MENSTRUAL HYGIENE MANAGEMENT PRACTICES AMONG ADOLESCENT GIRLS WITH DISABILITIES IN SELECTED PRIMARY SCHOOLS IN WAJIR COUNTY, KENYA

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REG NO: Q139/CE/28350/2015

A THESIS SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF MASTER OF PUBLIC HEALTH (REPRODUCTIVE HEALTH) IN THE SCHOOL OF HEALTH SCIENCES OF KENYATTA UNIVERSITY

OCTOBER, 2025

DECLARATION

This thesis is my original work and has not been presented for any academic honor in any other University.

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DEDICATION

This work is dedicated to all adolescent girls with disabilities who despite the challenges, face menstrual hygiene with strength and resilience.

ACKNOWLEDGEMENTS

I am deeply grateful to Allah for granting me the strength, health, and perseverance to complete this thesis.

My heartfelt appreciation goes to my supervisors for their invaluable guidance, constructive feedback, and encouragement throughout this research journey. Your expertise and patience have been instrumental in shaping this work.

I extend my sincere gratitude to the administration and teachers of the selected primary schools in Wajir County, as well as the adolescent girls who participated in this study. Your cooperation and willingness to share your experiences made this research possible.

To my family, especially my mama and my wife, Fatuma, I cannot thank you enough for your constant support, understanding, and belief in me. Special thanks to my sister Amina, and my friends Patricia and Peninah, for inspiring me with your passion for inclusion and reminding me why this research matters.

I am also thankful to my classmates, colleagues, and all those who offered words of encouragement, technical assistance, or any form of support during this journey.

Lastly, I acknowledge every person and organization that contributed, directly or indirectly, to the success of this thesis. Your efforts and goodwill will always be remembered.

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ABBREVIATIONS AND ACRONYMS

APD	:	Adjusted Prevalence Difference
HBM	:	Health Belief Model
KNBS	:	Kenya National Bureau of Statistics
MHM	:	Menstrual Hygiene Management
MoEST	:	Ministry of Education, Science and Technology
NACOSTI	:	National Commission for Science, Technology and Innovation
RTIs	:	Reproductive Tract Infections
SPSS	:	Statistical Package for Social Sciences
UNICEF	:	United Nations International Children's Emergency Fund
WHO	:	World Health Organization
UN	:	United Nations
WASH	:	Water, Sanitation and Hygiene

OPERATIONAL DEFINITION OF TERMS

Adolescent: Refers to a person aged 10 to 19 years inclusive.

Cultural factors: These are norms or practices frequently carried out or perceived to be important by a certain class or group of people. The cultural factors tend to vary based on the background, ethnicity or beliefs of individuals. In this study, these will constitute cultural practices relating to management of menstruation.

Determinant: This defines causative factors to a certain phenomenon, occurrence or event. In this study, it will relate to the underlying determinants influencing menstrual hygiene management.

Disability: This entails impairment in the function of the body posing a limitation of the individual's ability of undertaking their activities.

Menstrual Hygiene Management: This entails using proper menstrual management techniques of clean material to collect and absorb menstrual blood as well as disposing these materials appropriately.

Social Economic Factors: This refers to the residence, occupation, age, education and religion of individuals. They are mostly determined by the position an individual hold on the social setting and their economic capability. In this study, these factors will tend to affect the ability of the adolescents to acquire appropriate material for management of menstruation.

Severity of disability: The extent to which a disability impairs independence of the individual. This will be categorized into three:

a. Severe - a girl is dependent on someone for mobility and feeding.

b. Moderate - can perform 1-2 tasks independently.

c. Not severe - girl can perform more tasks independently.

ABSTRACT

The beginning of menstruation is a significant occurrence to adolescent girls worldwide. Despite global sensitization on the importance of good Menstrual Hygiene Management (MHM), unhygienic practices and absence of an enabling environment persist. This can have adverse negative effects on adolescents, which are more profound for girls with disability due to their co-morbidities. The study aimed to assess MHM practices among adolescent girls with disabilities in selected primary schools in Wajir County. Specifically, it determined and investigated the influence of socio-demographic factors, attitudes, knowledge and institutional resources on MHM practices. A descriptive cross-sectional study design was employed, targeting all adolescent girls with disabilities from three purposively selected schools using census sampling. Data was collected using structured questionnaires and key informant interviews. Quantitative data were analyzed using descriptive statistics and chi-square tests to determine associations between variables. Statistically significant variables were further analyzed using logistic regression to identify predictors of MHM practice. The required logistical and ethical considerations were adhered to. Results revealed that only 11.9% of respondents practiced good MHM. The socio-demographic characteristics significantly associated with MHMP were severity of disability (p*=0.016), caregiver (p*=0.001), Number of family members (p*=0.029) and Occupation of bread winner (p*=0.001). Nature of attitude (p*=0.029) and level of knowledge (p*=0.037) were also significantly associated with MHMP. In terms of institutional resources, provision of menstrual materials (p*=0.004) and availability of water in school (p*=0.005) showed significant associations. Logistic regression results identified severity of disability (AOR=8.000, p=0.001), caregiver (AOR=4.000, p=0.015), and number of family members (AOR=0.429, p=0.025) as key predictors of MHM. Attitudinal predictors included discomfort in class (AOR=2.428, p=0.002), menstruation-related shame and shock (AOR=5.247, p=0.001), and nature of attitude (AOR=0.160, p=0.016). Knowledge-related predictors included understanding menstruation as a normal experience for girls (AOR=7.417, p=0.001), menstruation as an indicator of reproductive maturity (AOR=6.800, p=0.045), and level of knowledge (AOR=4.206, p=0.028). Among institutional factors, only availability of water in school (AOR=0.085, p=0.021) was a significant predictor. The study concludes that MHM practices are very low among girls with disabilities, influenced by personal, social, and institutional factors. It recommends that stakeholders provide free sanitary products and build sufficient school washrooms to ensure privacy. Community education should address menstruation-related myths and stigma to improve attitudes. MHM education should be scaled up among girls with disabilities, while government and NGOs in the WASH sector should prioritize sustainable water access and support services.

CHAPTER ONE: INTRODUCTION

1.1 Background to the Study

Menstruation is the recurrent peeling of the uterine lining that occurs monthly on girls and women of the reproductive age. The beginning of menstruation is a life changing and challenging occurrence to adolescent girls both in the developing and developed countries (ICRW, 2022). Proper hygiene during menstruation is important in ensuring that the menstrual flow is managed in an effective, comfortable and appropriate manner. However, despite increased recognition of the role played by proper menstrual hygiene on the wellbeing of adolescent girls, there is still limited knowledge on menstrual practices, availability of products and resources as well as social support from the society. According to Nagesh & Vohra (2020), Menstrual Hygiene Management is a critical aspect of women and adolescent girls' health and well-being, yet it remains a largely neglected issue, especially among women and girls with disabilities.

Specifically, in the school settings, Menstrual Hygiene Management is constrained due to having poor sanitation, limited education, lack of privacy and stigmatization arising from certain cultural practices and norms (Critchley et al., 2020). This is further affirmed by MOH (2019) which identified the lack of adequate guidance on MHM; poor quality and inadequate supply of water, and infrastructure in many schools as factors that leave girls with limited options for safe and proper personal hygiene.

School going girls are faced with challenges such as lack of proper, clean sanitation facilities and privacy to facilitate hygienic management of their periods, thus, very few girls complete their studies. A study conducted in Gambia on effects of menstrual health

and hygiene on school absenteeism and dropout revealed more than 27% of girls missed at least one school day in month due to menses (Shah et al., 2022).

Studies conducted have established certain challenges in menstruation hygiene management including inadequate infrastructure and facilities for changing, cleaning and disposal of absorbent material, inaccessibility to clean and efficient absorbent, privacy concerns and lack of cleaning materials (Patel et al., 2022). Additionally, other challenges such as inadequate social support, and stigma surrounding menstruation can lead to negative consequences for women's physical and mental health, sexuality, social status, and quality of life (Barrington et al., 2021a).

Girls and women with disabilities face even greater challenges in managing their menstruation hygienically and with dignity (UNICEF, 2019). Problems experienced by this population during menstruation tend to be different from the others hence requiring unique and specialized attention (Kashyap & Choudhari, 2023). Normal hygiene practices cannot be followed in a straightforward manner due to their co-morbidities. The adolescent girls have been established to portray certain characteristics such as agitation, hyperactivity, restlessness, and agitation during this period which poses a huge barrier in the adoption of better and hygienic menstrual management practices (Enoch et al., 2020).

Menstruation is a natural fact of life and a monthly occurrence for 1.8 billion girls and women of reproductive age. However, millions of menstruators globally are denied the right to manage their menstruation in a dignified, healthy way (UNICEF, 2019). It was further established by Wilbur et al. (2021) that menstruation challenges are a source of

shame for girls and women with disabilities, with consequences including social isolation and even forced sterilization. According to Shetty (2020), the issue of Menstrual Hygiene Management remains unexplored particularly amongst girls with disabilities and this study aimed at investigating this focusing on Wajir County that has a huge portion of adolescent girls who still remain underprivileged, due to among other factors, lack of resources and semi nomadic lifestyle of parents or caregivers.

1.2 Statement of the Problem

Despite various initiatives put in place to help girls manage menstruation, adolescent girls with disabilities remain under-represented in menstrual hygiene management (MHM) programs and interventions globally (WHO, 2018). There are existing challenges that adolescent girls face including socio-cultural limitations, poor sanitary and unhygienic practices during menstruation and absence of an enabling environment leading to adverse negative social and health effects (Kırbaş et al., 2022). These effects are more profound and compounded for girls with disability due to their comorbidities. The effects include increased absenteeism and school dropouts, reproductive and urinary tract infections, poor social interaction, societal exclusion and stigma (Shah et al., 2022).

Wajir, is one of the counties in northern Kenya region where more than half of girls are not enrolled in primary school, with fewer than 20 percent of boys and girls completing it. Only 12.2 percent of girls are enrolled in secondary schools against the national rate of 45.2 percent (MoEST, 2015). Poor menstrual hygiene has resulted in adverse negative effects that are more pronounced due to the cultural norms and living

conditions of the communities in these regions (Maalim, 2015). Furthermore, the semi-nomadic lifestyle of most of the population alienates the girls, especially those with disabilities of close care by their parents. As a result, they face severe hardships including lack of appropriate material during their menstrual period leading to high rates of school absenteeism due to embarrassment and poor menstrual health (Shah et al., 2022).

Despite growing global recognition of the need for inclusive Water, Sanitation and Hygiene (WASH) interventions, menstrual hygiene management remains a neglected area within disability-inclusive education frameworks, particularly in arid and marginalized regions like Wajir County. The intersection of gender, disability, and poverty exacerbates the vulnerability of adolescent girls with disabilities, who often lack access to disability-friendly WASH infrastructure, tailored menstrual products, and comprehensive sexuality education. Moreover, the absence of trained caregivers and teachers equipped to support their unique needs further entrenches systemic exclusion. Without targeted interventions, these girls continue to be left behind in national and county-level education and health agendas. This study, therefore, seeks to bridge the evidence gap by identifying context-specific barriers and enablers of MHM among this underserved population, with the aim of informing inclusive policy design and resource allocation that upholds the rights and dignity of all learners.

1.3 Justification

Without proper knowledge of menstrual management and availability of adequate resources, adolescent schoolgirls remain with limited capabilities and options during

menstruation. Although the area has received significant interest in the recent past, there still exist gaps in available literature describing the social and health repercussions of management of menstrual hygiene in adolescent girls, especially those with disabilities (Evans et al., 2022). Specifically, Wajir County is situated in a semi-arid region of Kenya where there is constant struggle over resources with there being limited access to basic services like free health care, clean water and education. The semi-nomadic lifestyle of the local population also compounds the situation for girls who may be left without proper care and guidance.

Due to cultural barriers and the enormous challenges facing the region, most adolescents lack the basic amenities during their menstruation (Fialkov et al., 2021)The county is also one of the counties in northern Kenya with high rates of school dropouts. Both boys and girls in these poor communities begin to drop out in grade 2, with the number declining steeply after grade 4. The rate of school dropout for girls is twice as that of the boys to leave, with poor Menstrual Hygiene Management playing a significant role. Only 12.2 percent of girls are enrolled in secondary schools against the national rate of 45.2 percent (MoEST, 2015).

1.4 Research Questions

1. What socio-demographic characteristics are associated with management of menstrual hygiene practices among adolescent girls with disabilities in selected schools in Wajir County?

2. What is the association between nature of attitude and management of hygiene practices among adolescent girls with disabilities in selected schools of Wajir County?
3. What is the association between the level of knowledge and Menstrual Hygiene Management practices among adolescent girls with disabilities in selected schools in Wajir County?
4. What is the availability of institutional resources associated with Menstrual Hygiene Management practices among adolescent girls with disabilities in selected schools in Wajir County?

1.5 Objective of the Study

1.5.1 Broad Objective

The broad objective of this study was to assess Menstrual Hygiene Management practices among adolescent girls with disabilities in selected schools in Wajir County, Kenya.

1.5.2 Specific Objectives

1. To investigate the socio-demographic characteristics associated with Menstrual Hygiene Management practice among adolescent girls with disabilities in selected schools in Wajir County.
2. To establish the association between attitude and Menstrual Hygiene Management practices among adolescent girls with disabilities in selected schools in Wajir County.

3. To determine the association between the level of knowledge and Menstrual Hygiene Management practices among adolescent girls with disabilities in selected schools in Wajir County.
4. To establish availability of institutional resources associated with Menstrual Hygiene Management practices among adolescent girls with disabilities in selected schools in Wajir County.

1.6 Delimitation and Limitation of the Study

There were several limitations which the researcher faced with during the study. To begin with, some participants were not fully willing to be part of the study. This may be due to menstruation being a very sensitive and private issue that most people find difficult to openly discuss. The researcher countered this by assuring confidentiality and anonymity throughout the study period without any identifiers. This included seeking relevant permission and offering assurance to the respondents of the academic intention of the study. The study was also limited only to adolescent girls with disability in Wajir County. This may not be an actual representation of all the adolescent girls in the region. The study countered this by ensuring that the sampling was well done to generate data that was comprehensive enough to allow generalization of the results.

1.7 Theoretical Framework

1.7.1 Liberal Feminism Theory

Liberal Feminism Theory was proposed by (Jaggar, 1983) in describing equality in different settings. The theory describes that the positions held by women tend to be unbalanced due to barriers faced by the women. According to the feminism perspective,

the available practices and procedures still fall short in promotion of gender equality (Grant, 2013; Policastro, 2015).The theory emphasizes that people should use their capabilities in prevention of discrimination against women (Policastro, 2015). However, the limitation of theory is that men and women tend to differ intrinsically which may not necessarily imply and inferiority between the genders.

Based on this theory all forms of biasness and prejudices ought to be averted so that boys and girls are provided with equal opportunities especially in the academic setting. The theory places much emphasis on removing any sort of barriers or challenges faced by girls. In this study, this relates to the adolescent girls with disabilities being given an enabling management that facilitates proper Menstrual Hygiene Management in dignity and privacy which will enable them to attend school as expected and help them realize their potential.

