

**INFLUENCE OF PROVISION OF WATER, SANITATION, HYGIENE AND  
SANITARY MATERIALS ON PUBESCENT GIRLS' SCHOOL  
ATTENDANCE IN WAJIR SOUTH SUB-COUNTY**

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**A Research Project Report Submitted In Partial Fulfillment for the Award of  
Degree of Master of Arts in Rural Sociology and Community Development in  
the University of Nairobi**

**2016**

## DECLARATION

This research project report is my own original work and has never been presented for a degree in any other university.

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This research project report has been submitted for examination with our approval as the University supervisors

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## **DEDICATION**

This study is dedicated to my lovely daughter Bansy Muthoni, who had to sacrifice her normal share of quality time with mom for this study to be finally concluded.

## **ACKNOWLEDGEMENT**

I take the honor to recognize my supervisor, Mr. Tom Nyang'au for his invaluable support and constructive guidance towards accomplishment of this task. I express gratitude too, to Dr. Edward Ontita for his advice, understanding and oversight towards the completion of this piece of academic work.

Many thanks to my colleagues in Wajir County, Styvers Kathuni, Benson Mwarongo, and Charles Mugambi and the data collection team, for their support during the data collection exercise. You made it all possible.

Finally, my sincere gratitude to God almighty for through Him, all things are possible. Blessed be His name forever.

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## **ABBREVIATIONS**

CSE	Comprehensive Sexuality Education
EMIS	Education Management Information System
FBOs	Faith Based Organizations
FPE	Free Primary Education
GDP	Gross Domestic Product
GoK	Government of Kenya
NGOs	Non-Governmental Organizations
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNICEF	United Nations Children's Fund
WASH	Water, Sanitation and Hygiene
WHO	World Health Organization

## ABSTRACT

The importance of access to water, sanitation and hygiene education for school going children, is key in reducing absenteeism especially among female pupils. This study purposed to examine how factors related to provision of water, sanitation, hygiene education including provision of sanitary materials, as well as positive social cultural support influence school attendance among pubescent girls in rural primary schools in Wajir South Sub-County. The study examined independently the influence of each of the five variables namely access to water supply, hygiene education, sanitation (latrines in school), provision of sanitary materials for managing menses as well as supportive social cultural norms on pubescent girls school attendance. Simple random sampling procedure was used in selecting 148 pubescent girls who participated in the study. In addition purposive sampling technique was used to select seven (7) head teachers who provided information through in-depth interviews. Data collection utilised face to face interview with pubescent girls using questionnaires, interview guides for group discussions and in-depth interview guides with head teachers. Secondary data was gathered from literature review. Raw data from questionnaires was analysed using Statistical Package for Social Sciences (SPSS) version 22, while qualitative data from group interviews with pubescent girls and in-depth interviews with head teachers was analysed manually and summarised based on themes and patterns. The study utilized descriptive statistics in computing frequencies related to the study variables. From the study, it was evident that provision of water, hygiene education, sanitation facilities, sanitary materials and positive cultural support to pubescent girls influences their school attendance. The study therefore concluded that provision of water, hygiene education; basic sanitation as well sanitary materials coupled with positive support to pubescent girls in primary schools significantly reduced absenteeism in schools. The study recommends that stakeholders supporting interventions in water and sanitation in primary schools with pubescent girls should consider implementing the whole package (water, sanitation facilities, and hygiene education) including provision of sanitary materials and social support as main interventions. The study also recommends that further studies should be carried out to assess the effects of the same variables on pubescent girls' academic performance and retention.

# **CHAPTER ONE**

## **INTRODUCTION**

### **1.1 Background to the Study**

By the twentieth century, women were winning greater access to educational programs at all levels. Feminists of various orientations have over time made considerable contribution to politics of gender awareness and empowerment as well as issues of equal opportunity and access to resources such as property, wealth and education (Chege & Sifuna, 2006).

Currently, girls' education has been viewed as a primary predictor for a number of development indicators including national fertility rates, infant mortality, family income and productivity. World Bank economists have recognized girls' education as a single development intervention with the greatest individual and social returns (Brent, 2005).

