “I feel I do not have much to be proud of” and “I wish I could have more respect for myself” recorded mean scores of 1.8 and 0.7, showing some degree of self-doubt. These results agree with Ridley et al. (2020), who pointed out that people from poor backgrounds face challenges in meeting basic needs and may experience helplessness, hopelessness and anxiety.

The results therefore demonstrate that although many girls show moderate levels of self-esteem, a considerable number exhibit tendencies associated with low self-esteem. Self-esteem is particularly important in adolescence as it is a stage of physical, emotional and social transition (Mastorci et al., 2024). In Maslow’s hierarchy of needs, esteem relates to feeling respected and accomplished. Therefore, when girls manage menstruation confidently, their sense of worth is strengthened.

The qualitative findings supported this interpretation by indicating that girls experience discomfort, and shame in the absence of menstrual products. These experiences affect their self-esteem when menstrual products are unavailable. Girls mentioned feelings of shame and discomfort when pads were not available. Sommer et al. (2017), similarly found that lack of menstrual hygiene management leads to reduced self-esteem and poorer academic outcomes.

A large proportion of respondents had already started menstruating, indicating that menstrual hygiene management was directly relevant to their daily experiences, with 156 (71.2%) reporting that they had begun menstruating, while 63 (28.8%) had not. Worku et al. (2024), also described adolescence as a period marked by major changes that influence future health and emotional development, which highlights the importance of proper menstrual management.

Although many girls indicated having some access to menstrual products, with a mean of 1.83 leaning towards “Always” and “Sometimes.” The study showed that access was inconsistent and dependent on schools, NGOs or schools, hence dependence on external support indicates economic challenges experienced by vulnerable households. This aligns with the World Bank (2022), which observed that menstrual product access differs across the world due to cultural and socioeconomic factors. Guardians or parents were the main source for menstrual products for 36.5% of the girls. Kabiru (2020), noted that many families must prioritize food over sanitary pads, sometimes forcing girls to share menstrual products, increasing risk of infection. Another 34.2% of the respondents obtained products from school, while NGO and church-based sources accounted for 20.5%. Amref Health Africa (2023), also reported that many girls cannot afford sanitary pads. A

few girls bought products themselves (5.9%) or obtained them from other sources (2.7%). Amolo (2024), found similar results for girls in rural Kenya, where lack of resources sometimes forces them to seek support from boyfriends.

The results also showed that 45 girls (20.5%) had missed school due to lack of products, while 174 (79.5%) had not, which supports Hennegan et al. (2019), who found that access to menstrual products improves school attendance and motivation.

The girls reported feeling worried about accessing menstrual materials, represented with a mean score of 2.63, indicating that access to menstrual products led to increased confidence. Similar to Shallo et al. (2018), who observed that lack of access to pads causes worry and anxiety. The girls further reported that lack of products affected them emotionally. Feeling ashamed was reported by 28.8%, while 41.6% felt less confident. Anxiety was reported by 11%, and 18.7% reported no change. Miiro et al. (2018), noted that proper menstrual products allow girls to manage menstruation discreetly, increasing confidence. Das et al. (2015), also emphasized the need for access to menstrual products to support girls' dignity and confidence.

The interview results echoed these findings. It was observed that the high cost of pads was a major barrier for many vulnerable adolescent girls. irregular and inconsistent sanitary pad increased reliance on external support hence negatively affecting girls' confidence and emotional well-being. This finding aligns with Das et al. (2015), similarly found that irregular access lowers self-esteem and increases dependence.

Finally, a strong and statistically significant relationship between access to menstrual products and self-esteem was found ($r = 0.976$, $p < 0.01$). The results showed

that better access to menstrual products is associated with higher levels of self-esteem among girls in the Coffee Ministry in Kibra.

5.2.3 Effects of menstrual hygiene management education and awareness on the self-esteem of vulnerable girls in the Coffee Ministry in Kibra.

The second objective of the study focused on how menstrual hygiene education and awareness influence the self-esteem of vulnerable girls in the Coffee Ministry in Kibra. Both the questionnaire findings and interview responses were used to explain this objective.

The study indicated that most of the girls, 93.2% reported receiving some form of teaching or awareness on menstrual hygiene management. Only 15 girls, 6.8%, said they had not been taught about it. This indicated that menstrual knowledge is accessible in community initiative. This study supports Adanma et al. (2023), who stressed that increasing awareness about menstrual health helps reduce stigma and encourages safer menstrual practices. Menstrual health literacy involves understanding menstruation as a biological and social experience, and having this knowledge is important for enabling girls to manage their periods confidently (Van Eijk et al., 2016).

The study further demonstrated that the main sources of menstrual hygiene information were schools (41.1%) and NGOs (35.2%) was ranked second, followed by parents or guardians (16.4%), friends (4.6%), and other sources (2.7%). These results show that most girls learn about menstruation from organized institutions promoting menstrual literacy and preparing girls to manage their menstruation confidently. Similar research by Bobel (2010) and Van Eijk et al. (2013), found that open communication and formal menstrual education help reduce misconceptions and negative attitudes. Worku et al.

(2024), also established that girls receive menstrual guidance from their families and peers, which influences their beliefs and preparedness.

Most girls felt confident in handling their menstruation hygienically. This is an indication that menstrual knowledge and awareness increase girls' confidence and preparedness during menstruation. Although the responses differ slightly, as shown by the standard deviation of 1.07, confidence levels were generally high. These findings are in line with Venkatraman Chandra-Mouli et al. (2017), who observed that information, preparation and knowledge are key factors in building girls' confidence. The study also showed that 85.8% of girls felt confident about managing menstruation hygienically. Only a small group did not feel confident. Rani et al. (2022), also reported similar results, highlighting the importance of menstrual education in improving confidence among adolescents.

Interview responses added more detail. It was found out that Coffee plays an important role in sharing information about hygiene and self-care. The girls learn about the biological processes of menstruation and the importance of good hygiene and correct use of menstrual products. Further, menstrual knowledge was passed through the internet, especially social media and search engines. These findings agree with Lihemo and Hafeez-Ur-Rehman (2017), who noted that online platforms help girls seek answers privately, especially when they feel shy or unsure. Other sources mentioned by participants included church programs and life-skills classes in schools.