1.7.2 Health Belief Model

This Model was introduced to explain behaviour trends among individuals. Some of the major concepts within HBM are that perceived benefits and barriers act as enablers to certain health practices. The theory aims to provide better understanding on how and why individuals will choose to adopt and behave in certain ways while avoiding other ways (Becker, 1974). The balance between the perceived risk and efficacy will act as a great determinant in influencing the health outcomes. However, the theory fails to account for external variables such as cultural influence (Shafer et al., 2018).

The importance of theory to the study is that it purports the relevance of individuals' perspectives and intentions in health behaviours (Shafer et al., 2018). HBM believes

that the propensity of an individual's behavior change is greater if the perceived severity and perceived susceptibility to the threat is high or if the perceived benefits are greater, compared to perceived barriers. The importance of the theory is in describing the behaviours of the adolescent girls with disabilities during menstruation and the underlying factors.

1.7.3 Ecological Systems Theory

The Ecological Systems Theory by Bronfenbrenner (1977) posits that an individual's development is shaped by interconnected environmental systems, from immediate surroundings like family to broader societal structures like culture. The theory believes that several levels, such as personal, interpersonal, institutional, and communal, might affect how a person acts. This approach helped the study look into how a mix of personal attitudes, family support, and school infrastructure affects how girls with disabilities manage their menstrual hygiene. This framework looked at educational interventions like counselling and focused menstruation education as things that could enable good MHM practices.

Educational interventions within the Ecological Systems Theory framework focus on equipping adolescent girls with disabilities and their support networks with the knowledge, skills, and confidence needed for effective menstrual hygiene management. These interventions include targeted menstruation education tailored to the cognitive and physical abilities of the girls, peer-led awareness sessions to reduce stigma, and teacher training to foster a supportive school environment. Additionally, counseling services provide safe spaces for girls to express concerns, build self-esteem, and receive

personalized guidance. By embedding these efforts within school systems and family structures, the interventions aim to create an enabling environment that promotes dignity, inclusion, and health for all learners.

1.8 Conceptual Framework

In the study, the independent variables included socio- demographic characteristics, attitude towards menstruation, level of knowledge on menstrual hygiene management, and availability of institutional resources. The dependent variable was Menstrual Hygiene Management practices.

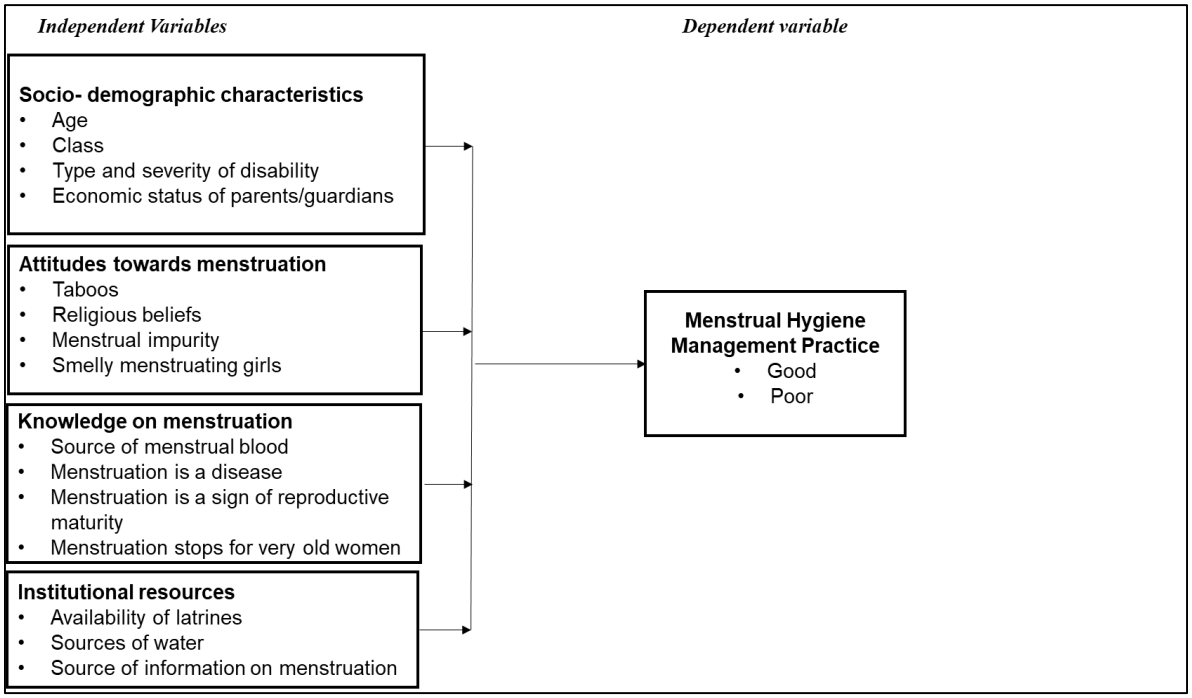

Figure 1.1: Conceptual Framework
Source: (Adapted and modified from the Liberal Feminism Model (Jaggar, 1983)).

1.9 Significance of the Study

The study will be of much benefit not only to adolescent girls with disability but also to other stakeholders in the ministries of education and health. The study will highlight Menstrual Hygiene Management and associated challenges. This would allow the necessary parties to devise solutions to the problems that adolescent girls with disabilities confront during their menstrual periods. The findings of this study will inform school administrators as well as the general public about the most effective methods of managing menstrual hygiene. Academically, the study will bridge the available knowledge gap by providing local evidence for future reference and provide an avenue for further studies.

CHAPTER TWO: LITERATURE REVIEW

2.1 Menstrual Hygiene Practices and Health of Adolescent Girls

Menstruation is an experience by adolescent girls which indicates their transition to adulthood (Barrington et al., 2021a). This affects how the adolescent girls behave, interact and express themselves during this period. Owing to the fact that adolescent girls make up approximately 23% of the global population (Casey et al., 2020), this is a serious phenomenon that ought to be fully paid attention to. Proper management of menstruation is therefore a crucial step in fostering proper transition towards womanhood by the adolescent girls (Sychareun et al., 2020).

According to a study by Mohammed & Larsen-Reindorf (2020a), many adolescents girls in African countries have poor knowledge regarding menstruation. According to Chandra-Mouli & Patel (2020), this is even worse among menstruating girls with disabilities who are faced with a greater challenge as they require private and specific sanitation facilities.

Increasing knowledge and awareness of proper practices during menstruation has the potential of alleviating most of these health-related problems (Nazarpour et al., 2020). However, affordability of menstrual products is an issue in many countries, especially for people from lower socio-economic groups (Kambala et al., 2020). Girls and women in resource poor settings are unable to obtain or purchase sanitary materials to manage their menstrual flow and so they rely on substandard products such as fabric, cotton wool, toilet paper, among others to absorb menstrual blood this poses a high risk of acquiring lower reproductive tract infections (Patel et al., 2022).

Some adolescent girls are not educated on when to change soiled sanitary material, some stay with one for up to a day, which creates a favorable environment for bacterial growth. Reproductive health and well-being of these teenagers, is therefore, a problem (Rahman et al., 2021).

2.2 Socio-demographic factors and Management of Menstrual Hygiene

Economic status affects the way adolescent girls manage menstruation. Individuals of high economic status are able to afford disposable pads and can acquire knowledge on how to maintain hygiene from the internet (Critchley et al., 2020). This enables them to have high levels of menstrual management. On the contrary, those of low income or poor use cloths and napkins which host bacteria that can result in infection. For them, sanitary pads are also expensive. Hennegan et al. (2019) affirmed that girls expressed frustration at the need to clean limited supplies of cloths or linens or at the experience of odour.

According to Rossouw & Ross (2021), unequal wealth-related access to sanitary pads is driven by socio-economic indicators including less education and residing in a rural as opposed to an urban environment. According to Kumbeni et al. (2020) there exists poor knowledge regarding Menstrual Hygiene Management and affordability of sanitary items among adolescent girls thus complicating its practice. Furthermore, access to the requisite sanitary items affects not only girls' Menstrual Hygiene Management but also their performance academically (Shah et al., 2022).

Age is also considered a factor that affects menstruation hygiene. This is affirmed by Mohammed & Larsen-Reindorf (2020b), who posited that poor menstrual hygiene and

lack of self-care are critical drivers of morbidity and other problems for girls in the age group of 10–19 years.

2.3 Attitude towards Menstruation

Some cultures consider women as impure during the menstrual period and assume menstruation as an unnatural thing. Other cultures perceive it a taboo to openly talk about matters concerning menstruation. In this case, adolescent girls lack knowledge on menstrual hygiene because their culture prevents them from discussing the subject (Ha & Alam, 2022). According to Asumah et al. (2022), the attitude of parents and society in discussing menstruation related issues are barriers to the right kind of information, especially in rural areas. Menstruation is thus considered to be a matter of embarrassment in most cultures, therefore with insufficient information, adolescents cannot understand menstruation.

Menstrual related perceptions, taboos and cultural beliefs make adolescents not to be proud of this transition. These taboos and social beliefs have led some women and girls to internalize this stigma, reporting that they feel dirty when menstruating and are ashamed of it (Preeti et al., 2022). Persons with disabilities are markedly more likely to be denied information on sexual and reproductive health (SRH), including menstrual health and hygiene compared to their counterparts without any impairments (Wilbur et al., 2019).

Menstrual blood mostly shocks adolescents, and some of them are unable to explain why or where it originates from. Adolescent girls with disabilities are, similarly, often not prepared psychologically for menarche. At school, these girls are every so often

deemed smelly and objectionable. According to (Asumah et al., 2022), misconceptions, poor attitude and limited proper guidance are risk factors of poor menstruation behavior. Nabwera et al. (2021) further determined that gender imbalance, negative cultural beliefs and inadequate social support are barriers to adolescent girls' ability to manage their periods appropriately.

2.4 Knowledge of Menstruation among Adolescent Girls

The adolescent girls should be knowledgeable concerning menstruation and equipped with the necessary resources to overcome any challenges arising during this period. Therefore, women have created various techniques to enable them to cope with menstruation (Barrington et al., 2021b). These techniques vary depending on individual preference, health status, cultural beliefs, economic and educational status. Managing menstruation entails being able to take care of menstrual flow by carrying out daily activities (Reavey et al., 2019). For teens with disabilities, menstruation is a difficult issue. They find it hard dealing with mood swings, hygiene problems, irregular cycles and dysmenorrhea. Due to their incapability which may necessitate assistance in daily activities; their parents/guardian need to be educated on menstrual care and hygiene.

However, reproductive health among adolescent girls is a topic which is often overlooked especially when related to menstrual management and hygiene (Kashyap & Choudhari, 2023)). Disabled girls are particularly unable to care for themselves during this period of the month, with some missing school for a particular number of days to deal with menstrual problems(WHO, 2018; Wilbur et al., 2021). According to Cummins et al. (2020), disabled girls missing school is common in areas affected by the lack of

facilities and resources. The girls have been reported to behave differently in terms of pain and heavy periods and increased incidences of premenstrual syndromes.

Girls with disabilities attain menarche at a similar age and go through a menstrual cycle as those without disabilities. However, knowledge during menstruation by parents and the girls remain relatively low. Lack of knowledge relating to menstrual management may result in poor management of menstruation, leading to high risks of reproductive and urinary tract infection. According to UNESCO (2014), girls are unprepared for menstruation and ill-equipped to manage their sexual and reproductive health. They lack basic knowledge like how to track their menstrual cycle. This can result in girls bleeding onto their uniform, unable to manage pain and subsequently missing school.

Furthermore, disabled adolescent girls' lack of adequate knowledge are still major issues especially for those from low-income families (Wilbur et al., 2021). Lack of puberty education and facilities can make girls experience menstruation as shameful and uncomfortable. Pubertal education is essential to both the teens and their guardians for better menstruation management. Similar studies which were undertaken by Tshomo et al. (2021) established poor attitude, education and insufficient facilities to be the largest barriers on hygienic menstrual management.

Some families prefer suppression of the menses, especially for low-income families. Suppression of menses is also evident in disabled girls who experience severe dysmenorrhea. Despite the above solutions, more training is required for both parents and health care providers which will, in turn, help the disabled girls with pubertal transitioning and dealing with reproductive health issues (Reavey et al., 2019).

2.5 Institutional resources

The schools also fail to provide required materials, space and cleaning facilities during facilities. Unavailability of such facilities makes the girls stay at home due to embarrassment (Mansoori et al., 2020). According to UNICEF (2019), inaccessible water, sanitation and hygiene (WASH) facilities add to the long list of barriers that prevent girls and women with disabilities from participating fully in social and economic life. Lack of disability-accessible WASH facilities is also a barrier for girls with disabilities to attend school.

Evidence from a study conducted by Mohammed et al. (2020b) shows that the inability of girls to effectively manage their menstrual period within the schools setting, promotes school absenteeism. Sivakami et al. (2019) also confirmed the existence of an association between school absenteeism and unfavorable school setting conditions. This is further corroborated by a study by Edet et al. (20(I in Nigeria, which found that 75% of the girls studied indicated that they missed school as a result of the absence of WASH facilities for menstrual hygiene management.

2.6 Summary and Research Gap

The adolescent period of a growing girl child brings about increased uncertainties due to both physiological and psychological changes. Specifically, the onset of menarche and the entire menstruation experience of a girl has been established to pose a huge challenge if not well managed. As such, the reviewed literature has shown that poor Menstrual Hygiene Management remains a difficulty to most girls especially in the developing countries. Therefore, improvement of menstruation knowledge and

increasing accessibility to sanitary materials will greatly reduce reproductive tract infections and gynecological complications. This will also reduce the possibility of stigmatization, unplanned pregnancies, and risks of future infections among adolescent girls. Though studies conducted have shown correlation between knowledge, practices and attitudes towards menstrual hygiene practices, there is still scarcity of studies undertaken locally, to examine the link to institutional resources, especially with regards to girls with disabilities which necessitated this study.

CHAPTER THREE: MATERIALS AND METHODS

3.1 Research Design

The study adopted a descriptive cross-sectional research approach. The study design has been selected due to the fact that it aims to describe actual events or situation, how they occurred and why they occurred (Lee et al., 2020). The research design also facilitates collection of data in a systematic manner and securing evidence on the underlying phenomenon hence the most appropriate for the study.

3.2 Study Variables

3.2.1 Independent Variables

These entailed socio-demographic characteristics such as age, income, class, type, severity of disability and years in school; attitude towards menstruation such as taboos, religious beliefs, menstrual purity and smelly menstrual girls; knowledge on menstruation such as source of menstrual blood, menstruation is a disease, menses is a sign of disease, menses is a sign of disease, menses is a sign of fertility and menses are common to every girl; and availability of institutional resource as availability of latrines, source of water, provision of enough materials, and source of information on menstruation.

3.2.2 Dependent Variable

The dependent variable was Menstrual Hygiene Management practice among adolescent girls including availability of menstrual hygiene products, use and safe disposal of such products. Those who would be having menstrual hygiene products, using them and safely disposing them were categorized as having good Menstrual

Hygiene Management practices while those who would miss either of them will be categorized as having poor Menstrual Hygiene Management practices.