The access to quality education is one of the most important factors in enabling children to fulfill potential in later life and reduce poverty (Abadzi, 2009). Increased educational attainment is also associated with substantial health gains especially on child health in future generations including reduction in child mortality (Gakidou, et al, 2010). Important gains in child health may be associated even with future mothers' improved access to primary education alone (Basu and Stephenson, 2005). The importance of access to education is also reflected within the Millennium Development Goals of the commitment to ensure that all children can complete a course of primary education (United Nations, 2011).

However, many developing countries continue to lose a lot of resources through high school dropout. According to the World Bank, the Government of Malawi for example allocated 4.2 percent of Gross Domestic Product towards public educational expenditure in 2007, which represented around 195 million dollars. Of this, 55% was allocated towards primary school.

With a primary school dropout rate of 65% in 2007, it is estimated that nearly half a million school places were taken up by children who fail to complete primary school. In monetary terms, this broadly represented an annual expenditure of 60 million dollars, 1.3 percent of GDP in 2007, on the education of children who probably left schooling without any basic skills (Sabates, Kwame, Westbrook, & Hunt, 2010).

Children in Kenya (0-18) years constitute more than half of the 38 million total population while 20% of the population is under 5 years of age (Kenya National Census, 2009).

Since the introduction of free primary education in 2003, primary school enrolment has increased from 77% in 2002 to 92% in 2007 with near parity nationally between boys and girls (National Plan of Action for Children 2008-2012).

Oketch and Rolleston (2007) indicate that at the time of Kenya's independence in 1963, many more boys than girls went to school. Social customs and gender roles generally favored boys at the expense of girls. As cultural barriers to girls' education whittled down with time, these differences in enrolment declined considerably. By 2000, nearly as many boys as girls were enrolled in school, and enrolment rose from 87 percent in 1998 to 94 percent in 2008/09. But striking variations in enrolment rates are evident at regional levels. For example, about 99 percent of both girls and boys were likely to be in school in Central Province in 2008/09.

On the other hand, girls fared much worse than boys in North Eastern Province, at 56 percent and 64 percent, respectively.

Government of Kenya data on trends in primary schools completion rate indicates that there has been progress in retention rate with the primary completion rate increasing from 62.8 percent in 2002 to 81.0 percent in 2007 and marginally dropping to 79.5 percent in 2008. In 2008, there were fewer standard 8 graduates as compared to 2007.

North Eastern province had the lowest recording of 36.5 percent. Additionally, the primary schools dropout rate has also varied over time. In 2003, the primary schools registered a dropout rate of 2.0 percent rising to 6.5 percent in 2004. However, the trend changed from 4.9 percent in 2005 to 3.5 percent in 2007. In 2008, 3.7 percent of the girls dropped out as compared to 3.2 percent for boys (GoK and UNICEF, 2008).

## **1.2 Statement of Problem**

Scholarly evidence point to the fact that school dropout rate for adolescent girls remains a top challenge in education system in developing countries. In Kenya, it is estimated that about 35 percent of girls between the ages of 16 and 20 were in school, compared to about 50 percent of boys (Muganda and Omondi, 2010). The Economic Survey (2011) indicates that more than 400,000 pupils who enrolled in school under free primary education program in Kenya did not complete standard eight. They were forced to drop out or repeat and only 59 percent of them completed. The worst affected area in the country is the Northern Kenya region which records the lowest school retention and progression of 36.5 percent (GoK and UNICEF, 2008).

High rate of school dropout is a very costly affair that results in high wastage of scarce national resources through ineffective education system. According to Muganda and Omondi (2010) for every 10,000 girls dropping out of school each year, the government losses an estimated United States dollars 750,000. Countries striving to attain universal primary education, like Kenya, have to eliminate this wastage of resources and put mechanisms in place to reduce dropout rate. Failure to complete a basic cycle of primary school not only limits future opportunities for children but also represents a significant drain on the limited resources that countries have for the provision of primary education.