The strong and statistically significant relationship between menstrual hygiene management education and awareness and the girls' self-esteem ($r = 0.937$, $p < 0.01$) indicate that improved education and awareness are associated with better self-esteem.

When vulnerable girls understand menstrual matters they are less likely to feel isolated, embarrassed, anxious or confused hence they manage their menstruation in comfort and confidence. The findings also suggested that menstruation education results in increased self- confidence and the stigma associated with menstruation is reduced. Therefore, knowledge on menstrual matters goes beyond practical hygiene, it strengthens the girls' emotional well-being and sense of dignity.

5.2.4 Effects of sociocultural factors regarding menstrual hygiene management on the self-esteem of vulnerable girls.

The third objective of the study was to examine how sociocultural factors related to menstrual hygiene management influence the self-esteem of vulnerable girls in the Coffee Ministry in Kibra.

The findings indicated that most girls felt free to discuss menstruation openly and comfortably. The mean score was 1.55 showing gradual openness regarding menstrual conversation with some family members. However, the study reveals that stigma and restrictions still exist for a significant proportion of vulnerable girls. These results support Knight (2020), who found that cultural and religious barriers often make it difficult for girls to discuss menstrual matters with their caregivers. Rob (2019), also observed that stigma and shame contribute to limited discussion with teachers.

Although many girls that is 61%, indicated that they are comfortable in discussion on menstruation, others were not comfortable at 21.5 % while 16.9% were uncertain. These findings suggest that sociocultural stigma continues to influence patterns of communication and there is a need for establishment of emotional support systems. This corresponds to Holmes et al. (2021), who noted that many adolescents in low- and middle-

income contexts have little information about managing menstruation and are unsure whom to approach for support. Moreover, these results agree with Shamsudeen et al. (2020), who reported that girls face restrictions and stigma during menstruation, which affects their willingness to ask for support.

Most respondents 68% reported that they did not feel judged or ashamed during menstruation. This may be an indication of increased support and awareness within the community and family unit. These findings support Adanma et al. (2023), who emphasized that menstrual health awareness helps reduce stigma and improve menstrual practices. However, 70 girls (32%) said they felt judged or shamed demonstrating that menstrual stigma remains present even at household level. Miiro et al. (2018), similarly argued that access to proper information about menstruation promotes confidence and self-reliance.

Most respondents 107 girls (48.9%) reported that they do not follow cultural and religious rules during their menstrual period, (28.3%) indicated that they do follow. The respondents reported that they are restricted from participating in any church program or approach the pulpit. 62 girls while 50 girls (22.8%) are not sure. This suggests that sociocultural beliefs vary across households and communities. The findings of the study contrast with Kumar and Srivastava (2011), who found that cultural beliefs strongly influence girls' behavior during menstruation. The results, however, are in line with research by Tamiru et al. (2015), which found that cultural myths and taboos restrict girls from participating in social and religious activities. Lihemo and Hafeez-Ur-Rehman (2017), also reported that limited discussions on reproductive health leads to minimal awareness.

A majority of the respondents 179 girls (81.7%) felt supported by family, friends and the Coffee Ministry during menstruation, 16 (7.3%) indicated that they did not feel supported and 24 (11%) reported that sometimes they receive support. These findings agree with Arora (2021), who noted that support from family, friends and community organizations influences feelings of dignity and confidence during menstruation. Girls without these support systems reported greater feelings of insecurity and isolation.

The interview's findings revealed that menstruation is not openly discussed within many households, especially with the fathers. The findings further indicated that the vulnerable girl's menstrual experience is marked by frustration, discomfort, restrictions and shame because the family fails to acknowledge the menstrual needs, experiences and limited freedom during menstruation. These responses agree with Bobel (2010), and Van Eijk et al. (2013), who noted that open communication and comprehensive menstrual education are important in reducing stigma.

The strong and statistically significant relationship between sociocultural factors and self-esteem ($r = 0.936$, $p < 0.01$) indicate that sociocultural support and openness toward menstruation are linked with higher levels of confidence and self-perception among the girls in the Coffee Ministry. The results suggest that reduction of sociocultural restrictions and promotion of open discussions on menstrual hygiene practices, positively influence girls' confidence and self-perception.

5.2.5 Effects of inaccessibility to clean sanitation facilities on the self-esteem of vulnerable girls during menstruation.

The study showed that most girls sometimes felt ashamed of managing their menstruation in an environment lacking privacy, represented by a mean score of 2.61.

Some respondents rarely felt shame of being seen when washing their menstrual materials. These results suggest that many girls did not always feel confident when managing menstruation in shared or open spaces. This is consistent with AMREF (2023), which emphasizes that girls should experience dignity and confidence during menstruation when their hygiene needs are met.

The study further explored whether respondents had access to safe, clean, and private toilets. The mean score of 1.76 indicated that most girls sometimes had access to adequate sanitation facilities. However, others lacked proper changing spaces, an indication that safe and private sanitation facilities remained inconsistent for some girls. These findings agree with UNICEF (2020) and World Bank Group (2022), which noted that many girls globally struggle to manage menstruation in safe and dignified conditions due to limited products, clean water, and proper facilities.

Out of the 219 girls, 154 (70.3%) reported having facilities for changing menstrual products at home, school or community centers. This finding aligns with Girod (2017), who found that quality changing spaces enhance dignity, hygiene, and safety. In contrast, 34 girls (15.5%) said “No,” and 31 girls (14.2%) were unsure, suggesting that changing facilities were unavailable or unreliable for some of them. The results also showed that 127 girls (58%) believed the lack of proper toilets affected their attendance or participation in activities. These findings agree with Adane et al. (2025), which showed that improved sanitation reduces absenteeism among girls. Therefore, the findings indicate that inadequate sanitation facilities affected their participation and school attendance.

Most respondents 70.3% suggested that access to clean and private places led to increased self-confidence, while 36 adolescent girls (16.4%) reported that it had no effect.

The study found out that some girls (13.2%) experienced anxiety related to changing or disposing of menstrual products. These outcomes align with Sommer et al. (2017), who reported that poor menstrual hygiene management lowers self-esteem and academic performance. Furthermore, these findings agree with Kaur et al. (2018), who found that girls avoid school when disposal facilities are inadequate.