3.3 Location of the Study

The study location of the study was Wajir County which boarders Somali on East, Marsabit County on West, Garissa County on South, Ethiopia on the North, Mandera on the North-East and Isiolo County on South-West as per Appendix I. According to the 2019 Kenya population and housing census, Wajir County has a total of 781,263 people and there are six sub-counties namely, Wajir North, Wajir South, Wajir East, Tarbaj, Wajir West and Eldas (KNBS, 2019). This study location was thus selected owing to the fact that it is among the leading regions in Kenya having the highest child poverty and deprivation rates at 83% hence the most appropriate for investigating the effects of Menstrual Hygiene Management among adolescent students (KNBS, 2017).

3.4 Study Population

The population of the study was all adolescent girls with disabilities from Wajir County, enrolled in three selected primary schools in Wajir County namely Wajir Girls' Primary School, Wajir Catholic Primary School and Wajir School for the Deaf which comprised of physical disability, hearing and visually impaired pupils. These schools were selected due to having the highest enrolment of pupils with disabilities in Wajir County. Therefore, this was most appropriate in investigating the underlying phenomenon pertaining to menstrual hygiene management practices in this region. As of 31st January 2020, the schools had a total of 1,843 pupils in total which formed the target population for the study.

3.4.1 Inclusion criteria

The inclusion criteria included all school going adolescent girls aged between 11-19 years with disability residing in Wajir County, whose parents or guardians were willing to give consent to participate in the study.

3.4.2 Exclusion criteria

This study did not include adolescent girls who were severely sick and those who could not get consent to participate in the study.

3.5 Sampling Technique and Sample Size

Wajir County was purposively sampled because it is among the counties in northern Kenya that have reported the highest rate of school absenteeism due to poor menstrual hygiene management. The schools were purposively selected because they are the only ones admitting the highest number of disabled girls in the region. The study adopted a census sampling technique so as to select all girls with disabilities in Wajir County, Kenya which is more appropriate when the variability within the population is high. A total of five (5) key informants were interviewed, included the County Education Officer (CEO), the Sub-County Education Officer (SCEO) and three (3) Head Teachers in the respective schools which enabled in triangulation of the research findings.

Table 3.1: Sampling Frame

School	Number of Adolescent Girls
Wajir Catholic Primary School	24
Wajir Deaf School	33
Wajir Girls' Primary School	74
Total	**131**

3.6 Data Collection Tools

This study used questionnaires to collect data quantitatively which were researcher administered. Key Informant Interviews on the other hand were used in obtaining qualitative data from school heads and education officers. This enabled the researcher obtain information that was not captured in the questionnaires.

3.7 Pretesting of Data Collection Tools

In this study, the research instrument was pre-tested with ten percent of adolescent girls randomly selected from Mandera special needs school in Mandera County. The neighboring county was selected due to the cultural similarity from the region. This was essential to ensure the validity, reliability, and appropriateness of the instrument for the target population. It helped refine the instrument and avoid potential issues, ultimately enhancing the quality of the study's data and findings.

3.7.1 Validity of research instruments

Validity refers to the degree to which the obtained results are related to the desired data. Validity was determined in this study through content validity. Content validity refers to how representative the items or tests are to measure the behavior studied (Cohen &

Swerdlik, 2018). Five subject matter experts reviewed and evaluated the tools and provided their objective feedback. Changes to the questionnaire were also made in the appropriate sections based on this feedback and in line with the study's objectives.

3.7.2 Reliability of research instruments

Reliability is a measure of the extent to which the research instrument can give consistent results after repeated tests. The data collection instrument was pre-tested with 10% of adolescent girls randomly selected from a similar set up in neighbouring Mandera County. In addition, test-retest reliability was conducted, with a score of above 0.9, indicating good reliability. Changes were made to the tool based on the test feedback.

3.8 Data Collection Techniques

The questionnaires were directly administered with the aid of five female research assistants, two of whom were proficient in Kenya Sign Language. This enabled the researcher to describe the purpose of the research and offer guidance to the respondents in filling the questionnaires. The process continued until the required number of questionnaires were collected. The interviews were conducted in the school premises with 20 girls being interviewed per day. So as to ensure efficient and smooth data collection, the research assistants were required to have at least a degree in public health. The respondents were informed verbally and in writing about the study. All interviews were conducted in quiet, private school rooms to ensure confidentiality, comfort, and ethical compliance. The interviews on the key informants were undertaken by the principal researcher and took about 30 minutes each.

3.9 Data Analysis

Data collected was sorted, classified, coded and analyzed with the aid of SPPS Version 22. Measures of central tendencies including means, frequencies and standard deviations were utilized in calculation of the summarized quantitative data. Cross tabulations were made to calculate the inferential statistics. Inferential analysis was performed to determine the relationship between variables at 95% confidence interval. All variables with p value of <0.05 were concluded as being significant. Variables that showed significant statistical association at chi-square were ran through logistic regression analysis to determine the predictors for MHM practice. Data collected was presented in tables, pie charts, percentages and graphs. Narrations were presented for qualitative data from the study respondents which was supplemented with quantitative data.

3.10 Logistical and Ethical Considerations

The study sought approval from Kenyatta University Graduate School, Ethical clearance from Kenyatta University Ethics Review Committee. The approval letter was then obtained from relevant research bodies such as National Commission for Science Technology and Innovation. (NACOSTI), County government offices as well as the management of the schools which were participating. The researcher also ensure that participants' autonomy was maintained. A written assent form was also sought from the school teachers, parent and guardian sign prior the study. Where the research participants needed any support, the research assistants worked with the researcher to address this or raise it with the school authorities.

CHAPTER FOUR: RESULTS

4.1 Introduction

This chapter constitutes the results of the data collected, analysed and interpreted by the researcher. The aim of the research was to examine Menstrual Hygiene Management practices among adolescent girls with disabilities. Specifically, the chapter presents the findings of the study as per the specific research objectives. The target sample population of the study included school going adolescent girls aged between 11-19 years with disability, residing in Wajir County. Out of a target of 131 respondents, 101 of them fully participated in the study translating to a response rate of 77 percent. This was primarily because data collection focused on those who were present in school at the time. Some girls had dropped out following the COVID-19-related school closures, reducing the number of available participants. This response rate was considered to be adequate to enable generalization of the study's findings as it is in line of Mugenda & Mugenda (2008)’s assertion that a response rate of above 75% to be excellent.

4.2 Socio-demographic Characteristics of the respondents

This section presents the distribution of socio-demographic characteristics of the respondents. Results on association between socio-demographic characteristics and Menstrual Hygiene Management practice are also presented.

4.2.1 Socio-demographic characteristics of the respondents

Table 4.1 presents results on socio-demographic characteristics of the respondents. On the age of the respondents, the study found out that 54 (53.0%) respondents were

between 13 to 16 years followed by 38 (38.0%) of those between 17 to 19 years. This shows that the respondents fell between 11 and 19 years as per the study target requirements. On the religion of the respondents, majority 96 (95.0%) of them were Muslims while the rest 5 (5.0%) were Christians. This finding was expected owing to the fact the geographic location where the study was conducted is Muslim dominated.

The study also assessed the class of the respondents. Results revealed that 59 (59.0%) of the respondents were from class six followed by 27 (27.0%) who were from class seven (27%). This population was deemed as appropriate as most of the girls have their menarche during this time. On the type of respondents' disability, 55 (54.0%) of them were physically disabled followed by 24 (24.0%) who were hearing impaired. Out of this, 38 (38.0%) were revealed to be moderately disabled followed by 36 (36.0%) who were not severely disabled. This implies that all the girls who took part in the study had disabilities, hence fell within the required inclusion criteria.

On the caregivers, 42 (42.0%) were found to be under the care of their guardians followed by 21 (20.0%) who were cared for by their mothers. This indicates that either an immediate family member or a custodian engaged by the school was the care giver of the respondents. It was also found that 55 (54.0%) of the respondents came from family of three (3) or less family members followed by 33 (33.0%) who were four (4) or five (5) members in their families, an indicative of small family sizes.

Further, on the occupation of the family bread winners, it was established that 43 (43.0%) were employed formally, followed by 34 (34.0%) who were not employed revealing that there could be financial challenges experienced. Regarding age of menarche, 54 (53%) of the girls experienced their first menstruation period between the

ages of 13 to 16 years followed by 24 (24.0%) who started their menarche at the ages between 17 to 19 years.

Table 4.1 Socio-demographic Characteristics of the Respondents

Variable	Response	Frequency (N=101)	Percent (100%)
Age	Below 12 years	9	9.0%
	13-16 years	54	53%
	17-19 years	38	38%
Religion	Christian	5	5.0%
	Muslim	96	95%
Class	Class 6	59	59%
	Class 7	27	27%
	Class 8	15	14%
Type of disability	Hearing impaired	24	24%
	Physical disability	55	54%
	Visually impaired	22	22%
Severity of disability	Not Severe	38	38%
	Moderately Severe	36	36%
	Severe	27	27%
Care giver	Aunt	11	11%
	Grandmother	12	12%
	Guardian	42	42%
	Mother	21	20%
	Sister	15	15%
Number of family members	Less than 3	55	54%
	4 or 5	33	33%
	More than 5	13	13%
Occupation of bread winner	Employed	43	43%
	Self-employed	24	24%
	Unemployed	34	34%
Age at menarche	Below 12 years	23	23%
	13-16 years	54	53%
	17-19 years	24	24%

4.2.2 Association between socio-demographic characteristics and Menstrual Hygiene Management practices

Table 4.2 presents results on association between socio-demographic factors and Menstrual Hygiene Management practice. Results revealed that 48 (53.9%) of those

who were aged between 13-16 years did not practice Menstrual Hygiene Management. There was no significant statistical association between age of the respondents and Menstrual Hygiene Management ($\chi 2$=1.798, P*=0.407). Majority 85 (95.5%) of those who were Muslims did not practice Menstrual Hygiene Management. Statistically, religion was not associated with MHM practice ($\chi 2$=0.331, P*=0.476).

Most of the respondents 10 (83.4%) who were in class 6 practiced MHM. However, there was no statistically significant association between class and MHM ($\chi 2$=3.562, P*=0.169). Regarding type of disability, 8 (66.7%) of those who were physically disabled practiced MHM. Type of disability was not statistically associated with MHM ($\chi 2$=4.443, P*=0.108). More than half 7 (58.3%) of those whose disability was not severe practice MHM. There was a significant statistical association between severity of disability and MHM practice ($\chi 2$=13.572, P*=0.016).

Higher proportion 7 (58.3%) of those whose caregivers were their mothers practiced menstrual hygiene management. There was a significant statistical association between caregiver and MHM practice ($\chi 2$=13.897, P*=0.001). Majority 9(75.0%) of those whose total number of family members were less than 3 had practiced menstrual hygiene management. Number of family members was significantly associated with MHM practice ($\chi 2$=7.061, P*=0.029). Most 8 (66.7%) of those respondents whose breadwinners were self-employed had practiced MHM. Statistically, occupation of breadwinner was associated with MHM practice ($\chi 2$=16.348, P*=0.001). Further results revealed that 50 (56.3%) of those whose age of menarche was between 13-16 did not

practice MHM. However, age of menarche was not associated with MHM practice ($\chi2$=5.200, P*=0.074).

Table 4.2 Association between socio-demographic characteristics and Menstrual Hygiene Management practices

Variable	Response	Menstrual Hygiene Management practices		Statistical significance
		Yes (N=12)	No (N=89)	$\chi2$=1.798
Age	Below 12 years	0.0%	9(10.1%)	Df=2
	13-16 years	6(50.0%)	48(53.9%)	
	17-19 years	6(50.0%)	32(36.0%)	P*=0.407
Religion	Christian	1(8.3%)	4(4.5%)	$\chi2$=0.331
	Muslim	11(91.7%)	85(95.5%)	Df=1
				P*=0.476
Class	Class 6	10(83.4%)	49(55.1%)	$\chi2$=3.562
	Class 7	1(8.3%)	26(29.2%)	Df=2
	Class 8	1(8.3%)	14(15.7%)	P*=0.169
Type of disability	Hearing impaired	0(0.0%)	24(27.0%)	$\chi2$=4.443
	Physical disability	8(66.7%)	47(52.8%)	Df=2
	Visually impaired	4(33.3%)	18(20.2%)	P*=0.108
Severity of disability	Not Severe	7(58.3%)	31(34.8%)	$\chi2$=13.572
	Moderately Severe	2(16.7%)	34(38.2%)	Df=2
	Severe	3(25.0%)	24(27.0%)	**P*=0.016**
Care giver	Aunt	1(8.3%)	10(11.2%)	$\chi2$=13.897
	Grandmother	0(0.0%)	12(13.5%)	Df=4
	Guardian	1(8.3%)	41(46.1%)	**P*=0.001**
	Mother	7(58.3%)	14(15.7%)	
	Sister	3(25.0%)	12(13.5%)	
Number of family members	Less than 3	9(75.0%)	46(51.7%)	$\chi2$=7.061
	4 or 5	0(0.0%)	33(37.1%)	Df=2
	More than 5	3(25.0%)	10(11.2%)	**P*=0.029**
Occupation of bread winner	Employed	0(0.0%)	43(48.3%)	$\chi2$=16.348
	Self-employed	8(66.7%)	16(18.0%)	Df=2
	Unemployed	4(33.3%)	30(33.7%)	**P*=0.001**
Age at menarche	Below 12 years	2(16.7%)	21(23.6%)	$\chi2$=5.200
	13-16 years	4(33.3%)	50(56.3%)	Df=2
	17-19 years	6(50.0%)	18(20.2%)	P*=0.074

P*=Fishers exact

4.3 Menstrual Hygiene Management Practices

This section consists of the distribution of components of MHM practice. These were

the ones used to measure MHM practice. The section also contains the results on proportion of girls in relation to MHM practice.

4.3.1 Components of Menstrual Hygiene Management Practice

Table 4.3 presents results on components used to determine MHM practice among the respondents. Results revealed that majority 76 (75.2%) of the respondents did not easily access sanitary products while the rest 25 (24.8%) accessed easily. Majority 86 (85.1%) did not have privacy of changing menstrual pads while the rest 15 (14.9%) had privacy. Regarding place of disposal of used menstrual sanitary products, results revealed that 64 (63.4%) disposed in a toilet while the rest 37 (36.6%) disposed outside a toilet.

Concerning the menstrual sanitary products used, results revealed that 68 (67.3%) used disposable sanitary pads followed by 14 (13.9%) who used reusable/washable pads. Further, it was noted that most 61 (60.4%) of the respondents changed their menstrual sanitary products only once a day followed by 38 (37.6%) who changed 2 or 3 times a day. Slightly more than half 53 (52.5%) of them revealed that water was not available while the rest 48 (47.5%) felt that water was available.