Scholars have identified a number of issues that contribute to absenteeism and eventual dropping out of girls from school. Muvea (2011) asserts that menstruation alone causes Kenyan adolescent girls to lose an average of 3.5 million learning days per month. In addition, poor sanitation, mainly lack of latrines for girls use in schools is documented as a major determinant of whether girls turn up for classes or not (FAWE, 2006).

The WHO (2009) also indicates that girls and female teachers are affected by lack of sanitary facilities which prevents them from attending school during menstruation. Lack of information for adolescent girls on human growth and development, including managing menstruation affects their quality of life. UNESCO (2014) indicates that many myths and taboos still hover around menstruation and lead to negative attitudes towards this biological phenomenon and women experiencing it.

It further points out that despite the variety of potential sources of information available, significant numbers of girls in many countries begin their menses without prior knowledge of managing the same.

From literature review, it was evident that several studies have been done to determine the major contributors to school pubescent girls' absenteeism from schools in Kenya. However, none of the study interrogated the effect these factors specifically on pubescent schools school attendance among pastoral communities in Wajir County. This study therefore intends to further contribute to the body of knowledge on this subject by assessing how factors related to water supply, access to sanitation, hygiene education, provision of sanitary materials, as well as social cultural support influences pubescent girls school attendance and absenteeism in public primary schools in Wajir South Sub- County.

### **1.3 The Study Questions**

The study was guided by the following research questions:

1. How does access to clean water for drinking and hygiene contribute to girls' school attendance?
2. How does access to hygiene education contribute to girls' school attendance?
3. How does access to adequate and safe latrines affect girls' school attendance?
4. To what extent does access to adequate and affordable sanitary materials affect girls' school attendance?
5. In what way does positive social cultural support contribute to girls' school attendance?

## **1.4 The Study Objectives**

### **Main Objective**

To examine how pubescent girls' school attendance is affected by access to basic services, mainly provision of water, sanitation, hygiene education and sanitary materials in primary schools.

### **Specific Objectives**

The specific objectives of the study included the following:

- 1) To determine how access to clean water for drinking and hygiene contribute to girls' school attendance.
- 2) To determine how access to hygiene education contribute to girls' school attendance.
- 3) To examine how access to adequate and safe latrines affect girls' school attendance.
- 4) To establish to what extent access to sanitary materials affect girls' school attendance.
- 5) To ascertain to what extent positive social cultural support contribute to girls' school attendance.

## **1.5 Justification for the Study**

The significance of education in Kenya's economic growth and development cannot be gainsaid. Education plays a critical role in unlocking potential for self-reliance as well as contributes to growth in Kenya's Gross Domestic Product (GDP). With the realization of the benefits of the Millennium Development Goals (MDGs), many governments globally have made a commitment to expand educational opportunities for children by 2015.

According to UNICEF (2012a) water, sanitation and hygiene education (WASH) in schools promotes lifelong health, enhances well-being of children and their families, as well as paves way for new generations of healthy children. WASH in schools is also credited in significantly reducing hygiene-related diseases; increases student attendance and learning achievement; as well as contributes to dignity, inclusion and equity. These attributes serve as a base for ongoing development and economic growth.

The United Nations Convention on the Rights of the Child of 1989, article 29, recognizes the right of every child to education, as well as the fundamental principles necessary in making primary school compulsory and available to all children (<http://www.ohchr.org>). United Nations Millennium Development Goals (MDGs) of 2015 recognises the important of WASH in schools in fulfilling universal right to health and education this is documented as significantly contributing in reduction of child mortality, advancing gender equality, and improving access to basic water and sanitation.

It is against the backdrop of the importance of WASH in schools that this study was carried out.

The findings of this study are intended to contribute to the body of knowledge in the sectors of education, water and health sectors as well as other stakeholders such as Community Based Organizations, Faith Based organizations and Non-Governmental Organizations.

Particularly, the study intended to:

1. Highlight critical issues and strategies to be considered in enhancing girl child education hence contribute in reducing the gender gap in education system and life opportunities.
2. Provide valuable information critical to policy makers and relevant government line ministries including the civil society with a focus on promoting girl child education.