The interviews further reveal that sanitation facilities were a significant concern in Kibra. The school toilets were crowded, lacked privacy, lockable doors hence increased discomfort and embarrassment. Some girls indicated that they preferred to change used menstrual products at home where there are privacy and safety. These findings are consistent with the World Bank (2022), and Singolyo and Ngussa (2019), who reported similar challenges in African settings. At home, sanitation difficulties remained due to shared latrines, public toilets, and insecurity. Paying for toilet use was an additional burden, and some girls feared harassment in isolated areas. These outcomes are similar to Sampson (2019), and UNICEF (n.d.), who found that access to improved sanitation is limited in low-income areas and affects girls' emotional well-being.

The strong and statistically significant relationship between clean sanitation facilities and self-esteem ($r = 0.974$, $p < 0.01$) suggest that improved access to safe sanitation is associated with better confidence and emotional well-being among girls in the Coffee Ministry.

5.3 Summary of Main Findings

The study had an overall response rate of 99.4% where 219 girls and 15 community workers participated in the study. Among the adolescent vulnerable girls who participated in the interview the largest proportion 28 % were aged 13-15 years, then girls aged 16-17

years accounting for 26%, then 1–12 at 25% and girls aged 18-19 representing 21%. Those in secondary school 66.2% in primary school 31.1% and 2.7% were not currently in school. 53.9%, lived with both parents, 37.4% with single parent while 8.7% lived with guardians. Further, in regards to their source of menstrual products 50.2% received from e NGOs, churches and government on the other hand 49.8 % did not receive from external support.

5.3.1 Effects of menstrual hygiene products on the self-esteem of vulnerable.

The first objective of the study was to evaluate how menstrual hygiene products impact the self-esteem of vulnerable girls in the Coffee Ministry in Kibra. This section presents the findings gathered from questionnaires and interviews. The results are divided into two parts. The first part discusses the dependent variable, self-esteem, while the second part focuses on menstrual hygiene products.

The dependent variable in this study was the self-esteem of vulnerable girls in the Coffee Ministry in Kibra. The Rosenberg Self-Esteem Scale was used to measure self-esteem. The descriptive statistics showed that the vulnerable girls' self-esteem levels were mostly low to moderate, with an average score of 14.8, just below the threshold of 15 for low self-esteem. Many interviewees indicated moderate satisfaction with themselves and self-worth. On the other hand, some showed feelings of self-doubt and lack of pride in themselves with a score of 1.8 and 0.7 respectively. Overall, the data indicates that while many respondents show moderate self-esteem, a significant number may struggle with low self-esteem.

Menstruation was reported to affect vulnerable adolescent girls’ self-esteem, because of societal stigma, social isolation, and emotional distress especially when

products were unavailable. However, constant access to quality menstrual products improved their confidence and well-being.

The study also investigated how often girls could access menstrual hygiene products like pads, tampons, and cups. Most respondents had regular access with an average score of 1.83. The low standard deviation of 0.80 indicated that access varied little among the participants.

Moreover, the study revealed that the menstrual products were obtained from guardians or parents, 80 girls (36.5%), 75 girls (34.2%), from school, 45 girls (20.5%), by non-governmental organizations or church sources, 13 girls (5.9%) bought for themselves, 6 girls represented by (2.7%) obtained them from other sources.

The study showed the majority of respondents had not missed school because of inadequate menstrual products accounting for 174 girls (79.5%); However, 45 girls (20.5%) had missed school. The study established with an average score of 2.63 that the girls had concerns about accessing more products while standard deviation of about 1.07 indicated a moderate level of variability in responses, meaning some girls worried more often than others, but overall, responses were spread out around the average.

The findings showed that the lack of access to menstrual products significantly affected the vulnerable girl's emotional well-being. Specifically, 63 girls (28.8%) felt ashamed, Additionally, 91 girls (41.6%) felt less confident, Anxiety affected 24 girls (11.0%), and 41 respondents (18.7%) reported no change in their feelings.

Many of the vulnerable girls in the Coffee ministry when the suitable menstrual products were unavailable resulted in using uncomfortable and alternative materials like

plastic bags, old clothes, or tissue paper. Additionally, some girls chose to stay home to avoid leaks, shame, or discrimination. Girls who received constant supplies from local organizations reported feeling more confident and able to participate fully in school.

The Pearson correlation analysis demonstrated strong, positive, and statistically significant relationships between access to menstrual products and the self-esteem of vulnerable girls in the Coffee Ministry in Kibra. Specifically, access to menstrual hygiene products exhibited the highest correlation with self-esteem ($r = 0.976$, $p<0.01$), followed by clean sanitation facilities ($r = 0.974$, $p<0.01$).

5.3.2 Effects of menstrual hygiene management education and awareness on the Self-Esteem of vulnerable girls.

In this section the summary of the key findings of the second objective of the study "to find out how menstrual hygiene management education affects the self-esteem of vulnerable girls in the Coffee Ministry in Kibra." is provided by the responses from questionnaires and interviews.

The study showed that the majority of respondents, 204 girls (93.2%), had received some education on menstrual hygiene management (MHM). However, only 15 girls (6.8%) said they had not received any education or training. Their main sources of menstrual education were for 90 girls (41.1%) schools, while 77 girls (35.2%) received from non-governmental organizations (NGOs), those taught by their parents or guardians were (36 girls, 16.4%), friends (10 girls, 4.6%), and other sources (6 girls, 2.7%).

Many girls felt confident in managing their menstruation safely and hygienically with a mean score of 1.67. Further, the standard deviation of 1.07 indicated some variation in responses, but overall, confidence levels were generally high among the respondents.

Out of the 219 respondents, the majority 85.8% felt confidence in handling menstruation safely and hygienically because of access to menstrual knowledge. However, a small percentage, 5.5%, did not feel confident and 8.7% were unsure.

Interview participants revealed that vulnerable girls in the Coffee Ministry in Kibra access menstrual hygiene education from various sources, including schools, family, churches, peer groups, and community programs. Most girls first learned about menstruation from family, especially mothers, older sisters, or friends. For some, this was comforting; for others, it was confusing due to the societal silence surrounding the topic. Additionally, some reported to have learned from digital platforms like Google and TikTok. However, cultural taboos sometimes limited the depth of information shared, leaving girls to seek answers from peers to fill in the gaps.

Pearson correlation indicated a strong and statistically meaningful relationship between menstrual hygiene management education and awareness and the self-esteem of vulnerable girls ($r = 0.937$, $p < 0.01$).