Table 4.3 Components of Menstrual Hygiene Management Practice

Variable	Response	Frequency (N=101)	Percent (100%)
Ease of access of disposable sanitary products	Easily accessible	25	24.8%
	Not easily accessible	76	75.2 %
Privacy of changing menstrual pads	Yes	15	14.9%
	No	86	85.1%
Disposal of used menstrual sanitary products	In a toilet	64	63.4%
	Outside a toilet	37	36.6%
Menstrual sanitary products used	Disposable sanitary pad	68	67.3%
	Reusable/washable pads	14	13.9%
	Cloth/towel	13	12.9%
	Toilet paper	4	4.0%
	Cotton wool	2	2.0%
Frequency of change of menstrual sanitary products	Once a day	61	60.4%
	2-3 times a day	38	37.6%
	4-5 times a day	2	2%
Availability of water	Yes	48	47.5%
	No	53	52.5%

4.3.2 Menstrual Hygiene Management Practices

Figure 4.1 shows the proportion of respondents who practiced good menstrual hygiene management. Menstrual Hygiene Management was measured by focusing on ease of access of disposable sanitary products, privacy of changing, disposal, products used, frequency of change and availability of water. Those who easily accessed, had privacy of changing, disposed in toilet, used appropriate products, changed at least twice a day and had water were categorized to have practiced. On the other hand, if any of the six components was missing then the respondent was categorized to have not practiced good menstrual hygiene. Results revealed that majority 89 (88.1%) of the respondents did not practice while the rest 12 (11.9%) practiced good MHM.

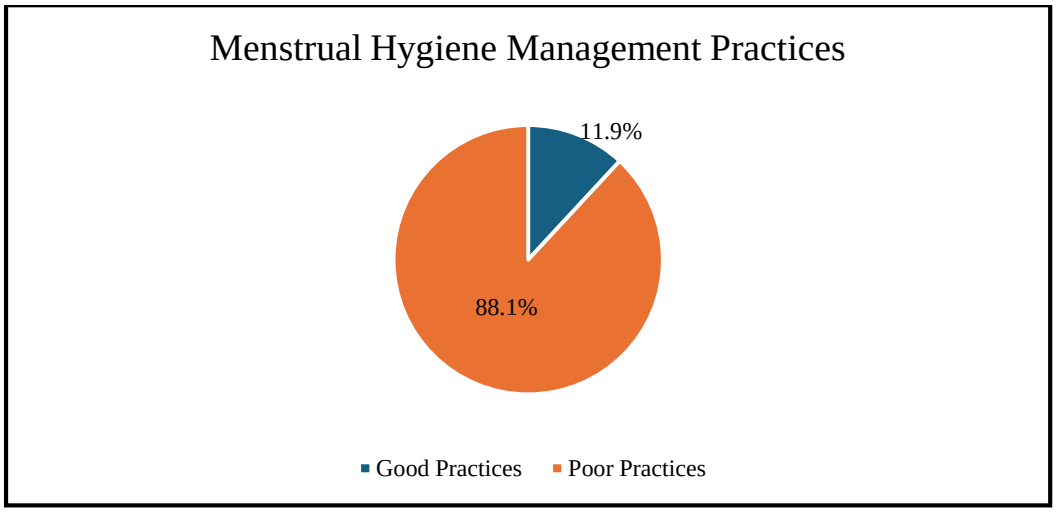

Figure 4.1: Menstrual Hygiene Management Practice

4.4 Attitude towards Menstruation and Menstrual Hygiene Management Practices

This section contains results on statements on attitude and nature of attitude towards MHM practice. There were seven (7) statements on a Likert scale of points 1-4 where '1' meant strongly disagree, '2' disagree, '3' agree and '4' meant strongly agree.

4.4.1 Distribution of responses on attitude towards menstruation and Menstrual Hygiene Management practices

Table 4.4 shows the distribution of responses of statements on attitude towards MHM practice among the respondents. There are also responses on the nature of attitude which was determined by focusing on all the seven statements. The seven statements had a minimum score of seven and maximum score of 28. To obtain the nature of attitude, the scores were further divided into two categories. Total scores of less than average (18) were dichotomized as positive attitude while those of ($\geq$ 19) were dichotomized as negative attitude.

Results on distribution of responses on attitude statements revealed that 72 (71.2%) strongly agreed followed by 15 (14.9%) who disagreed with the statement that menstruation was a taboo and should be kept a secret. The mean score was 3.11 and a standard deviation of 0.926 for the statement. Regarding statement on women always being impure during the menstrual period, 44 (43.6%) strongly agreed followed by 32 (31.7%) who agreed. The mean score and standard deviation were 2.73 and 1.057 respectively. Results also revealed that 45 (44.6%) strongly agreed and 27 (26.7%) disagreed that menstruation made girls smelly and objectionable. The statement had a mean of 3.06 and a standard deviation of 0.978.

More than half of the 58 (57.4%) of the girls strongly agreed and 23 (22.8%) agreed that menstruation made them uncomfortable in class. This statement had a mean of 3.10 and a standard deviation of 1.025. Most 67 (66.3%) of the respondents strongly agreed while 29 (28.7%) agreed that they would not attend religious functions when they were on their menses. The mean score and standard deviation were 2.72 and 0.950 respectively. On whether menstruation was a shameful experience related to shock among girls, 46 (45.5%) strongly agreed followed by 36 (35.6%) who agreed with the statement. The mean and standard deviation for the statement were 2.99 and 1.082 respectively.

Less than half 44 (43.6%) of the respondents strongly agreed and 37 (36.6%) agreed that Girls should refrain from interacting with others during the menstruation period. This statement had a mean of 3.02 and a standard deviation of 0.800. Further results from all the statements showed that the majority 92 (91.1%) of the respondents had a

negative attitude while the rest 9 (8.9%) had a positive attitude towards menstruation and MHM.

Table 4.4 Distribution of attitude towards menstruation and Menstrual Hygiene Management practices

Statement	Response	Frequency	Percent
Menstruation is a taboo and should be kept secret	Strongly disagree	0	0.0
	Disagree	15	14.9
	Agree	14	13.9
	Strongly agree	72	71.2
	Mean 3.11	Std deviation 0.926	
Women are always impure during the menstrual period.	Strongly disagree	9	8.9
	Disagree	16	15.8
	Agree	32	31.7
	Strongly agree	44	43.6
	Mean 2.73	Std dev 1.057	
Menstruation makes girls smelly and objectionable	Strongly disagree	6	5.9
	Disagree	27	26.7
	Agree	23	22.8
	Strongly agree	45	44.6
	Mean 3.06	Std dev 0.978	
Menstruation makes me uncomfortable in class	Strongly disagree	7	6.9
	Disagree	13	12.9
	Agree	23	22.8
	Strongly agree	58	57.4
	Mean 3.10	Std dev 1.025	
I would not attend religious functions when on my menses	Strongly disagree	3	3.0
	Disagree	2	2.0
	Agree	29	28.7
	Strongly agree	67	66.3
	Mean 2.72	Std dev 0.950	
Menstruation is a shameful experience related to shock among girls	Strongly disagree	8	7.9
	Disagree	11	10.9
	Agree	36	35.6
	Strongly agree	46	45.5
	Mean 2.99	Std dev 1.082	
Girls should refrain from interacting with others during the menstruation period	Strongly disagree	7	6.9
	Disagree	13	12.9
	Agree	37	36.6
	Strongly agree	44	43.6
	Mean 3.02	Std dev 0.800	
Nature of attitude	Positive	9	8.9
	Negative	92	91.1

4.4.2 Association between attitude and Menstrual Hygiene Management practices

Table 4.5 shows association between attitude and MHM practice. Results revealed that 64 (71.9%) of those who strongly agreed that menstruation is a taboo and should be kept secret had not practiced MHM. There was no significant statistical association between menstruation being a taboo and should be kept secret and practice of MHM (χ^2=0.148, P*=0.929). Regarding the statement women are always impure during the menstrual period, 31 (34.8%) of those who agreed had not practiced. There was a significant statistical association between perceiving women to being always impure during menstrual period and its practice (χ^2=15.922, P*=0.011).

Concerning menstruation making girls smelly and objectionable, 38 (42.7%) of the respondents who strongly agreed had not practiced MHM. There was no association between statement on menstruation making girls smelly and objectionable and practice (χ^2=1.628, P*=0.653). Majority 10 (83.3%) of those who disagreed with the statement that menstruation made them uncomfortable in class had practiced MHM. There was a significant statistical association between menstruation making one uncomfortable in class and practice of MHM (χ2=14.949, P*=0.017).

Majority 10 (83.3%) of those who strongly agreed with the statement that one would not attend religious functions when on her menses had practiced MHM. This did not have a significant statistical association with MHM (χ2=5.743, P*=0.125). Half 6 (50.0%) of the respondents who strongly disagreed with the statement that menstruation is a shameful experience related to shock among girls had practiced. There was a

significant statistical association between the statement and MHM practice ($\chi 2$=11.52, P*=0.013).

Majority 9 (75.1%) of those who strongly agreed that girls should refrain from interacting with others during the menstruation period had practiced MHM. However, there was no significant statistical association between believing that girls should refrain from interacting with others during menstruation period and practice of hygiene management ($\chi 2$=6.323, P*=0.097). Further results revealed that majority 88 (98.9%) of those who had negative attitude had not practiced MHM. There was a significant statistical association between nature of attitude and practice of MHM ($\chi 2$=11.009, P*=0.029).

Table 4.5 Association between attitude and Menstrual Hygiene Management practices

Variable	Response	Menstrual Hygiene Management practice		Statistical significance
		Yes(N=12)	No(N=89)	$\chi2$=0.148
Menstruation is a taboo and should be kept secret	Strongly disagree	0(0.0%)	0(0.0%)	Df=3
	Disagree	2(16.7%)	13(14.6%)	P*=0.929
	Agree	2(16.7%)	12(13.5%)	
	Strongly agree	8(66.7%)	64(71.9%)	
Women are always impure during the menstrual period.	Strongly disagree	7 (58.3%)	2(2.2%)	$\chi2$=15.922
	Disagree	1(8.3%)	15(16.9%)	Df=3
	Agree	1(8.3%)	31(34.8%)	**P*=0.011**
	Strongly agree	3(25.1%)	41(46.1%)	
Menstruation makes girls smelly and objectionable	Strongly disagree	0(0.0%)	6(6.7%)	$\chi2$=1.628
	Disagree	3(25.0%)	24(27.0%)	Df=3
	Agree	2(16.7%)	21(23.6%)	P*=0.653
	Strongly agree	7(58.3%)	38(42.7%)	
Menstruation makes me uncomfortable in class	Strongly disagree	1(8.3%)	6(6.7%)	$\chi2$=14.949
	Disagree	10(83.3%)	3(3.4%)	Df=3
	Agree	0(0.0%)	23(25.8%)	**P*=0.017**
	Strongly agree	1(8.3%)	57(64.0%)	
I would not attend religious functions when on my menses	Strongly disagree	0(0.0%)	3(3.4%)	$\chi2$=5.743
	Disagree	1(8.3%	1(1.1%)	Df=3
	Agree	1(8.3%)	28(31.5%)	P*=0.125
	Strongly agree	10(83.3%)	57(64.0%)	
Menstruation is a shameful experience related to shock among girls	Strongly disagree	6(50.0%)	2(2.2%)	$\chi2$=11.529
	Disagree	1(8.3%)	10(11.2%)	Df=3
	Agree	1(8.3%)	35(39.3%)	**P*=0.013**
	Strongly agree	3(25.0%)	43(48.2%)	
Girls should refrain from interacting with others during the menstruation period	Strongly disagree	1(8.3%)	6(6.7%)	$\chi2$=6.323
	Disagree	1(8.3%)	12(13.5%)	Df=3
	Agree	1(8.3%)	3(40.4%)	P*=0.097
	Strongly agree	9(75.1%)	35(39.3%)	
Nature of attitude	Positive	8(66.7%)	1(1.1%)	$\chi2$=11.009
	Negative	4(33.3%)	88(98.9%)	Df=1
				P*=0.029

P*=Fishers exact

4.5 Knowledge on Menstruation and Menstrual Hygiene Management Practices

This section presents results of the distribution of knowledge and level of knowledge on menstruation and MHM practice. Results on association between knowledge and MHM practice are also presented.

4.5.1 Distribution of responses on knowledge on menstruation and Menstrual Hygiene Management practices

Table 4.6 presents results on responses on knowledge areas and level of knowledge on menstruation and MHM practice. Results showed that most 62 (61.4%) of the respondents had incorrect knowledge while the rest 39 (38.6%) had correct knowledge on whether menstruation was a disease. On whether it was normal for every girl to experience menstruation, 60 (59.4%) had incorrect knowledge while 41 (40.6%) had correct knowledge.

More than half 58 (57.4%) had correct knowledge and 43 (42.6%) had incorrect knowledge on whether menstrual blood comes from the womb. Majority 64 (63.4%) had incorrect knowledge while the rest 37 (36.6%) had correct knowledge on whether menstrual blood contained dangerous substances. Majority 82 (81.2%) had incorrect knowledge while the rest 19 (18.8%) had correct knowledge on whether women stop menstruating when they grow very old.

Most 69 (68.3%) had correct knowledge while the rest 32 (31.7%) had incorrect knowledge on whether good hygiene prevented menstrual pain. Further results showed that 66 (65.3%) had correct knowledge while the rest 35 (34.7%) had incorrect knowledge on whether menstruation was an indication of fertility. Considering all the knowledge areas, level of knowledge was computed. Results revealed that 48 (47.5%) had moderate knowledge level followed by 44 (43.6%) had low knowledge level.

Table 4.6 Distribution on knowledge responses menstruation and Menstrual Hygiene Management Practices

Knowledge area	Response	Frequency	Percent
Menstruation is a disease.	Correct	39	38.6
	Incorrect	62	61.4
Its normal for every girl to experience menstruation	Correct	41	40.6
	Incorrect	60	59.4
Menstrual blood comes from the womb.	Correct	58	57.4
	Incorrect	43	42.6
Menstrual blood contains dangerous substances.	Correct	37	36.6
	Incorrect	64	63.4
Women stop menstruating when they grow very old.	Correct	19	18.8
	Incorrect	82	81.2
Good hygiene prevents menstrual pain.	Correct	69	68.3
	Incorrect	32	31.7
Menstruation is an indicator of reproductive maturity	Correct	66	65.3
	Incorrect	35	34.7
Level of knowledge	Low	44	43.6
	Moderate	48	47.5
	High	9	8.9

4.5.2 Association between knowledge and Menstrual Hygiene Management practices

Table 4.7 presents results on association between knowledge and MHM practice. Results revealed that majority 10 (83.3%) of those who had incorrect knowledge on whether menstruation was a disease had practiced MHM. There was no statistical association between menstruation being considered a disease and practice of MHM ($\chi 2=2.767$, P*=0.122). On whether it was normal for every girl to experience menstruation, most 9 (75.0%) of those who had correct knowledge had practiced MHM. There was a significant statistical association between knowledge on whether it was normal for every girl to experience menstruation and MHM practice ($\chi 2=6.685$, P*=0.013).