### **1.6 Study Scope and Delimitation**

Waji South Sub-County is located in Wajir County on North Eastern Kenya. It has a total 36 public primary schools with a total enrolment of 9,859 pupils of which of 6,230 were boys and 3,629 girls (Source: County Ministry of Education office). The choice of this sub-county was mainly influenced by the fact that the Sub-County has in recent past registered very high dropout rate among girls compared to other sub-counties (source: County Education Director).

In addition, during the time of study, Wajir County was experiencing high insecurity mainly related to attack by Al Shabab from Somalia. However, the researcher was able to complete the study due to existing cordial relationship with government security officers in the county.

The study targeted adolescent girls of age 13-19 in upper primary schools in Wajir South District. Due to late entry for formal schooling in Northern Kenya, majority of adolescent girls are still in primary schools.

### **1.7 The Limitations of the Study**

The study extensively depended on pupils' ability to recall information spanning back to two weeks. The responses may have been influenced by recall bias.

However, to minimize recall bias, the researcher ensured that respondents were allowed adequate time to reflect and think through a sequence of events in the recent past before answering the survey questions. The study also depended on the willingness of the respondents to provide accurate and truthful information. To overcome this limitation, the lead researcher ensured that research assistants took time to explain to the respondents about the need for accurate information as well as explained to them the importance of the study.

### **1.8 Basic Assumptions of the Study**

This study assumed that most public primary schools in Wajir South Sub-County provided to some extent water, sanitation, hygiene education and sanitary materials to pubescent girls. Also the study was designed with the assumption that key stakeholders in Wajir County, mainly the Education and Health sectors were supportive of the research and that sampled survey respondents in primary schools answered the research questions truthfully.

### **1.9 Definition of Significant Terms used in the Study**

*Water supply, sanitation and hygiene services (WASH)* in the context of this study referred to intervention of schools or other development actors in providing infrastructure for water supply ( water points), sanitation facilities (latrines), hand washing stations, and soap, as well as accompanying education on maintaining personal and environmental hygiene.

*School attendance*; school attendance under this study referred to daily physical presentation of primary school girls in school for the defined number of hours of uninterrupted contact with the teacher.

***Puberty*** is a key process of human development into adulthood, involving the most rapid physical growth the human undergoes except for pre-natal and neonatal growth.

***Pubescent girls*** in this study referred to girls who have commenced their monthly menses which mostly occurs during the adolescent years.

***Hygiene education*** in the context of this study referred to timely information provided to young girls in a supportive environment aimed at equipping them with knowledge on healthy and dignified management of menstruation. There are many different ways in which girls can get information about menstruation, for example from their mothers and the media, but school based health and comprehensive sexuality education programs play an important role too.

***Sanitary materials*** in the context of this study referred to protective materials that are available to girls during their monthly menses. There are many materials that are used by girls which include folded cloth; reusable napkins; as well as commercially produced pads and tampons. The choices that girls and women make are informed in part by their personal preferences, but also by what is available, what they can afford, what they can dispose and what they know about.

***Social cultural norms*** in this study context referred to attitudes, perceptions, including myths and misconceptions which define way of life of the population.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

This chapter contains literature in the three broad aspects of theoretical framework, empirical findings from other researchers as well as the study conceptual framework. The theoretical framework comprises of the theory on which the study is anchored while the empirical literature summarizes findings from other researchers on the study focus area. The conceptual framework on the other hand provides the conceptual relationship between the independent variables and the dependent variable of the proposed study. The literature reviewed is organized in the following order: theoretical framework, empirical findings related to study variables of access to water, sanitation, hygiene education, sanitary materials and supportive social cultural norms. The reviewed literature also highlighted existing gaps on the same study focus areas.

#### **2.2 Access to Water for Drinking and Hygiene**

The Kenya National School Health Guidelines (2009) indicates that water, sanitation and hygiene are critical towards creating a child friendly environment in learning institutions. Improved water, sanitation and hygiene in learning institutions generate considerable benefits in terms of improved child health, attendance, performance, retention and transition. Provision of safe and adequate water, sanitation and hygiene services forms the basis of a sustainable solution to the threat of water, sanitation and hygiene related diseases among school children.