5.3.3 Effects of sociocultural factors regarding menstrual hygiene management on the self-esteem of vulnerable girls in the Coffee Ministry, in Kibra

The third objective of the study was to examine how menstrual hygiene management and sociocultural factors affect the self-esteem of vulnerable girls in the Coffee Ministry in Kibra. The interviewee felt fairly free to talk about menstrual matter with family members at an average score of 1.55. The standard deviation of 0.76 indicated some variation in responses, but overall, confidence among the responders tended to be high. Additionally, the study found out that out of the 219 respondents, most 135 girls (61.6%) demonstrated openness in discussing menstruation with family members, 47 girls (21.5%), did not feel comfortable while 37 responders (16.9%) were unsure. A vast

majority of 149 girls (68%) did not feel judged or shamed by others during their periods, 70 girls (32%), felt judged or shamed when menstruating. Among the 219 respondents, most 107 girls (48.9%) indicated that they were not following cultural or religious rules when menstruating. However, 62 girls (28.3%) revealed that they were following menstrual rules while 50 girls (22.8%) said they were unsure about following cultural or religious rules during their menstruation.

A large majority 179 girls (81.7%) felt supported by their family, friends, and the Coffee Ministry Organization during menstruation, 24 girls (11%) reported sometimes feeling supported while 16 girls (7.3%) did not feel supported. According to interview respondents, cultural attitudes regarding menstruation in the communities of Coffee Ministry greatly influenced girls' self-esteem, often negatively. Menstrual health is surrounded by silence, misinformation, and taboos, with many families, including fathers, avoiding open discussions. It was found out that girls received little emotional support, some families imposed social restrictions, such as prohibitions on interacting with boys. Their menstrual experience was characterized by misinformation and myths, such as missing periods indicating a danger and menstruation are contagious, resulting in fear and confusion.

Girls reported being teased or ostracized after menstrual accidents or for bodily odors, leading to feelings of shame, guilt, and dehumanization hence many preferred to distance themselves from friends to avoid menstrual stigma.

Pearson correlation showed a strong and statistically meaningful relationship was observed between menstrual hygiene management sociocultural factors and the self-esteem of vulnerable girls ($r = 0.936$, $p < 0.01$).

5.3.4 Effects of inaccessible to clean sanitation on the self-esteem of vulnerable girls.

The fourth objective of the study was to assess the effects of clean sanitation facilities on the self-esteem of vulnerable girls during menstruation in the Coffee Ministry in Kibra. The findings' mean score of 2.61 showed that many respondents sometimes felt ashamed of being exposed while washing their menstrual materials. While the low standard deviation of 1.20 showed minimal variation among the participants. Most of the girls sometimes had access to adequate toilet facilities as observed from a mean score of 1.76 while the low standard deviation of 0.98 indicated little variation in responses.

Regarding the availability of changing facilities, 154 girls (70.3%) had access at home, school or community centers (15.5%) did not have sanitation facilities, while 31 (14.2%) were unsure. Most of the respondents, 127 girls (58%) demonstrated that inadequate toilets affected their participation and school attendance however, 92 (42%) said it did not. 154 girls (70.3%) reported safe and clean sanitation facilities improved their confidence, 36 (16.4%) indicated no change, while 29 (13.2%) said it made them anxious.

Most girls, 123 (56.2%), reported that they were not worried about where to dispose of used menstrual materials, while 63 (28.8%) were concerned, and 33 (15.1%) were unsure. The mean score of 2.77 showed that respondents sometimes worried about being seen, while changing menstrual materials at home. The low standard deviation of 1.22 again showed limited variation.

From the interviews, girls pointed out that sanitation facilities in the Coffee Ministry community played a major part in shaping their confidence during menstruation. Many reported that school toilets were crowded, lacked privacy and were often unhygienic. The absence of lockable doors heightened discomfort and embarrassment, forcing some girls to change at home. At home, the challenges persisted due to shared latrines, the cost

of public toilets and concerns about security. Some girls avoided using toilets altogether for fear of harassment. These difficulties led to delayed pad-changing, increased risk of infection and discomfort, and sometimes school absenteeism. Poor sanitation therefore affected girls emotionally, socially and physically.

A strong and statistically significant correlation was found between clean sanitation facilities and self-esteem ($r = 0.974$, $p < 0.01$). Multivariate analysis showed that the four independent variables accounted for 96.1% of the variation in self-esteem ($R^2 = 0.961$). The F-test confirmed that the independent variables collectively predicted self-esteem ($F = 1335.846$, $p < 0.05$).

Among the four variables, the strongest predictors of self-esteem were Menstrual Hygiene Products ($\beta = 0.655$, $p < 0.001$) and Clean Sanitation Facilities ($\beta = 0.549$, $p < 0.001$). This indicates that access to menstrual products and adequate facilities contribute greatly to improving confidence and dignity during menstruation. Menstrual hygiene management education and awareness had a negative but significant effect ($\beta = -- 0.151$, $p = 0.009$), which may demonstrate that awareness alone, without resources or support, can increase concern rather than resolve it. Sociocultural factors were not significant predictors of self-esteem ($p = 0.158$) and were excluded from the final model.

5.4 Conclusion of the study

This study sought to determine the effects of menstrual hygiene management on the self-esteem of vulnerable girls in the Coffee Ministry in Kibra, Nairobi County. According to the findings, the following conclusions have been drawn based on specific objectives as follows:

5.4.1 Effects of lack of menstrual hygiene products on self-esteem of vulnerable girls.

The study concluded that access to menstrual hygiene products strongly influences the self-esteem of vulnerable girls in Coffee ministry in Kibra. Girls who consistently had access to menstrual products had higher confidence, dignity and a positive sense of self-worth. However, limited access to menstrual products led to feelings of shame, embarrassment, social withdrawal, anxiety, school absenteeism and in some cases dependence on others for support. These emotional effects negatively influenced self-esteem and restricted participation in school and social life. The findings implied that efforts to increase the availability and affordability of menstrual products, particularly through local organizations and support systems, are key in improving girls' confidence and emotional well-being.

Therefore, the study concludes that enhanced access to menstrual hygiene products results in increased self-esteem, confidence, school participation and emotional wellbeing of vulnerable girls.