Majority 10 (83.3%) of those who had correct knowledge on whether menstrual blood comes from the womb had practice MHM. This was significantly associated with MHM practice ($\chi 2$=5.739, P*=0.042). Results further showed that 57(64.0%) of those who had incorrect knowledge on whether menstrual blood contains dangerous substances had not practice MHM. There was no statistical association between menstrual blood containing dangerous substances and MHM practice ($\chi 2$=0.149, P*=0.755).

Most 10 (83.3%) of the respondents who had incorrect knowledge on whether women stop menstruating when they grow very old had practiced MHM. There was no significant statistical association between having knowledge on whether women stop menstruation when they grow very old and MHM practice ($\chi 2$=0.041, P*=0.839). Most 11 (91.7%) of those who had correct knowledge on whether good hygiene prevents menstrual pain had practiced MHM. Knowledge on whether good hygiene prevents menstrual pain was significantly associated with MHM ($\chi 2$=15.430, P*=0.001).

Majority 11 (91.7%) of those who had correct knowledge on whether menstruation is an indicator of reproductive maturity had practiced MHM. There was a statistically significant association between menstruation being an indication of fertility and MHM practice ($\chi 2$=14.166, P*=0.008). Results on level of knowledge revealed that 8 (66.7%) of those who had moderate knowledge had practiced MHM. Level of knowledge was significantly associated with MHM practice ($\chi 2$=5.756, P*=0.037).

Table 4.7 Association between knowledge and Menstrual Hygiene Management practices

Variable	Response	Menstrual Hygiene Management practice		Statistical significance
		Yes(N=12)	No(N=89)	
Menstruation is a disease.	Correct	2(16.7%)	37(41.6%)	$\chi2$=2.767
	Incorrect	10(83.3%)	52(58.4%)	Df=1
				P*=0.122
Its normal for every girl to experience menstruation	Correct	9(75.0%)	32(36.0%)	$\chi2$=6.685
	Incorrect	3(25.0%)	57(64.0%)	Df=1
				P*=0.013
Menstrual blood comes from the womb.	Correct	10(83.3%)	48(53.9%)	$\chi2$=5.739
	Incorrect	2(16.7%)	41(46.1%)	Df=1
				P*=0.042
Menstrual blood contains dangerous substances.	Correct	5(41.7%)	32(36.0%)	$\chi2$=0.149
	Incorrect	7(58.3%)	57(64.0%)	Df=1
				P*=0.755
Women stop menstruating when they grow very old.	Correct	2(16.7%)	17(19.1%)	$\chi2$=0.041
	Incorrect	10(83.3%)	72(80.9%)	Df=1
				P*=0.839
Good hygiene prevents menstrual pain.	Correct	11(91.7%)	58(65.2%)	$\chi2$=15.430
	Incorrect	1(8.3%)	31(34.8%)	Df=1
				P*=0.001
Menstruation is an indicator of reproductive maturity	Correct	11(91.7%)	55(61.8%)	$\chi2$=14.166
	Incorrect	1(8.3%)	34(38.2%)	Df=1
				P*=0.008
Level of knowledge	Low	1(8.3%)	43(48.4%)	$\chi2$=5.756
	Moderate	8(66.7%)	40(44.9%)	Df=2
	High	3(25.0%)	6(6.7%)	**P*=0.037**

P*=Fishers exact

4.6 Availability of Institutional Resources and Menstrual Hygiene Management Practices

This section consists of the distribution of availability of institutional resources among the respondents. Results on association between availability of institutional resources and MHM practice are also presented.

4.6.1. Distribution of availability of institutional resources

Table 4.8 below presents results on distribution of availability of institutional resources. Results revealed that, most 62 (61.4%) received information from their elder sister/aunt or female relatives followed by 26 (11.9%) who got information from teachers. Majority, 75 (74.3%) of the respondents, reported that there were no available counseling services on menstruation while the rest 26 (25.7%) reported it was available.

Regarding provision of menstrual management materials and support, 80 (79.2%) indicated they were provided while the rest 21 (20.8%) weren't provided. Concerning adequacy of latrines in school, 68 (67.3%) indicated they were inadequate while the rest 33 (32.7%) indicated it was adequate. On availability of water in school, 54 (53.5%) felt it wasn't enough while the rest 47 (46.5%) felt it was enough.

Table 4.8 Distribution of availability of institutional resources

Knowledge area	Response	Frequency	Percent
Source of information	Elder sister/Aunt/Female relative	62	61.4
	Mother	11	10.9
	Other pupils	5	5.0
	Religious leaders	11	10.9
	Teachers	12	11.9
Availability of counselling services on menstruation	Yes	26	25.7
	No	75	74.3
Provision of menstrual management materials and support	Yes	21	20.8
	No	80	79.2
Adequate of latrines in the school	Adequate	33	32.7
	Inadequate	68	67.3
Availability of enough water in school	Yes	47	46.5
	No	54	53.5

4.6.2 Association between availability of institutional resources and Menstrual Hygiene Management practices

Table 4.9 presents results on association between availability of institutional resources and MHM practice. Majority 10 (83.3%) of those who received information from elder sister/aunt/female relative had practiced MHM. There was no significant statistical association between source of information and MHM practice ($\chi 2$=5.26, P*=0.262). Most 10 (83.3%) of those who indicated that counselling services on menstruation were available had practiced MHM. Statistically, availability of counselling services on menstruation was not associated with MHM practice (2=0.587, P*=0.726).

Most of those who were provided with MHM and support 11 (91.7%) had practiced MHM. There was a significant statistical association between provision of menstrual management materials & support and practice of MHM ($\chi 2$=11.283, P*=0.004). Most 8 (66.7%) of those respondents who indicated that latrines in the school were inadequate had practiced MHM. There was no significant statistical association between adequacy of latrines in the school and MHM practice ($\chi 2$=3.668, P*=0.097). Further results revealed that 9 (75.0%) of the respondents who reported that there was enough water had practiced MHM. There was a significant statistical association between availability of enough water in school and MHM practice ($\chi 2$=7.988, P*=0.005).

Table 4.9 Association between availability of institutional resources and Menstrual Hygiene Management practices

Variable	Response	Menstrual Hygiene Management practice		Statistical significance
		Yes(N=12)	No(N=89)	
Source of information	Elder sister/Aunt/Female relative	10(83.3%)	52(58.4%	$\chi2$=5.261 Df=4 P*=0.262
	Mother	0(0.0%)	11(12.4%)	
	Other pupils	0(0.0%)	5(5.6%)	
	Religious leaders	2(16.7%)	9(10.1%)	
	Teachers	0(0.0%)	12(13.5%)	
Availability of counselling services on menstruation	Yes	10(83.3%)	65(73.0%)	$\chi2$=0.587 Df=1 P*=0.726
	No	2(16.7%)	24(27.0%)	
Provision of menstrual management materials and support	Yes	11(91.7%)	69(77.5%)	$\chi2$=11.283 Df=1 **P*=0.004**
	No	1(8.3%)	20(22.5%)	
Adequate of latrines in the school	Adequate	4(33.3%)	29(32.6%)	$\chi2$=3.668 Df=1 P*=0.097
	Inadequate	8(66.7%)	60(67.4%)	
Availability of enough water in school	Yes	9(75.0%)	45(50.6%)	$\chi2$=7.988 Df=1 **P*=0.005**
	No	3(25.0%)	44(49.4%)	

P*=Fishers exact

4.7 Improvement in Menstrual Hygiene Management among adolescent girls with disabilities

The study also aimed at establishing the ways in which MHM can be improved among adolescent girls with disabilities. From the qualitative data obtained from the interviews, the interviewees affirmed that adolescent girls with disabilities often face additional challenges in managing their menstrual hygiene, which can have a significant impact on their physical and mental health, as well as their social and educational opportunities. They described that it is important to identify and address the barriers to MHM that adolescent girls with disabilities may face, in order to improve their overall health and well-being.

The interviewees noted that one of the key barriers to MHM among adolescent girls with disabilities is a lack of education and awareness. Particularly, an interviewee described,

> *"...Many girls with disabilities may not receive accurate and age-appropriate information about menstruation, MHM, and related issues such as reproductive health and sexuality. This lack of information can lead to confusion, embarrassment, and a lack of understanding about how to manage their menstrual hygiene effectively. Therefore, it is important to provide adolescent girls with disabilities with accurate and age-appropriate information and education on MHM, in order to empower them to manage their menstrual hygiene effectively…" Respondent 023*

Access to menstrual products is another challenge noted by the interviewees among adolescent girls with disabilities. An interviewee noted,

> *"...Many girls with disabilities may not have access to a range of affordable and appropriate menstrual products, such as pads, tampons, and menstrual cups. This lack of access can lead to difficulties in managing their menstrual hygiene and may also contribute to feelings of embarrassment and isolation. It is important to ensure that adolescent girls with disabilities have access to a range of menstrual products that are appropriate for their needs and that they can afford…" Respondent 011*

The interviewees also described another challenge facing adolescent girls with disabilities to be access to clean water and toilets. An interviewee complained that,

> *"...Many girls with disabilities may not have access to clean water and toilets, as well as facilities that are physically accessible and equipped with appropriate*

hygiene facilities, such as pads and soap. This lack of access can lead to difficulties in maintaining good hygiene during their periods and may also contribute to feelings of embarrassment and isolation. In this regard, it is important to ensure that adolescent girls with disabilities have access to clean water and toilets, as well as facilities that are physically accessible and equipped with appropriate hygiene facilities..." Respondent 002

Finally, support from caregivers and teachers was also recommended to be essential for effective MHM among adolescent girls with disabilities. It was noted that it is important to train caregivers and teachers to provide appropriate support and assistance to adolescent girls with disabilities during their periods, including helping them access menstrual products and providing them with appropriate information and education on MHM. By addressing these barriers, the respondents stated that this can empower adolescent girls with disabilities to manage their menstrual hygiene effectively and improve their overall health and well-being.

4.8 Predictors for Menstrual Hygiene Management

Table 4.10 shows the results on logistic regression analysis of factors associated with Menstrual Hygiene Management practice. All variables significantly associated with Menstrual Hygiene Management practice in the preliminary analysis (Chi square) were run through a logistic regression to determine the predictors for Menstrual Hygiene Management practice. From the results on demographic factors, those who had severe disabilities were more likely to have good MHM practices (AOR 2.250, 95% CI, 0.349-14.486, p=0.001). Those who had mothers as caregivers were more likely to practice

good MHM (AOR 4.000, 95% CI, .288-21.203, p=0.015). Those whose family members were 4 or 5 were less likely to practice good MHM (AOR 0.429, 95% CI, 0.214-0.920, p=0.025).

Concerning attitude towards MHM practice, those who disagreed with the statement that menstruation makes one me uncomfortable in class practiced (AOR 2.428, 95% CI, 0.240-0.700, p=0.002). Regarding the statement that menstruation is a shameful experience related to shock among girls, those who strongly agreed were likely to practice (AOR 5.247, 95% CI, 3.124-17.423, p=0.001). Those who had negative attitude were less likely to practice Menstrual Hygiene Management (AOR 0.160, 95% CI, 1.032-2.073, p=0.016).

Regarding knowledge on menstruation and MHM, results showed that those who had correct knowledge on whether it is normal for every girl to experience menstruation were more likely to practice (AOR 7.417, 95% CI, 1.462-2.762, p=0.001). Those who had correct knowledge on whether menstruation is an indicator of reproductive maturity were more likely to practice MHM (AOR 6.800, 95% CI, 0.840-55.049, p=0.045). It was also noted that those who had moderate knowledge level (AOR 4.306, 95% CI, 1.174-15.788, p=0.028).

Finally, on availability of institutional resources, results on logistic regression revealed that those who indicated that there was not enough water available in school were less likely to practice MHM (AOR 0.095, 95% CI, 0.011-0.686, p=0.021).

Table 4.10 Logistic regression of factors associated with Menstrual Hygiene Management practices

Independent variable	Category	B	S.E.	Wald	Sig.	AOR	95% C.I. for OR	
							Lower	Upper
Severity of disability	Not Severe	Reference						
	Moderately Severe	.811	.95	0.728	.393	2.250	.121	2.222
	Severe	2.079	.612	11.531	0.001*	8.000	.349	14.486
Caregiver	Aunt	Reference						
	Grandmother	.916	1.232	.554	.457	2.500	.224	27.940
	Guardian	.865	-.420	1.080	.245	2.375	.465	12.141
	Mother	1.386	.910	4.612	.015*	4.000	.288	21.203
	Sister	.061	.852	0.005	.943	1.063	.200	5.641
Number of family members	Less than 3							
	4 or 5	.427	.752	0.323	.025*	.429	.214	.920
	More than 5	-.452	.629	.721	.353	.432	.234	1.256
Occupation of bread winner	Employed	Reference						
	Self-employed	2.734	.517	17.029	.132	13.684	4.236	30.298
	Unemployed	1.528	.486	10.142	.091	4.745	1.928	13.588
Women are always impure during the menstrual period.	Strongly disagree	Reference						
	Disagree	-1.215	.327	5.461	.062	.204	.115	.832
	Agree	-.406	.453	.761	.123	.621	.242	1.266
	Strongly agree	-.743	.531	1.727	.172	.441	.134	1.723
Menstruation makes me uncomfortable in class	Strongly disagree	Reference						
	Disagree	0.823	.432	4.014	.002*	2.428	.240	.700
	Agree	-2.765	.740	1.242	.089	.083	.017	.276
	Strongly agree	-.226	.482	.423	.762	1.431	.600	2.431
Menstruation is a shameful experience related to shock among girls	Strongly disagree	Reference						
	Disagree	1.118	.513	5.231	.098	3.419	1.161	8.230
	Agree	-.221	.442	.313	.524	1.312	.512	3.422
	Strongly agree	-2.807	.523	12.072	.001*	5.247	3.124	17.423
Nature of attitude	Positive	Reference						
	Negative	-2.148	.294	.245	.016*	0.160	1.032	2.073
Its normal for every girl to experience menstruation	Incorrect	Reference						
	Correct	2.004	.308	42.455	.001*	7.417	1.462	2.762
Menstrual blood comes from the	Incorrect	Reference						
	Correct	1.452	.803	3.267	.071	4.271	.885	20.618

womb.								
Good hygiene prevents menstrual pain.	Incorrect	Reference						
	Correct	1.771	1.068	2.752	.097	5.879	.725	47.679
Menstruation is an indicator of reproductive maturity	Incorrect							
	Correct	1.917	1.067	3.228	.045*	6.800	.840	55.049
Level of knowledge	Low	Reference						
	Moderate	1.460	.663	4.851	.028*	4.306	1.174	15.788
	High	-.119	.909	.017	.896	.888	.434	19.441
Provision of menstrual management materials and support	Yes	Reference						
	No	-1.116	1.075	1.164	.281	.314	.038	2.579
Availability of enough water in school	Yes	Reference						
	No	-2.465	1.066	5.351	.021*	.085	.011	.686

CHAPTER FIVE: DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter gives a summary of the data collected and discussions with reference to the objectives of the study. The conclusion of the findings was related to research questions and recommendations derived from the conclusion and discussion of the findings.