The health benefits of safe and adequate water, improved sanitation and hygiene range from reduction in diarrhea, intestinal worms, ecto-parasites, infections and trachoma, to enhanced psychosocial well-being afforded via such factors as the dignity that goes with using a clean sanitary facility in form of toilet or latrine ([www.washinschoolsmapping.com](http://www.washinschoolsmapping.com)).

According to UNICEF (2012b), a growing evidence base from South Asia, sub-Saharan Africa and other low-income regions indicates that many girls reach menarche with inadequate guidance and information on this important developmental stage and physiological change, or on how to manage their menses and body hygiene with confidence.

This prompted UNICEF (2012b) to promote the WASH in schools cycle of opportunity focusing on increasing school attendance and performance through improving access to basic sanitation, hygiene messaging and safe water in school setting.

Kenya subscribes to the Beijing Declaration and Platform for Action 1995 (<http://www.un.org/womenwatch/daw/beijing/platform/>) which supports the development of women equal access to safe water through participatory needs assessment and policy formulation at the local and national levels. This will ensure that clean water is available and accessible to all, and that environmental protection and conservation plans are designed and implemented to restore polluted water systems and damaged watersheds.

The Kenya National Water Services Strategy (2007) promotes universal access for all (both women and men) throughout their lifecycle to social services related to

health care, education, as well as clean water and safe sanitation. As a guide to the reform process, the strategy further stipulates the following principles:

- 1) Provision of adequate and reliable potable water as a way of alleviating poverty,
- 2) Affirm that water is a basic need and therefore provision of water resources is a means of enabling people to live a decent life, and
- 3) Recognize the central role of women in provision of domestic water at the household level and as such aim at mainstreaming gender in water provision services.

### **2.3 Access to Hygiene Education**

Kirk and Sommer (2006) identify the lack of knowledge and understanding about menstruation in most traditional and conservative communities as the key source of stigma about what is a normal, natural biological process. There is also a culture of silence around menstruation leading to the menstrual process being viewed as a weakness of women. The subject is hardly ever discussed in families, resulting in it also not being an easy topic of discussion and engagement even in schools. Adolescence is a crucial stage of life and one that is challenging for most girls because of its physical and psychological changes. One of the major physiological changes in adolescent girls is menstruation. Today in Kenya menstruation is not only a health concern, but also an educational policy concern – and has become a key factor in the country's bid to achieve the MDG of eliminating gender disparity in primary and secondary education by 2015.

O'Connor and Kovacs (2003) define adolescence as a transitional phase in life from childhood to adulthood, and is something worth celebrating. They indicate that the stage is marked by physiological changes such as increased body size and the ability

to reproduce as well as psychological changes, including the ability to think critically, an expanded reasoning capacity, identity formation and sensitivity to the ‘new’ body image. However, for most girls in Kenya and other parts of the continent, this phase often brings challenges that push girls out of school and social activities, making the celebration short-lived. These challenges have often been underplayed, even though research has shown that their effects are significant. For example, menstruation causes Kenyan adolescent girls to lose an average of 3.5 million learning days per month (Muvea, 2011).

According to UNESCO (2014), despite the variety of potential sources of information available, studies have regularly shown that in a range of countries, significant numbers of girls begin their menses without knowing anything about it.

#### **2.4 Access to Adequate and Safe Latrines**

UNICEF (2012b) affirms the fundamental premise of WASH in schools which recognizes that girls who have reached puberty as well as female school staff need privacy. It further notes that providing female students and staff with private and safe facilities for menstrual hygiene management enables them to be in school more often.

Focusing more on the dynamics in the school space, the Forum for African Women Educationists (FAWE) (2006) established that the lack of a conducive school environment was a leading cause of the low retention of girls in school – with poor sanitation being specifically cited as a leading determinant of whether adolescent girls turn up for class or not (in addition to a lack of security, and long distances to school).