5.4.2 Effects of menstrual hygiene management education and awareness on self-esteem of vulnerable girls.

The results confirmed that menstrual hygiene education and awareness significantly contributed to self-esteem among girls in the Coffee Ministry in Kibra. Further, Menstrual education is received from schools, NGOs and other sources, such as digital platforms and helps in handling menstruation more confidently and safely. However, the findings also showed that awareness alone did not always result in higher self-esteem. In some cases, increased awareness was linked with greater worry or uncertainty, especially when the girls lacked adequate products, facilities or family support.

These findings determined that the need for education and awareness programmes are necessary in improving girls' understanding and confidence in relation to menstruation, without practical resources, guidance and emotional support leading to anxiety and uneasiness.

5.4.3 Effects of sociocultural factors regarding menstrual hygiene management on the self-esteem of vulnerable girls.

Cultural beliefs, expectations and taboos surrounding menstruation have a clear effect on girls' self-esteem ($r = 0.936$, $p < 0.01$). Many girls continue to experience shame, stigma and restrictions because of prevailing cultural and community attitudes. Although a portion of the respondents felt free to discuss menstruation within the family, social silence and myths and misconceptions remain common hence contributes to fear due to restriction such as not to interact with boys or participate in religious activities, confusion and emotional distress. Encouragement from family, friends and community promotes acceptance, openness and increased confidence in managing menstruation.

The findings therefore concluded that addressing cultural barriers, creating open dialogue and promoting community-based support are essential for improving self-esteem and dignity among girls.

5.4.4 Effects of inaccessible clean sanitation on self-esteem of vulnerable.

The study established that availability of clean, private and safe sanitation facilities was closely linked to girls' self-esteem ($r = 0.974$, $p < 0.01$). clean, safe and private, sanitation facilities significantly improve girls' confidence and help them to comfortably manage their menstruation in dignity. Conversely, inadequate sanitation, lack of privacy and safety concerns lead to shame, anxiety and reduced participation in activities. These

circumstances also affect school attendance and daily routines. The study therefore concludes that improving sanitation infrastructure and privacy is essential for promoting dignity, emotional stability and a sense of safety during menstruation.

The study established that access to clean and safe sanitation facilities results in more confidence, comfort and increased participation in school and community activities during menstruation.

The study concludes that menstrual hygiene management significantly affects the self-esteem of vulnerable girls in the coffee ministry in Kibra. The strongest positive influence on self-esteem was found to be Access to menstrual products. Menstrual education and awareness increased understanding and confidence however it required more emotional, social and material support for a more positive result. Sociocultural factors remain to have a significant negative effect on girls' emotions and self-confidence during menstruation. Clean and safe sanitation facilities is necessary

5.5 Recommendations

Based on the findings of this study, the following recommendations are proposed:

5.5.1 Effect of lack of menstrual hygiene products on self-esteem of vulnerable girls.

Government and non-government groups should collaborate to supply free or low-cost products consistently in schools, community centers and health facilities. Since the findings showed that lack of menstrual products reduced confidence and dignity among girls, there is a need to improve availability and accessibility of quality menstrual products.

Community members and caregivers should also be made aware of the importance of supporting girls during menstruation as this contributes directly to improving their self-esteem. Distribution efforts should focus on ensuring girls use clean and comfortable

menstrual products so they do not depend on improvised materials that affect their confidence and health.

Parents and guardians should work collaboratively with local institutions to prioritize provision of quality menstrual products for their vulnerable girls rather than depending fully on the local institutions; this will ensure consistent access to the menstrual materials.

5.5.2 Effect of menstrual hygiene management education and awareness on self-esteem of vulnerable girls.

Learning institutions should include menstrual hygiene education programmes in the curriculum to emphasize its importance and ensure that teachers are continuously receiving training on how to address issues related to menstrual hygiene practices. These programmes must go beyond giving information and address myths and cultural taboos about menstruation.

Health workers, religious leaders, and community leaders should receive specialized training on menstrual matter to be better equipped to promote open and supportive conversations and better attitudes towards menstruation.

Peer education can also be applied to encourage sharing of knowledge and create supportive environments for girls. With proper sources of menstrual knowledge such as provision of menstrual hygiene demonstration protocols the girls can increase their confidence in handling menstruation hygienically. The government through the Ministry of health should ensure that there is sufficient and appropriate information on the internet for the vulnerable girls who fear asking or having open discussion about menstrual hygiene management.

5.5.3 Effects of sociocultural factors regarding menstrual hygiene management on the self-esteem of vulnerable girls.

Community leaders and social workers should develop community-based interventions necessary to addressing negative beliefs and cultural practices that restrict and isolate the vulnerable girls affecting their self-esteem.

Further, parents, religious leaders and community elders should be involved in awareness activities to help reduce stigma and encourage discussions about menstruation. Establishing safe spaces where girls are free to talk about menstruation and related experiences will help build confidence, reduce shame and support positive self-esteem in different settings.

Moreover, schools create safe space or counseling services where girls who have experienced stigma, shame, teasing and discrimination during menstruation can express themselves and receive emotional support and promotion of self-confidence and self-worth.

5.5.4 Effect of inaccessible clean sanitation on self-esteem of vulnerable girls.

The school should be encouraged to prioritize provision of clean and safe sanitation facilities, because clean and private sanitation was shown to directly influence confidence. Investments should be made to improve the condition of sanitation facilities in schools, homes and community spaces. Toilets should provide privacy, safety and hygiene, with lockable doors and disposal options for menstrual waste. Proper maintenance and cleanliness should be ensured so that girls can manage menstruation in a comfortable and dignified way.

The government and county government should plan and ensure there are enough community-based toilets especially in the informal settlement to avoid overcrowding and

reduce anxiety during menstruations. These toilets will complement those in non-government organizations and in schools.

5.6 Suggestions for Further Study

Further the research proposed exploring more on finding the relationship between menstrual hygiene practices across different regions and communities. This will help us understand how these variations affect girls' self-esteem.

The researcher suggests studies should explore more on social and demographic factors that impact access to menstrual products and availability of support systems for girls.

The study also suggested need for Long-term studies to evaluate effects of improvements in menstrual hygiene management on girls' mental health and social functioning.

Additionally, there should be more focus on acceptance and effectiveness of innovative menstrual health solutions among vulnerable girls and their influence on self-esteem.