5.2 Discussion of the Findings

5.2.1 Socio-demographic characteristics associated with Menstrual Hygiene Management.

The results revealed that a large fraction of those aged 13–16 did not practice MHM, implying that age alone may not be a determining factor in MHM behaviors among respondents. This is consistent with the findings of Das et al. (2020), who suggest that age does not greatly predict MHM behaviors among impaired girls, highlighting the importance of support systems and specialized educational interventions. Similarly, a study by Sommer et al. (2021) found that comprehensive menstruation education for all age groups can help reduce differences in MHM practices, implying that educational content and delivery are more important than age itself. However, the findings contradict those of Wilson et al. (2020) suggesting that younger girls, particularly those with disabilities, may face greater challenges due to a lack of experience and inadequate preparatory education, indicating a potential need for targeted support at a younger age.

In terms of religion, a considerable majority of Muslims did not engage in MHM, showing that religious membership alone may not be a determining factor in MHM

practices. This finding is consistent with Wilson et al. (2019), stating that cultural and religious beliefs may influence menstruation practices, they do not consistently predict real hygiene behaviors, particularly among girls with disabilities. Similarly, religion alone may not alter MHM behaviors, emphasizing the need of education and a supportive environment (Chandra-Mouli & Patel, 2019). According to Singh et al. (2021), in some contexts, religious beliefs and taboos surrounding menstruation can limit access to hygiene resources and practices, suggesting that the study's lack of statistical association may not fully capture the complex interplay between religion and MHM among girls with disabilities.

In terms of educational level, the majority of respondents in class 6 practiced MHM; nevertheless, there was no statistically significant relationship between class and MHM practices, indicating that educational level may not have a substantial impact on MHM practices. This finding is consistent with Kaur et al. (2020), who claim that while education can increase understanding of MHM, it does not necessarily translate into better practices, particularly among girls with impairments. Similarly, while education can influence hygiene practices, other factors such as family support and resource availability are important drivers for adolescents with impairments (Thakur, Bhar, et al., 2020). However, this contradicts a study conducted by Das et al. (2020), which emphasizes the necessity of personalized menstrual health education within school curricula for girls with impairments, implying a potential role for educational interventions.

Although the majority of physically disabled respondents used MHM, the type of disability was not substantially connected with MHM behaviors, implying that specific disability categories may not have a significant impact on MHM likelihood. This is consistent with Chandra-Mouli & Patel (2019), who claim that while different disabilities provide unique obstacles, the kind alone may not be a significant predictor of hygiene behaviors among girls with disabilities, emphasizing the significance of specialized support and education programs. Similarly, Wilson et al. (2020) argue that while distinct disabilities may present unique challenges, individual characteristics such as resource access are more influential in influencing practices. However, unlike the study conducted by Pal et al. (2022) which highlights that physical limitations may necessitate particular adaptations for appropriate MHM, the lack of statistical connection in this study may have overlooked unique needs.

In terms of disability severity, the majority of people with less severe disabilities used MHM. Severity was strongly connected with MHM practices, with those with less severe disabilities being more likely to manage MHM efficiently. This is consistent with Mason et al. (2021), who imply that females with severe disabilities face larger challenges, emphasizing the need for enhanced treatments. Similarly, Mahon & Tripathy (2019) note that severity influences MHM capacity and recommend individualized support. However, in contrast to the study conducted by Chandra-Mouli & Patel (2019), which suggests that while the severity of disability may pose challenges, it may not always be associated with hygiene practices, as individual factors

such as access to resources and education play a more significant role in shaping behaviors among girls with disabilities.

In terms of caregiver engagement, a higher proportion of respondents with mothers as caregivers performed MHM, with a strong relationship between maternal caregivers and MHM practices, emphasizing mothers' critical role as primary caregivers in providing excellent MHM practices for their children. This is consistent with Gupta et al. (2020a) argument that parental participation and support play a critical role in molding menstrual hygiene practices among girls with disabilities, emphasizing the necessity of a caring and supportive caregiver in fostering healthy behaviors. Similarly, Thakur, Pal, et al. (2020) argue that a girl's close relationship with her mother promotes open communication and access to hygiene resources, resulting in better menstrual hygiene practices among challenged teenagers. However, Wilson et al. (2020) found that while maternal caregivers may influence hygiene practices, other factors such as access to education and peer support also play important roles, implying that the association between caregiver and hygiene practices may not be solely due to maternal involvement.

In terms of family size, the majority of respondents from families with fewer than three people used menstrual hygiene management, indicating a strong link between the number of family members and cleanliness habits. This shows that lower family numbers may promote better MHM, presumably because of the increased resources and attention available per member. This is consistent with the findings of Das et al. (2020), which imply that smaller family numbers may signify higher socioeconomic position

and access to resources, allowing for better menstrual hygiene practices among girls with disabilities. Similarly, Gupta et al. (2020b) point out that smaller family units frequently generate deeper familial interactions, which may lead to increased support and instruction on menstrual hygiene management. Thakur, Aronsson, et al. (2020) suggest that family size may not be a significant predictor of hygiene behaviors among challenged teenagers, since factors such as caregiver participation and access to education play more crucial roles. Furthermore, Wilson et al. (2020) claim that, while family size may have an impact on hygiene practices, individual factors such as disability severity and access to resources are more important predictors of MHM among girls with disabilities.

In terms of the breadwinner's work, the majority of those with self-employed breadwinners practiced MHM, with a strong relationship between occupation and MHM practices, implying that financial stability and flexibility may contribute to improved MHM. This is consistent with the findings of Gupta et al. (2020c), who suggested that self-employed households have more resources and freedom. Similarly, Wilson et al. (2020) argue that self-employment provides financial security. In contrast, (Thakur, Bhar, et al., 2020) that occupation may not be significantly connected with practices among impaired adolescents, highlighting that other factors such as caregiver participation and access to education are more important. Furthermore, this finding contradicts the study of Das et al. (2020), which emphasizes that while the breadwinner's occupation may influence hygiene practices to some extent, individual

factors such as disability severity and access to resources are more important determinants of Menstrual Hygiene Management in girls with disabilities.

Finally, according to the age of menarche, a significant portion of respondents between the ages of 13 and 16 did not practice menstrual hygiene management, despite the fact that there was no statistically significant association between the age of menarche and hygiene practices, implying that the age at which girls begin menstruating has no significant influence on their Menstrual Hygiene Management practices. Wilson et al. (2020) believe that the age of menarche may indeed influence hygiene behaviors. Girls who have earlier menarche may encounter higher difficulty in managing menstruation due to their younger age and presumably lower levels of readiness. However, it is consistent with the findings of findings Mahon & Tripathy (2019), which intimate that the onset of menstruation may not intrinsically alter hygiene practices among challenged adolescents, since factors such as access to resources and education have a major role in molding behaviors. Similarly, Chandra-Mouli & Patel (2019) suggest that while the age of menarche may indicate the onset of menstruation, it does not always determine one's ability to manage it well, underlining the significance of comprehensive menstrual education programs for girls with disabilities.

5.2.2 Menstrual Hygiene Management practices

The findings on MHM practices, as measured by various components such as access to sanitary products, privacy, disposal, product appropriateness, frequency of change, and water availability, show a concerning trend among respondents, with the majority of them not practicing good MHM. This highlights the difficulties associated with

ensuring appropriate menstrual hygiene, particularly for girls with disabilities. This is consistent with the findings of Das et al. (2020), who highlight the various hurdles to MHM faced by girls with impairments, such as inadequate access to appropriate items and facilities. Furthermore, Wilson et al. (2020)emphasize the importance of comprehensive MHM programs that address the unique requirements of girls with disabilities, such as providing access to appropriate items and facilities. However, these findings may reflect broader issues with access to MHM resources and facilities in Kenya, as highlighted by studies such as Otieno et al. (2021) which identify systemic barriers to MHM, such as inadequate infrastructure and a scarcity of affordable menstrual products. Furthermore, Chandra-Mouli & Patel (2019) emphasize the need for tailoring MHM programs for girls with disabilities to meet unique needs such as accessibility and privacy.

5.2.3 Attitude towards Menstruation and Menstrual Hygiene Management Practices

Despite the fact that the majority of individuals who considered menstruation taboo chose not to perform MHM, this is consistent with Wilson et al. (2020),who found that stigma around menstruation can impede effective MHM among girls with disabilities but does not always predict hygienic habits. In contrast, the idea that women are always impure during menstruation had a substantial impact on MHM practices, supporting the findings of Das et al. (2020), who found that unfavorable perceptions of menstrual impurity might severely harm MHM adherence. Otieno et al. (2021) discovered that cultural taboos have a major impact on MHM in informal settlements, while specific

ideas concerning impurity were less studied. Furthermore, in Kenya, it was noted that persistent cultural norms around menstruation impurity contribute to poor MHM, particularly among vulnerable groups such as girls with disabilities (Kimani-Murage et al., 2020).

Concerning menstruation making girls dirty and disagreeable, the majority of those who strongly agreed did not practice MHM, indicating no significant relationship. This is in line with the findings of Wilson et al. (2020), who affirmed that stigma associated with menstruation odor does not always predict MHM behaviors among females with impairments. However, there was a significant association between menstrual discomfort in class and MHM practices, implying that practical problems in the school environment have a major impact on hygiene behaviors. Otieno et al. (2021) discovered that discomfort and humiliation in class due to menstruation are significant impediments to effective MHM in Kenyan informal communities. Furthermore, Kimani-Murage et al. (2020) stated that the school environment is crucial in MHM, as deficient facilities and supportive systems worsen problems. Furthermore, girls with impairments have unique obstacles in educational settings, where discomfort can significantly impair their MHM practices (Das et al., 2020).

Despite the fact that the majority of respondents who avoided religious functions during menstruation used MHM, this demonstrates that, while cultural restrictions may stimulate specific hygiene habits, they are not always predictive. Similarly, the impact of cultural customs around menstruation on hygienic behaviors among girls with disabilities varies greatly. Wilson et al. (2020).In contrast, the impression of

menstruation as a shameful experience had a major impact on MHM behaviors, with only half of those who strongly opposed implementing MHM. This agrees with Otieno et al. (2021), who discovered that shame and stigma greatly impede successful MHM in informal settlements. Kimani-Murage et al. (2020) have noted that psychological stress and shame associated with menstruation can contribute to poor MHM practices, especially among vulnerable groups such as disabled girls. Furthermore, the combined effect of handicap and menstruation stigma increases challenges in maintaining hygiene (Das et al., 2020).

Finally, the majority of those who believed girls should not interact during menstruation performed MHM; nevertheless, this opinion had no meaningful impact on MHM practices. This data is consistent with Wilson et al. (2020), who discovered that, whereas social isolation behaviors are widespread among females with impairments, they are not always associated with MHM practices. In contrast, a significant proportion of people with unfavorable attitudes did not engage in adequate MHM. This is in line with Otieno et al. (2021), who found that negative views and stigma around menstruation significantly inhibit MHM in Kenyan informal communities. Similarly, negative attitudes, typically based on cultural beliefs, significantly hinder MHM in teenage girls, including those with impairments (Kimani-Murage et al., 2020). Furthermore, girls with disabilities have more challenges as a result of social stigma and bad views around menstruation and disability, contributing to difficulties with hygiene (Das et al., 2020).

5.2.4 Association between level of knowledge on menstruation and Menstrual Hygiene Management practices

The results revealed that the majority of the respondents with false beliefs about menstruation being a sickness still performed MHM. This is in agreement with a study conducted by Otieno et al. (2021), which states that misconceptions regarding menstruation do not always connect with poor MHM practices among girls in informal settlements, suggesting that practical knowledge and resources might play a more essential role. In contrast, the vast majority of them possessed accurate knowledge on how to do MHM. This is consistent with Kimani-Murage et al. (2020), who stated that proper understanding of menstruation is critical for effective MHM, particularly among adolescents. Wilson et al. (2020), disagree noting that among girls with disabilities, even those with precise knowledge of menstruation encounter considerable difficulties due to physical challenges and inadequate support systems, preventing effective MHM practices regardless of their understanding.

According to the origin of menstrual blood, the majority of those with correct knowledge practiced MHM; this is consistent with the finding by Otieno et al. (2021), that accurate information about menstruation's biological aspects promotes better hygiene practices among girls in informal settlements. On the other hand, the majority of those who had inaccurate knowledge regarding menstrual blood containing harmful compounds did not perform MHM, implying that misconceptions may not be the most important factor in MHM behaviors. It has also been shown that among girls with disabilities, practical difficulties frequently surpass knowledge, demonstrating that

while knowing menstruation is critical, physical and systemic challenges can still limit effective MHM (Wilson et al., 2020).

Concerning women stopping menstruation, the majority of respondents with incorrect knowledge about women stopping menstruation when they grow old continued to practice MHM, which is consistent with Otieno et al. (2021), who discovered that specific misconceptions about menstruation do not necessarily impede MHM practices among girls in informal settlements, implying that other factors such as access to hygiene products and education play a more important role. On the other hand, the majority of those who understand that proper cleanliness prevents menstrual pain practice MHM. This is consistent with Kimani-Murage et al. (2020), who stated that a proper understanding of the benefits of excellent menstrual hygiene can greatly enhance MHM behaviors, particularly among adolescent girls. However, even with precise understanding, girls with impairments may face practical hurdles such as inadequate access to appropriate facilities and support (Wilson et al., 2020).

Concerning menstruation as an indicator of fertility, the majority of those with correct knowledge practiced MHM, which is consistent with Otieno et al. (2021), who reported that comprehensive menstrual education positively influences hygiene practices among girls in informal settlements, highlighting the importance of accurate information in empowering girls to manage menstruation effectively. Furthermore, the amount of education had a substantial impact on MHM behaviors, with the majority of individuals with moderate knowledge practicing appropriate hygiene. However, Wilson et al. (2020) discovered that even when girls with disabilities have basic knowledge about

menstruation, they frequently face additional challenges, such as physical accessibility and a lack of appropriate facilities, that limit optimal MHM practices.

5.2.5 Association between availability of institutional resources and Menstrual Hygiene Management practice

In terms of information sources, the majority of respondents reported receiving menstrual information from elder sisters, aunts, or female relatives. This is consistent with Otieno et al. (2021), who found that while family members are important sources of menstrual information, the quality and depth of the information vary, resulting in inconsistent MHM practices among girls in informal settlements. This shows that informal avenues of menstruation education, while common, may not always be adequate for supporting comprehensive MHM practices. Wilson et al. (2020) found that for females with disabilities, structured and formal education sources are more helpful in guaranteeing correct MHM practices. They pointed out that girls with disabilities frequently experience additional problems and require more personalized information and support than what is generally offered by families. Formal education programs can provide precise and consistent knowledge while addressing specific requirements that informal sources may neglect.

Regarding menstrual counseling services, the majority of respondents who had access to them practiced MHM, which is consistent with the findings of Otieno et al. (2021), who discovered that, while counseling services are beneficial, they are insufficient to ensure proper MHM among girls in informal settlements. In contrast, Wilson et al. (2020)posited that the availability and quality of counseling services are crucial for girls

with disabilities. They emphasize that these girls have unique difficulties that typical therapy services may not adequately address. This demonstrates that, while the mass availability of counseling services may not have a statistical impact, personalized and high-quality therapy is crucial for fulfilling the specific needs of girls with disabilities, resulting in improved MHM behaviors.