Yet, according to FAWE, girls' education is the most important investment for women in developing countries because of its contribution towards better health for their families, alongside increasing the women's potentials as well as lowering fertility rates (FAWE, 2006). Accessing sanitary protection is also tied to a lack of facilities for the girls to dispose of their used sanitary towels as well as a lack of private spaces where the girls can comfortably change (Obonyo, 2003).

## **2.5 Access to Sanitary Materials**

“Limited access to safe, affordable, convenient and culturally appropriate methods for dealing with menstruation has far reaching implications for rights and physical, social and mental well-being of many women and adolescent girls in Kenya. It undermines sexual and reproductive health and well-being and has been shown to restrict access to education.” (Africa Population Health Research Centre, 2010),

Additionally, Obonyo (2003) critically observes the difficulty faced by adolescent girls in accessing sanitary protection resulting from their struggle to meet their daily needs. He notes that these economic conditions are caused by many factors ranging from lack of empowerment to single parent-headed families. Further on, UNESCO estimates that one in 10 African adolescent girls miss school during menses and eventually drop out because of menstruation-related issues, such as the inaccessibility of affordable sanitary protection, the social taboos related to menstruation, and the culture of silence that surrounds it (allafrica.com).

According to Lukalo (2010) menstruation is not just a private affair but has the potency to become public, embarrassing and often a source of stigma for the girls.

In his ethnographic study in Bungoma, Lukalo noted that inaccessibility of menstrual products resulted in embarrassment, anxiety and shame when girls and women stained their clothes, which they also considered stigmatising. The schoolgirls interviewed for the various studies generally described menstruation as a time of anxiety and discomfort especially at school, leading to low concentration in class. This led him to conclude that adolescent girls and most women in Kenya have limited knowledge about menstruation, as well as sexual and reproductive health.

## **2.6 Positive Social Cultural Support**

Many negative social cultural beliefs and practices discourage girls' education. Nadia (2010) identified cultural and social barriers for girls against accessing education in Pakistan. These included: high illiteracy among parents who do not realize the importance of education for girls, poverty that leads parents to prefer boys for schooling than girls, low status accorded to women in general in some tribal societies where they are regarded as less intelligent; responsible for house work and serving the men –folk of the family, and early marriage. This means that girls are prepared for housekeeping rather than for school education.

However, according to Prouty (1991) ([elibrary.worldbank.org/doi/pdf](http://elibrary.worldbank.org/doi/pdf)), in Kenya, and Rwanda, a significant number of the mothers interviewed in a survey preferred to invest in girls' education for the same reasons often given for not investing in girls, more secure family and old age support.

According to UNESCO (2014), many myths and taboos still hover around menstruation and lead to negative attitudes toward this biological phenomenon and women experiencing it. After menarche, girls are faced with challenges related to management of menstruation in public places.

The study recommended implementation of school-based Comprehensive Sexuality Education (CSE) programmes as well as promoted social support for pubescent girls by, parents and communities at large. A major conclusion of the study was that as long as menstruation remains a taboo and shameful issue which is poorly understood by both men and women, it will be very difficult to develop good public policy and practice around it.

## **2.7 Theoretical Framework**

The study has been anchored on Albert Bandura's theoretical framework of Social Cognitive Theory which postulates that people are driven, not by inner forces, but by external factors (Bandura 1986). This model suggests that human functioning can be explained by a triadic interaction of behavior, personal and environmental factors, also referred to as *reciprocal determinism*.

## **2.8 How Theory Informs Practice**

Social scholars indicate that in order to increase levels of self-efficacy, it is important to provide resources and support to raise individual confidence. They also suggest that to raise self-efficacy, behavior change should be approached as a series of small steps.

Bandura postulates that even when individuals have a strong sense of efficacy they may not perform the behavior if they have no incentive. This affirms that if one is interested in getting others to enact behavior change, it may be important to provide incentives and rewards for these behaviors. He further notes that shaping the environment may encourage behavior change by providing opportunities for behavioral change, assisting with those changes, offering social support, as well as recognizing environmental constraints that might deter behavior change.