Research should emphasis on the combined effects of comprehensive menstrual health education and sanitation facilities improvements in reducing stigma and increasing self-confidence.

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APPENDICES

Appendix 1: Consent Note

Title of Research Study: Effect of menstrual hygiene management on the self-esteem of vulnerable adolescent girls

Principal Investigator: Tabitha Wanjiku

Institution: Africa Nazarene University

Contact Information: tabbysirintai@gmail.com

Please read the following information carefully.

You are invited to participate in a research study examining the effects of menstrual hygiene management on the self-esteem of vulnerable girls in Coffee Ministry Kibera, Nairobi. Your participation is voluntary, and you may withdraw at any time without consequence. If you agree, you will be asked to complete a questionnaire about your menstrual hygiene practices and self-esteem, and you may also be invited to take part in an interview or focus group discussion. Your responses will be treated with strict confidentiality—no names will be recorded, and all data will be securely stored for research purposes only. While there are minimal risks, such as emotional discomfort in responding to certain questions, a counselor will be available if needed. Your input will help improve awareness and policies regarding menstrual hygiene for vulnerable girls.

By signing below, you confirm that you have read and understood the information, and had the opportunity to ask questions, and voluntarily agree to participate.

Participant's Name: _____ Signature: _____

Date: _____

Researcher's Name: _____ Signature: _____

Date: _____

For participant under the age of 18

I, the parent /guardian, give permission for my child to participate in this study.

Parent/guardian's Name: _____ Signature: _____

Date: _____

Appendix 2: Research Questionnaire I

Effects of Menstrual Hygiene Management on the Self-Esteem of Vulnerable Girls in Coffee Ministry in Kibera, Nairobi Kenya

(This is an anonymous questionnaire please answer the following questions tick or fill in where appropriate)

PART A: DEMOGRAPHIC INFORMATION

Age: ☐ 10–12 ☐ 13–15 ☐ 16–17 ☐ 18–19

Level of education: ☐ Primary ☐ Secondary ☐ Not in school

Living situation: ☐ With both parents ☐ With one parent ☐ With guardian ☐ Alone/Other

Do you receive any external support (e.g., NGO, church, government)? ☐ Yes ☐ No

Have you started menstruating? (Yes ☐ No ☐)

PART B: ACCESS MENSTRUAL HYGIENE PRODUCTS

How often do you have access to menstrual hygiene products (pads, tampons, cups, etc.)?

☐ Always ☐ Sometimes ☐ Rarely ☐ Never

Where do you usually get your menstrual hygiene products from?

☐ Parents/Guardians ☐ School ☐ NGO/Church ☐ Buy myself ☐ Other

Have you ever missed school or an activity because you lacked menstrual products?

☐ Yes ☐ No

Are you worried about how you would get more of my menstrual material if you ran out (e.g., if you needed to purchase materials, retrieve materials from home, or ask someone for materials)

☐ Always ☐ Sometimes ☐ Rarely ☐ Never

How does not having access to menstrual products make you feel?

☐ Ashamed ☐ Anxious ☐ Less confident ☐ No change

PART C: MENSTRUAL HYGIENE MANAGEMENT EDUCATION AND AWARENESS

Have you received any education or training about menstrual hygiene management?

☐ Yes ☐ No

Who provided the menstrual hygiene education?

☐ School ☐ Friends ☐ NGO ☐ Parents/Guardians ☐ Other

How confident do you feel to handle your menstruation safely and hygienically?

☐ Always ☐ Sometimes ☐ Rarely ☐ Never

Has learning about menstruation improved your self-esteem? ☐ Yes ☐ No ☐ Not sure

PART D: SOCIOCULTURAL FACTORS

Are you free to talk about menstruation with your family member?

☐ Yes ☐ No ☐ Sometimes

Have you ever felt judged or shamed by others during your period?

☐ Yes ☐ No

Are there cultural or religious rules you must follow when menstruating?

☐ Yes ☐ No ☐ Not sure

Do you feel supported by your (Family, Friends and Coffee ministry organization) during menstruation?

☐ Yes ☐ No ☐ Sometimes

PART E: ACCESS TO SANITATION FACILITIES

Do you feel ashamed that someone would see you while washing your menstrual materials?

☐ Always ☐ Sometimes ☐ Rarely ☐ Never

Do you have access to clean, safe, and private toilets during menstruation?

☐ Always ☐ Sometimes ☐ Rarely ☐ Never

Are there facilities for changing menstrual products at Home/school/community center?

☐ Yes ☐ No ☐ Not sure

Does lack of proper toilets affect your attendance or participation in activities?

☐ Yes ☐ No

How does having a clean and private place to manage your period affect your self-esteem?

☐ Increases confidence ☐ No change ☐ Makes me anxious

Are you worried about where to dispose your used menstrual materials?

☐ Yes ☐ No ☐ Not sure

When at home, are you worried that someone would see you while changing your menstrual materials? ☐ Always ☐ Sometimes ☐ Rarely ☐ Never

Section F: Rosenberg Self-Esteem Scale (Rosenberg, 1965)

Instructions: Below is a list of statements dealing with your general feelings about yourself during your last menstruation period. If you **strongly agree**, tick in that column. If you **agree** with the statement, tick in the agree column. If you **disagree**, tick disagree. If you **strongly disagree**, tick strongly disagree.

No	Items	Strongly agree	Agree	Disagree	Strongly Disagree
1.	On the whole, I am satisfied with myself.				
2.	At times, I think I am no good at all.				
3.	I feel that I have a number of good qualities.				
4.	I am able to do things as well as most other people.				
5.	I feel I do not have much to be proud of.				
6.	I certainly feel useless at times.				
7.	I feel that I'm a person of worth, at least on an equal plane with others.				
8.	I wish I could have more respect for myself.				
9.	All in all, I am inclined to feel that I am a failure.				
10.	I take a positive attitude towards myself.				

Appendix 3: Research Questionnaire II

Title of Study: The Effects of Menstrual Hygiene Management on the Self-Esteem of Vulnerable Girls in the Coffee Ministry in Kibera, Nairobi Kenya

Researcher: Tabitha Wanjiku Gitau

Institution: African Nazarene University

Contact Info: tabbysirintai@gmail.com

Objective: To explore how access to menstrual products, education, and sanitation facilities and social cultural issues affects girls' self-esteem.