Regarding the provision of menstrual management materials and support, the majority of respondents who received such support practiced MHM; this finding is consistent with Kimani-Murage et al. (2020), who emphasized the importance of access to menstrual hygiene materials and support in promoting MHM practices among adolescent girls in Kenya. They stated that a lack of access to suitable menstrual products frequently prevents girls from effectively controlling their menstruation, resulting in hygienic difficulties. Wilson et al. (2020)stated that providing menstruation management tools and support to girls with disabilities does not ensure effective MHM practices. They stated that these girls face particular hurdles, such as physical restrictions and stigma, necessitating specific help beyond the distribution of resources.

In terms of adequate latrines in school, the majority of respondents who perceived inadequate latrines in school practiced MHM, which is consistent with Otieno et al. (2021), who observed that despite challenges with school infrastructure, including inadequate latrines, girls in informal settlements frequently find effective ways to manage their menstruation. However, they may encounter extra challenges, such as longer waiting times or a lack of privacy, which might have an impact on their MHM habits. In contrast, the study conducted by Wilson et al. (2020)stated that inadequate

latrines in schools have a substantial impact on MHM practices among disabled girls. They emphasized that these girls frequently encounter special issues relating to accessibility and safety in school restrooms, which can dissuade them from managing their menstruation effectively.

In terms of the availability of enough water in school, the majority of respondents reported having enough water to practice MHM; this finding is consistent with Otieno et al. (2021), who stressed the importance of water availability in promoting MHM practices among adolescent females. They stated that having access to water is critical for maintaining personal hygiene during menstruation, which includes washing menstrual products and cleansing oneself. Furthermore, Kimani-Murage et al. (2020) discovered that a lack of water availability considerably impedes MHM practices, especially in resource-constrained contexts such as informal settlements.

5.3 Conclusions

This study concludes that menstrual hygiene management (MHM) practices among adolescent girls with disabilities in selected primary schools in Wajir County remain very low. The most significant barriers identified were lack of privacy for changing menstrual materials and limited access to disposable sanitary pads, both of which directly hindered effective MHM.

Socio-demographic factors were found to be strongly associated with MHM practices among adolescent girls with disabilities. Girls with severe disabilities experienced disproportionately greater challenges, being eight times more likely to report poor MHM outcomes (AOR = 8.000, p = 0.001) compared to their counterparts with

moderate or non-severe disabilities. Conversely, caregiver involvement particularly from mothers was associated with a fourfold increase in the likelihood of good MHM practices (AOR = 4.000, p = 0.015). Family size and the severity of disability also significantly influenced outcomes (AOR = 0.429, p = 0.025).

Attitudinal factors, including menstruation-related shame and classroom discomfort, were found to negatively impact MHM. Girls who associated menstruation with shock (AOR = 5.247, p = 0.001) or discomfort (AOR = 2.428, p = 0.002) were significantly less likely to practice proper hygiene, highlighting the urgent need for psychosocial support and stigma-reduction initiatives within school settings.

Knowledge-related variables played a decisive role in shaping MHM practices. Higher levels of menstrual knowledge (AOR = 4.206, p = 0.028), understanding menstruation as a normal biological function (AOR = 7.417, p = 0.001), and recognizing it as a sign of reproductive maturity (AOR = 6.800, p = 0.045) were all strongly associated with improved hygiene behaviors. These findings underscore the transformative potential of targeted, disability-sensitive menstrual education.

Finally, while institutional factors such as school infrastructure were considered, only the availability of adequate water supply significantly predicted MHM practices (AOR = 0.085, p = 0.021). This finding reinforces the foundational importance of water access in supporting safe and dignified menstrual hygiene.

In summary, the study highlights the multifaceted nature of MHM challenges for girls with disabilities and calls for integrated, inclusive interventions that address personal, social, educational, and infrastructural dimensions.

5.4 Recommendations

5.4.1 Recommendation for Practice

At practice level, the study recommends that:

1. Schools implement inclusive awareness campaigns targeting girls with disabilities, their caregivers, and the broader community to demystify menstruation and reduce stigma. These campaigns should promote menstruation as a natural biological process and provide practical guidance on menstrual health and hygiene, including safe disposal methods.
2. Schools should also integrate weekly sessions on menstrual hygiene, facilitated by trained educators or health professionals, and ensure that menstrual health is discussed during parent meetings and school events.
3. Additionally, training peer educators and enhancing the capacity of school housemothers can foster peer-led learning and support.
4. Improving WASH infrastructure is also critical. Schools should collaborate with stakeholders to ensure facilities are accessible, private, and culturally appropriate, with reliable water supply and safe disposal systems.

5.4.2 Recommendation for Policy

At the policy level, the study recommends that:

1. The Ministry of Health to lead inclusive menstrual health campaigns through the school health program, ensuring that girls with disabilities and their caregivers receive accurate, accessible information.
2. The Ministry of Education should integrate comprehensive, disability-inclusive menstrual hygiene education into teacher training curricula and school programs.
3. Cross-sector collaboration between the Ministries of Health and Education is essential to design and enforce inclusive WASH infrastructure policies that meet the needs of girls with disabilities.
4. Government and non-governmental actors should invest in the provision of menstrual hygiene products and psychosocial support services in schools. Regular monitoring and evaluation of these interventions are necessary to ensure their effectiveness and responsiveness to the needs of adolescent girls with disabilities.

5.4.3 Recommendations for Further Research

1. Given the study's focus on selected schools in Wajir County, further research is recommended in other regions of Kenya to allow for comparative analysis and broader generalization.
2. Longitudinal studies are also needed to assess changes in MHM practices over time and the long-term impact of interventions.

3. Future research should explore strategies to strengthen the roles of mothers and teachers in MHM education and investigate effective ways to engage boys and men in supporting menstrual health and reducing stigma.

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APPENDICES

Appendix 1: Consent form

Introduction

I am **Abdiwahit Ahmed Jama**, undertaking my post graduate degree in Kenyatta University in the school of Public Health. The research study title is ***"MENSTRUAL HYGIENE MANAGEMENT AMONG ADOLESCENT GIRLS WITH DISABILITIES IN SELECTED PRIMARY SCHOOLS IN WAJIR COUNTY, KENYA"*** I wish to request authorization from you to partake in this study. I'm humbly requesting patience and cooperation from you so that I will be able to get the expected information.

Study purpose

The review targets evaluating feminine cleanliness the executives among juvenile young ladies with inabilities in Wajir County, Kenya. The review results will help reinforce and uphold in addressing the wellbeing needs of juvenile Menstrual Hygiene Management among this cohort.

Study procedure

Cooperation in the study includes addressing questions which you will be asked on issues related to Menstrual Hygiene Management the executives among disabled girls in Wajir County. You are expected to fill your responses in the spaces gave. At some random time, you are allowed to clarify pressing issues and look for more explanation on all perspectives connected with this study.

Voluntary participation

You have the right to deny partaking in this study as it is absolutely voluntary. You should decline to answer a few questions that you see as aggravating and against your cultural beliefs. You may likewise select to pull out from the interview at a specific given time with next to no critical consequences.

Discomforts and risks

This interview meeting is in-depth and you could get tired in motion. You might understand that various inquiries incite your social and strict convictions consequently you might decide not to reply. This exercise might slow down your time while doing your day-to-day exercises but will be happy assuming you take as much time as is needed to take part in this review.

Benefits and rewards

Your participation in the study will furnish us with the important data guaranteeing advancement and execution of techniques pointed toward further developing on menstrual hygiene and management in adolescents in Wajir County, Kenya. This will further develop admittance to and utilization of feminine administration works on supporting its take-up. No financial benefits will be given to members.

Confidentiality

The interview will be dispersed to adolescents' girls with disabilities with in Wajir County. The data you give will be kept private and confidential. Your personal details won't be revealed to whenever and the data gave will be used to accomplish the study only.

Contact information

In case of any queries concerning this study, you may opt to contact my research supervisors.

Dr Redempta Mutisya

Email……. Tel No……

Dr Christine Njuguna

Email……. Tel **……**

No…….

Kenyatta University Ethics and Review Committee (KUERC)

The Kenyatta University Ethical Review Committee Secretariat on

chairman.kuerc@ku.ac.ke, secretary.kuerc@ku.ac.ke, ercku2008@gmail.com.

Participant's statement

The information concerning my involvement in this study has been clarified to me. An opportunity has been accorded to me to seek further clarification and my concerns addressed adequately. Taking part in this research is optional and voluntary. To my understanding, this information shall be kept private and confidential. I can also choose to withdraw from participating in this study at any given time.

Sign…… Date……

Principal Investigator's statement

I, the undersigned, have explained the research technique to the participant in a language that he or she understands best, as well as the risks and rewards that will be involved.

Name: ABDIWAHIT AHMED JAMA

Email address: abdiwahit.jama@yahoo.com

Tel No: +254722761046

Signature…… Date…….....

Appendix 2: Assent form

Title: Menstrual Hygiene Management among adolescent girls with disabilities in Wajir County, Kenya.

Investigator: Abdiwahit Ahmed Jama

In Wajir County, Kenya, I am conducting research on Menstrual Hygiene Management among adolescent girls with disabilities in three selected schools. The Kenyatta University Review Committee has approved this research. This study aims to learn more about Menstrual Hygiene Management among disabled adolescent girls in Kenya's Wajir County. A few young women under the age of 18 will be recruited to take part in this study. Answering questions about Menstrual Hygiene Management in a research questionnaire is required as part of your participation in this study. You must tick/fill in the spaces supplied with your responses and return the questionnaires. You have the right to ask for more information at any time. This interview schedule is extensive, and you may become tired of it halfway through. Some questions may cause you to doubt your cultural and religious beliefs, so you may choose not to respond. This research will not benefit you in any way. Your involvement in the study, on the other hand, will give us with the data we need to better menstrual hygiene management.

A report will be written after this study is completed, but it will not include your identity or the fact that you participated in it. You are not required to participate in this study if you do not choose to. It's also fine if you wish to stop once we've started. Your parents know about the study too. If you decide to participate in this study please sign in the spaces provided below. _____ _____

Signature **Date**

Appendix 3: Questionnaire

The purpose of this study is to determine Menstrual Hygiene Management among adolescent girls with disabilities in selected schools in Wajir County. Your voluntary and honest participation in completing the provided questionnaire will highly be appreciated. This study is purely academic and thus responses given will be strictly confidential and used only for research purposes. Kindly tick or write in the spaces provided.

Section A: Socio-Demographic Factors

1. Please indicate your age in years ……
2. What is your religious affiliation?
    1. Islam [ ] 2. Christianity [ ] 3. Others [ ]
3. Which class are you currently in?.....
4. Please indicate the type of disability affecting you…….
5. What is the severity of your disability?
    1. Severe [ ] 2. Moderate [ ] 3. Not Severe [ ]
6. Who takes care of you at home as a girl?
    1. Mother [ ] 2. Grandmother [ ] 3. Aunt [ ] 4. Sister [ ] 5. Guardian [ ]
7. How many family members are in your household?
    1. 3 or less [ ] 2. 4–5 [ ] 3. More than 5 [ ]
8. Please indicate the occupation of your family's breadwinner
    1. Employed [ ] 2. Self-employed [ ] 3. Unemployed [ ]

Section B: Menstrual Hygiene Management Practice

9. At what age did you experience your first menarche? ……

10. Answer the following questions on Menstrual Hygiene Management practices *(Please tick an answer that best describes your situation)*

Menstrual hygiene management practice	
What is the easy of access of the disposable sanitary pads?	1. Easily accessible [ ] 2. Not easily accessible [ ]
Are the places where you change menstrual absorbents private?	1. Yes [ ] 2. No [ ]
Where do you dispose used menstrual sanitary pads/products?	1. In a toilet [ ] 2. Outside a toilet [ ]
What do you normally use during your period?	1. Tampon [ ] 2. Disposable sanitary pad [ ] 3. Menstrual cup [ ] 4. Reusable/washable Pads [ ] 5. Cloth/towel [ ] 6. Toilet paper [ ] 7. Cotton wool [ ] 8. Plant leaf pads [ ] 9. Others (specify).....

11. How frequently do you change pad/cloths per day? .....

12. Is there availability of water in the school compound? What type of washing do you practice during menstruation

    1. Yes [ ] 2. No [ ]

Section C: Attitude towards Menstruation

13. Menstruation is a taboo and should be kept secret.

    1. Strongly Disagree [ ] 2. Disagree [ ] 3. Agree [ ] 4. Strongly Agree [ ]

14. Women are always impure during the menstrual period.

    1. Strongly Disagree [ ] 2. Disagree [ ] 3. Agree [ ] 4. Strongly Agree [ ]

15. Menstruation makes girls smelly and objectionable

    1. Strongly Disagree [ ] 2. Disagree [ ] 3. Agree [ ] 4. Strongly Agree [ ]

16. Menstruation makes me uncomfortable in class

    1. Strongly Disagree [ ] 2. Disagree [ ] 3. Agree [ ] 4. Strongly Agree [ ]

17. I would not attend religious functions when on my menses

    1. Strongly Disagree [ ] 2. Disagree [ ] 3. Agree [ ] 4. Strongly Agree [ ]

18. Menstruation is a shameful experience related to shock among girls

    1. Strongly Disagree [ ] 2. Disagree [ ] 3. Agree [ ] 4. Strongly Agree [ ]

19. Girls should refrain from interacting with others during the menstruation period

    1. Strongly Disagree [ ] 2. Disagree [ ] 3. Agree [ ] 4. Strongly Agree [ ]

Section D: Knowledge on Menstruation

Please indicate whether you think the statements below are true or false. (Please tick to indicate answer)

20. Menstruation is a disease.

    True [ ] False [ ]

21. Its normal for every girl to experience menstruation

    True [ ] False [ ]

22. Menstrual blood comes from the womb.

    True [ ] False [ ]

23. Menstrual blood contains dangerous substances.

    True [ ] False [ ]

24. Women stop menstruating when they grow very old.

    True [ ] False [ ]

25. Good hygiene prevents menstrual pain.

    True [ ] False [ ]

26. Menstruation is an indicator of reproductive maturity.

    True [ ] False [ ]

Section E: Institutional factors

27. What was the source of information on menstruation?

    1. Mother [ ] 2. Elder sister/aunt/female relative [ ]
    3. Teacher [ ] 4. Other Pupils []
    5. Religious Leader [ ] 5. Others (specify)……

28. Do you have Counselling arrangement for girls on menstrual management in your school?

    1. Yes [ ] 2. No [ ]

29. Does the school provide enough materials and support towards the girls in the menstruation period?

    1. Yes [ ] 2. No [ ]

30. Please indicate on the availability of latrines in your school

    1. Adequate Latrines [ ] 2. Inadequate Latrines [ ]

31. Do you have enough water sources at school?

    1. Yes [ ] 2. No [ ]

    In the house [ ] In the yard [ ] At relatives/neighbor house [ ] At a public location [ ]

32. What can be done to ensure improvement in Menstrual Hygiene Management among adolescent girls among adolescent girls with disabilities?