## **2.9 Linkages of the Theoretical Framework with the Study**

In this study, the triad of interaction was interpreted as follows: the behavior aspect of the theory relates to the study dependent variable; pubescent girls school attendance, the personal factors related to pubescent state of the girls, while environmental factors related to the independent study variables of access to basic social amenities and services such as water, hygiene education, sanitation, sanitary materials, including provision of positive reinforcement through social cultural support.

Further one, the study continued to infer that children were likely to continue attending school if the school provided conducive physical environment, which also include access to water, hygiene and sanitation services. The conducive physical environment is further enforced by instructions they receive from parents, teachers, and other authorities as well as cross learning from peers. Lastly, it is also worth noting that children behaviors are reinforced or modified by the consequences of their actions and the responses of others to their behaviors.

## 2.10 The Study Conceptual Framework

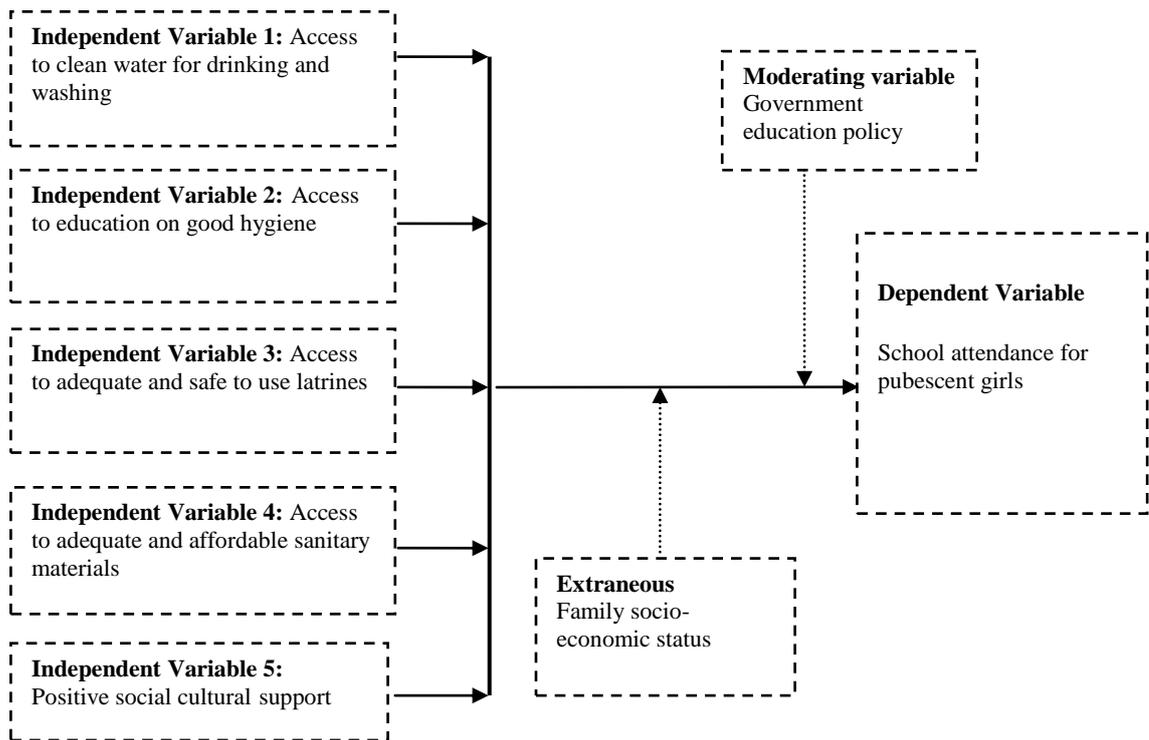


Figure 1: Conceptual Framework

## 2.11 Discussion of the Conceptual Framework

The conceptual framework illustrates how the five study variables which include water supply, hygiene education, sanitation facilities (latrines), sanitary materials and positive social cultural support (also considered as the independent variables in this study) were assessed to establish whether they have significant positive effects on pubescent girls' school attendance. The favorable government policies in education sector constituted the study moderating variable while the socio-economic status of the girls' family constituted the study extraneous variable.