(Give your response in relation to the last two menstrual cycles you have experienced.)

Age:

Menstrual status:

Living situation:

Main Interview Questions

A. Access to Menstrual Products

What do you usually use during your period?

Are those products easy to get?

What happens when you don't have pads?

How does it make you feel?

B. Menstrual Hygiene Education

Have you learned anything about how to manage your period?

Where did you learn it?

Has it made you feel more confident?

C. Cultural Belief

What do people in your family or community say about periods?

Are you ever treated differently when you're menstruating?

How do these things make you feel?

D Sanitation Facilities

Where do you change your pad during the day?

Are the toilets clean and private?

Have you felt embarrassed or unsafe?

E. Self-Esteem

How do you feel about yourself during your period?

What makes you feel good or bad about yourself then?

What would help you feel more confident?

4.Questions

What do you wish people understood better about girls' periods?

Is there anything else you want to share? Are there restrictions placed on you during menstruation (e.g., praying, cooking, going to school)?

Appendix 4: Research Permit

AFRICA NAZARENE UNIVERSITY

P.O.Box: 53067 – 00200
Nairobi, Kenya.
Tel: 020 252 7170/1 – 5
Email: vc@anu.ac.ke
www.anu.ac.ke

7th May, 2025

TO WHOM IT MAY CONCERN

RE: RESEARCH PERMIT: TABITHA GITAU STUDENT NO.16M03EMCP012

Tabitha Gitau Reg. No. (16m03emcp012) is a Bonafide postgraduate student at Africa Nazarene University in the School of Humanities and Social Sciences – Counseling Psychology department. She is pursuing a Master's degree in Counseling Psychology. This program entails Coursework and Thesis. She has successfully completed coursework and defended her thesis proposal entitled:

"Effects of Menstrual Hygiene Management on the Self Esteem of Vulnerable Girls in Coffee Ministry in Kibra, Nairobi Kenya".

Any assistance accorded to her to facilitate data collection and complete her thesis will be highly appreciated.

Faithfully,

Prof. Orpha Ongiti

Dean of Postgraduate Studies & Director Institute of Research.

Appendix 5: Area Administrator's Permit

THE PRESIDENCY
MINISTRY OF IN INTERIOR AND CO-ORDINATION OF NATIONAL GOVERNMENT
KIBRA SUB-COUNTY
KIBERA DIVISION

Telegram .....
Email: dcckibra@gmail.com

When Replying Please Quote

Ref. No.....

SENIOR CHIEF OFFICE,
LAINI SABA LOCATION
P.O BOX 30124-00100
NAIROBI,

Date 16th May 2025

Dear Sir/Madam

TO WHOM IT MAY CONCERN

RE: RESEARCH AUTHORIZATION LETTER

I, the undersigned **Richard Soy** Chief of ....**Laini Saba** (Location) hereby grant permission to .....**Tabitha Wanjiku Gitau**..... a student at African Nazarene University, to conduct academic research within Kibra constituency.

The research topic is:
"The Effects of Menstrual Hygiene Management on the Self-Esteem of Vulnerable Teenage Girls in Kibra, Nairobi."

This research is intended for academic purposes only and will involve data collection from selected individuals within the community. The researcher has been advised to observe ethical standards and respect the privacy, rights, and consent of all participants.

In case of any clarification, do not hesitate to contact my office.

Yours faithfully,

Appendix 5: Research License

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Ref No: **104308**

Date of Issue: **25/June/2025**

RESEARCH LICENSE

This is to Certify that Ms.. Tabitha Wanjiku Gitau of Africa Nazarene University, has been licensed to conduct research as per the provision of the Science, Technology and Innovation Act, 2013 (Rev.2014) in Nairobi on the topic: Effects of Menstrual hygiene Management on the self esteem of Vulnerable girls in Coffee Ministry in Kibra. Nairobi Kenya. for the period ending : 25/June/2026.

License No: **NACOSTI/P/25/417460**

104308

Applicant Identification Number

Deputy Director
NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Verification QR Code

NOTE: This is a computer generated License. To verify the authenticity of this document, Scan the QR Code using QR scanner application.

See overleaf for conditions

THE SCIENCE, TECHNOLOGY AND INNOVATION ACT, 2013 (Rev. 2014)

Legal Notice No. 108: The Science, Technology and Innovation (Research Licensing) Regulations, 2014