.....
.....
.....
.....

END

THANK YOU FOR YOUR PARTICIPATION

Appendix 4: Key Informant Interviews guide

You are asked to take part in a Key Informant Interview for a study on the "social and health consequences of menstruation hygiene in adolescent females with disabilities" in Wajir County's selected schools. Be truthful, open, and engaged in your responses to the questions that have been provided for your consideration. The usage of a Key Informant Interviews Guide will guide participation. For your Key Informant Interview, there will be an observer, a moderator, and a note taker. Tape recorders will be used to record and save the information as it is provided. All information received will be kept strictly confidential and used solely for the objectives of the study.

Questions

1. What is your understanding pertaining to knowledge of menstruation management practices among adolescent girls with disabilities in selected schools in Wajir County?

2. Which factors influence Menstrual Hygiene Management in adolescent girls with disabilities among selected schools in Wajir County?

3. Can you provide insights into the socio-demographic characteristics of adolescent girls with disabilities in Wajir County that may influence their Menstrual Hygiene Management practices?

4. From your observations, do you think the attitudes of adolescent girls with disabilities towards menstruation have an impact on their hygiene management practices?

5. Could you share any instances or examples where a negative or positive attitude towards menstruation among these girls has influenced their Menstrual Hygiene Management practices?

6. In your opinion, is there a relationship between the level of knowledge about menstruation among adolescent girls with disabilities and their Menstrual Hygiene Management practices in selected schools in Wajir County?

7. Can you provide any insights into how the knowledge or lack of knowledge about menstruation may influence the hygiene management practices of these girls?

8. Based on your experience, do you believe that the availability of institutional resources such as information, sanitary materials, toilets, and water in schools plays a role in the Menstrual Hygiene Management practices of adolescent girls with disabilities in selected schools in Wajir County?

9. Can you give examples of how the presence or absence of these institutional resources has affected the Menstrual Hygiene Management practices of these girls?

10. What measures ought to be undertaken in improving menstrual hygiene in adolescent girls with disabilities among selected schools in Wajir County?

Appendix 5: Research authorization from Kenyatta University Graduate School

KENYATTA UNIVERSITY
GRADUATE SCHOOL

E-mail: dean-graduate@ku.ac.ke
Website: www.ku.ac.ke

P.O. Box 43844, 00100
NAIROBI, KENYA
Tel. 020-8704150

Our Ref: Q139/CE/28350/2015

DATE: 13th June, 2022

Director General,
National Commission for Science, Technology
and Innovation
P.O. Box 30623-00100
NAIROBI

Dear Sir/Madam,

RE: RESEARCH AUTHORIZATION FOR MR. ABDIWAHIT AHMED JAMA
REG. NO. Q139/CE/28350/15

I write to introduce Mr. Abdiwahit Ahmed Jama who is a Postgraduate Student of this University. He is registered for M.P.H. degree programme in the **Department of Population, Reproductive Health & Community Resource Management.**

Mr. Jama intends to conduct research for a M.P.H. thesis Proposal entitled, **"Menstrual Hygiene Management Practices among Adolescent Girls with Disabilities in Selected Primary Schools in Wajir County, Kenya."**

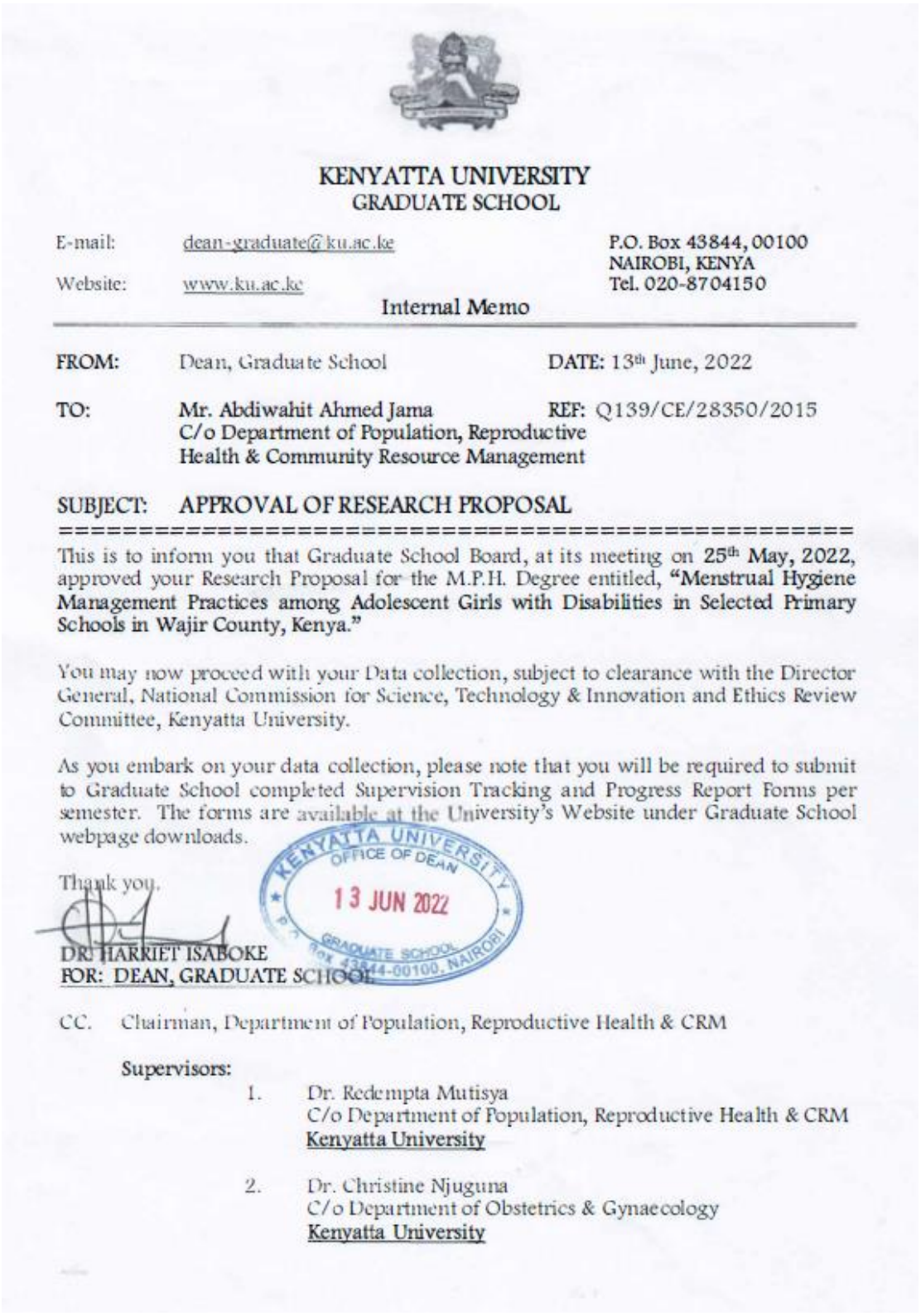
Any assistance given will be highly appreciated.

Yours faithfully,

KENYATTA UNIVERSITY OFFICE OF DEAN 13 JUN 2022 GRADUATE SCHOOL 00100, NAIROBI

PROF. ELISHIBA KIMANI
DEAN, GRADUATE SCHOOL

Appendix 6: Research Approval from Kenyatta University Graduate School



KENYATTA UNIVERSITY
GRADUATE SCHOOL

E-mail: dean-graduate@ku.ac.ke
Website: www.ku.ac.ke

P.O. Box 43844, 00100
NAIROBI, KENYA
Tel. 020-8704150

Internal Memo

FROM: Dean, Graduate School DATE: 13th June, 2022

TO: Mr. Abdiwahit Ahmed Jama REF: Q139/CE/28350/2015
C/o Department of Population, Reproductive Health & Community Resource Management

SUBJECT: APPROVAL OF RESEARCH PROPOSAL

This is to inform you that Graduate School Board, at its meeting on 25th May, 2022, approved your Research Proposal for the M.P.H. Degree entitled, "Menstrual Hygiene Management Practices among Adolescent Girls with Disabilities in Selected Primary Schools in Wajir County, Kenya."

You may now proceed with your Data collection, subject to clearance with the Director General, National Commission for Science, Technology & Innovation and Ethics Review Committee, Kenyatta University.

As you embark on your data collection, please note that you will be required to submit to Graduate School completed Supervision Tracking and Progress Report Forms per semester. The forms are available at the University's Website under Graduate School webpage downloads.

KENYATTA UNIVERSITY OFFICE OF DEAN 13 JUN 2022 GRADUATE SCHOOL P.O. Box 43844-00100, NAIROBI

Thank you.

DR. HARRIET ISABOKE
FOR: DEAN, GRADUATE SCHOOL

CC. Chairman, Department of Population, Reproductive Health & CRM

Supervisors:

1. Dr. Redempta Mutisya
C/o Department of Population, Reproductive Health & CRM
Kenyatta University

2. Dr. Christine Njuguna
C/o Department of Obstetrics & Gynaecology
Kenyatta University

Appendix 7: Ethical clearance from KU Ethics and Review Committee

KENYATTA UNIVERSITY
CENTRE FOR RESEARCH ETHICS AND SAFETY

Fax: 8711242/8711575
Email: chairman.kuerc@ku.ac.ke
Nairobi, 00100

P. O. Box 43844,

Tel: 8710901/12

Website: www.ku.ac.ke
Our Ref: **KU/ERC/APPROVAL/VOL.1**

Date: 28th /07/2022

Abdiwahit Ahmed Jama
P.O Box 43844, 00100
Nairobi.

Dear Mr. Jama,

APPLICATION NUMBER: PKU/25576/I1689 – MENTRUAL HYGIENE MANAGEMENT PRACTICES AMONG ADOLESCENT GIRLS WITH DISABILITIES IN SELECTED PRIMARY SCHOOLS IN WAJIR COUNTY, KENYA

This is to inform you that ***KENYATTA UNIVERSITY ETHICS REVIEW COMMITTEE*** has reviewed and approved your above research proposal. Your application approval number is **PKU/25576/I1689.** The approval period is **28th/07*/2022 to 28th/07/2023***

This approval is subject to compliance with the following requirements;

i. Only approved documents including (informed consents, study instruments, MTA) will be used
ii. All changes including (amendments, deviations, and violations) are submitted for review and approval by ***KENYATTA UNIVERSITY ETHICS REVIEW COMMITTEE***
iii. Death and life threatening problems and serious adverse events or unexpected adverse events whether related or unrelated to the study must be reported to ***KENYATTA UNIVERSITY ETHICS REVIEW COMMITTEE*** within 72 hours of notification
iv. Any changes, anticipated or otherwise that may increase the risks or affected safety or welfare of study participants and others or affect the integrity of the research must be reported to ***KENYATTA UNIVERSITY ETHICS REVIEW COMMITTEE*** within 72 hours
v. Clearance for export of biological specimens must be obtained from relevant institutions.

vi. Submission of a request for renewal of approval at least 60 days prior to expiry of the approval period. Attach a comprehensive progress report to support the renewal.

vii. Submission of an executive summary report within 90 days upon completion of the study to ***KENYATTA UNIVERSITY ETHICS REVIEW COMMITTEE***

Prior to commencing your study, you will be expected to obtain a research license from National Commission for Science, Technology and Innovation (NACOSTI) https://research-portal.nacosti.go.ke and also obtain other clearances needed.

To serve you better, researchers are kindly requested to access and complete a customer feedback form and sent it back online as you continue with research and upon completion of data collection found on the following website link; ;(https://docs.google.com/forms/d/1ytWefDwvyz5h1oz_VIn0xbxg3uGdlDzMXFWNDsMrRPQ/edit?usp=sharing

Yours sincerely

KENYATTA UNIVERSITY
OFFICE OF THE CHAIRMAN
28 JUL 2022
ETHICS REVIEW COMMITTEE
P.O. BOX 43844 - 00100 NAIROBI

Prof. Judith Kimiywe

Director: Centre for Research Ethics and Safety

Appendix 8: Research License from NACOSTI

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION

Ref No: **348903**

Date of Issue: **21/August/2022**

RESEARCH LICENSE

This is to Certify that Mr.. Abdiwahit Ahmed Jama of Kenyatta University, has been licensed to conduct research in Wajir on the topic: Menstrual Hygiene Management Practices among Adolescent Girls with Disabilities in Wajir County, Kenya. for the period ending : 21/August/2023.

License No: **NACOSTI/P/22/19493**

348903

Applicant Identification Number

Director General
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.

Appendix 9: Research authorization from Wajir County

OFFICE OF THE PRESIDENT

MINISTRY OF INTERIOR AND COORDINATION OF NATIONAL GOVERNMENT

Telegraphic Address: "County"
Email: ccwajircounty@yahoo.com
When replying please quote

Ref No: F50/VOL.1/187

The County Commissioner
Wajir County
Private Bag
WAJIR

17th October, 2022

All Deputy County Commissioners
WAJIR

RE: RESEARCH AUTHORIZATION

Reference is made to a research license from National Commission for Science, Technology & Innovation ref no. 348903 dated 21st August 2022 on the above subject matter.

Mr. Abdiwahit Ahmed Jama is hereby authorized to conduct research on: **"Menstrual Hygiene Management Practices Among Adolescent Girls with Disabilities in Wajir County, Kenya"** for the period ending **21st August 2023**.

This is therefore to request you to give the necessary assistance to enable him conduct the research within your Sub-Counties.

COUNTY COMMISSIONER
WAJIR COUNTY

J. G. Magangi
For: County Commissioner
WAJIR COUNTY

cc

Mr. Abdiwahit Ahmed Jama

MINISTRY OF EDUCATION

STATE DEPARTMENT OF EARLY LEARNING AND BASIC EDUCATION

Telegrams: "Education Wajir"
Telephone: 0720216552
When replying please quote

COUNTY DIRECTOR OF EDUCATION
P.O. BOX 31-70200
WAJIR

REF: EDW/VOL.III/ADMIN/28

Date 14TH OCTOBER 2022

ABDIWAHIT AHMED JAMA
KENYATTA UNIVERSITY
P O BOX 43844-00100
NAIROBI.

Dear Sir,

RE: RESEARCH AUTHORIZATION

In reference to letter ref NACOSTI/P/22/19493/348903 dated 21st August 2022 from the National Commission for Science, Technology and innovation granting you authority to undertake research on "Menstrual Hygiene Management Practices among Adolescent Girls with Disabilities in Selected Primary Schools in Wajir County, Kenya for the period ending 21st August. 2023.

This is therefore to inform you that this office has no objection and has granted you authority to conduct your research in Wajir County.

Wish you all the best in your undertaking.

COUNTY DIRECTOR OF EDUCATION
WAJIR COUNTY
P. O. Box 31 - 70200,
WAJIR.

ABDIHAMID MAALIM
COUNTY DIRECTOR OF EDUCATION
WAJIR COUNTY.

SGS

Appendix 10: Map of study area