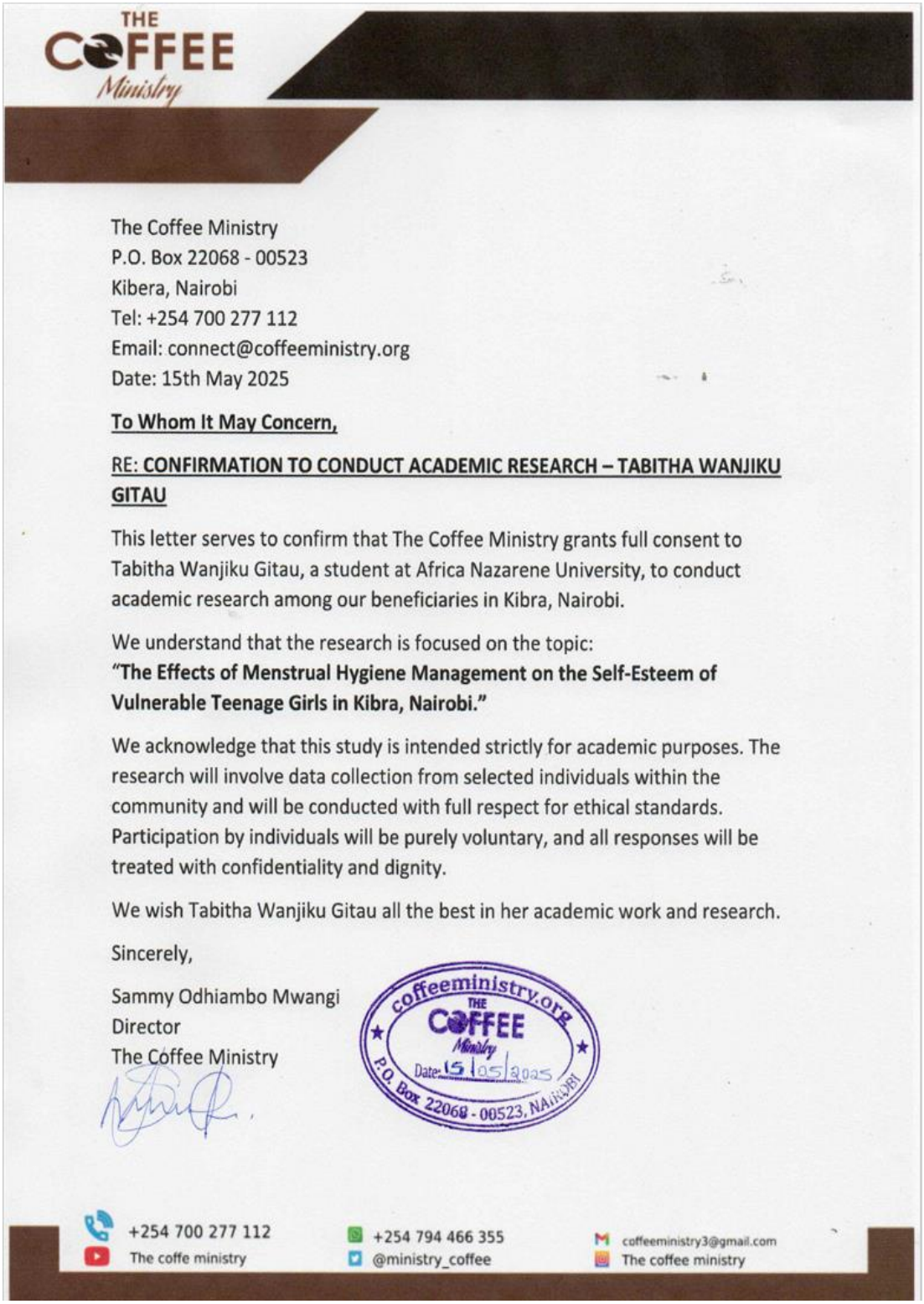
The National Commission for Science, Technology and Innovation, hereafter referred to as the Commission, was the established under the Science, Technology and Innovation Act 2013 (Revised 2014) herein after referred to as the Act. The objective of the Commission shall be to regulate and assure quality in the science, technology and innovation sector and advise the Government in matters related thereto.

CONDITIONS OF THE RESEARCH LICENSE

1. The License is granted subject to provisions of the Constitution of Kenya, the Science, Technology and Innovation Act, and other relevant laws, policies and regulations. Accordingly, the licensee shall adhere to such procedures, standards, code of ethics and guidelines as may be prescribed by regulations made under the Act, or prescribed by provisions of International treaties of which Kenya is a signatory to.
2. The research and its related activities as well as outcomes shall be beneficial to the country and shall not in any way;
    i. Endanger national security
    ii. Adversely affect the lives of Kenyans
    iii. Be in contravention of Kenya's international obligations including Biological Weapons Convention (BWC), Comprehensive Nuclear-Test-Ban Treaty Organization (CTBTO), Chemical, Biological, Radiological and Nuclear (CBRN).
    iv. Result in exploitation of intellectual property rights of communities in Kenya
    v. Adversely affect the environment
    vi. Adversely affect the rights of communities
    vii. Endanger public safety and national cohesion
    viii. Plagiarize someone else's work
3. The License is valid for the proposed research, location and specified period.
4. Neither the license nor any rights thereunder are transferable.
5. The Commission reserves the right to cancel the research at any time during the research period if in the opinion of the Commission the research is not implemented in conformity with the provisions of the Act or any other written law.
6. The Licensee shall inform the relevant County Director of Education, County Commissioner and County Governor before commencement of the research.
7. Excavation, filming, movement, and collection of specimens are subject to further necessary clearance from relevant Government Agencies.
8. The License does not give authority to transfer research materials.
9. The Commission may monitor and evaluate the licensed research project for the purpose of assessing and evaluating compliance with the conditions of the License.
10. The Licensee shall submit one hard copy, and upload a soft copy of their final report (thesis) onto a platform designated by the Commission within one year of completion of the research.
11. The Commission reserves the right to modify the conditions of the License including cancellation without prior notice.
12. Research, findings and information regarding research systems shall be stored or disseminated, utilized or applied in such a manner as may be prescribed by the Commission from time to time.
13. The Licensee shall disclose to the Commission, the relevant Institutional Scientific and Ethical Review Committee, and the relevant national agencies any inventions and discoveries that are of National strategic importance.
14. The Commission shall have powers to acquire from any person the right in, or to, any scientific innovation, invention or patent of strategic importance to the country.
15. Relevant Institutional Scientific and Ethical Review Committee shall monitor and evaluate the research periodically, and make a report of its findings to the Commission for necessary action.

National Commission for Science, Technology and
Innovation(NACOSTI),
Off Waiyaki Way, Upper Kabete,
P. O. Box 30623 - 00100 Nairobi, KENYA
Telephone: 020 4007000, 0713788787, 0735404245
E-mail: dg@nacosti.go.ke
Website: www.nacosti.go.ke

Appendix 7: Coffee Ministry Permit



THE COFFEE Ministry

The Coffee Ministry
P.O. Box 22068 - 00523
Kibera, Nairobi
Tel: +254 700 277 112
Email: connect@coffeeministry.org
Date: 15th May 2025

To Whom It May Concern,

RE: **CONFIRMATION TO CONDUCT ACADEMIC RESEARCH – TABITHA WANJIKU GITAU**

This letter serves to confirm that The Coffee Ministry grants full consent to Tabitha Wanjiku Gitau, a student at Africa Nazarene University, to conduct academic research among our beneficiaries in Kibra, Nairobi.

We understand that the research is focused on the topic:
"The Effects of Menstrual Hygiene Management on the Self-Esteem of Vulnerable Teenage Girls in Kibra, Nairobi."

We acknowledge that this study is intended strictly for academic purposes. The research will involve data collection from selected individuals within the community and will be conducted with full respect for ethical standards. Participation by individuals will be purely voluntary, and all responses will be treated with confidentiality and dignity.

We wish Tabitha Wanjiku Gitau all the best in her academic work and research.

Sincerely,

Sammy Odhiambo Mwangi
Director
The Coffee Ministry

coffeeministry.org THE COFFEE Ministry Date: 15/05/2025 P.O. Box 22068 - 00523, NAIROBI

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Appendix 8: Map of Study Area