## 2.12 Operationalization of Study Variables

Research objectives	Variable	Data Description	Type of Data	Scale of Measurement	Data collection tool	Descriptive statistics
To examine how factors related to water supply, sanitation and hygiene affects pubescent girls' school attendance	<b>Dependent Variable</b>  School attendance for pubescent girls	Pubescent girls have access to clean water for drinking and hygiene in school	Binary	Nominal	Interview Guide ( Focus Group Discussion and Key Informant Interviews)	Frequency distribution tables
		Pubescent girls have access to hygiene education	Binary	Nominal	As above	
		Pubescent girls have access to adequate and safe to use latrines	Binary	Nominal	As above	
		Pubescent girls have access to adequate and affordable sanitary materials	Binary	Nominal	As above	
		Pubescent girls with positive social cultural norms	Binary	Nominal	As above	
	<b>Demographics</b>	Age of pupil in years	Continuous	Ratio	Face to Face Questionnaire	
		Number of years in school	Continuous	Ratio	Face to Face Questionnaire	
		Number of days missed schooling	Continuous	Ratio	Face to Face Questionnaire	

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

This chapter outlines the research methodology that was utilized in conducting the study. The breadth of this section spanned from articulating the research design, target population, sample population, sample size and sampling procedures, research instruments, defining validity and reliability of the research instruments, to data collection procedures, including stipulating data analysis techniques. Each of these aspects is addressed in details in subsequent sections of this chapter.

#### **3.2 Research Design and Method**

This research took the form of descriptive cross-sectional study where school attendance for pubescent girls' in seven public schools in Wajir South Sub-County was examined. According to Mugenda and Mugenda (1999) descriptive research involves the description, recording, analysis and interpretation of conditions that now exist. It also involves some type of comparison and contrast and may attempt to discover relationships that exist between non manipulated variables. Descriptive design was considered appropriate for this study since the focus was on obtaining and describing the findings based on the five study variables. Primary data for the study was collected by use of questionnaires and complemented by use of in-depth interview guides. However, secondary data was obtained from sources which included scholarly journals, books, and papers by authorities in research. Information was also accessed from internet sources, mainly Google scholar.

### **3.3 Target Population**

Airasian (2000) defines target population as the population that the researcher would ideally like to generalize to. It also refers to any group of institution, people or object that has at least one characteristic in common.

The target population for this study comprised of pubescent girls in 7 public primary schools in Wajir South Sub-County. Wajir County, as is the case in other Northern Kenya counties, continues to register the lowest number of students in schools at 56 percent for girls and 64 percent for boys (Oketch and Rolleston, 2007) as well as the lowest class 8 completion rate nationally at 36.5 percent (GoK and UNICEF 2008).

The unit of randomization was pubescent girls in the sampled seven public primary schools in Wajir South Sub-County.

The respondents were randomly selected from 250 girls who constituted the total number of pubescent girls in the seven primary schools, as provided by school records in these schools. The respondents also constituted the unit of analysis. In addition, 7 head teachers were purposefully sampled from the already randomly sampled primary schools and included as key informants for the study.

### **3.4 Sample Size Selection and Sampling Procedures**

#### **3.4.1 Sample Size Selection**

The study sample size was calculated using Yamane (1967:886) formulae as shown below

$$n = \frac{N}{1 + N(e^2)}$$

The formula is operationalized as follows;

Where N is the target population

-e is the precision rate (error to make at 0.05)

-n is the sample size

Substituting the formula,

The sample size was obtained as follows:

$$N=250$$

$$e=0.05$$

$$n= \frac{250}{$$

$$1+817(0.05)^2$$

$$=154$$

### **3.4.2 Sampling Procedure**

According to WHO (2003) probability sampling involves using random selection procedures to ensure that each unit of the sample is chosen on the basis of chance. This means that all units of the study population should have an equal, or at least a known chance of being included in the sample. The study adopted simple random sampling to sample seven schools out of a total of 36 primary schools in Wajir South Sub-County. This included obtaining the list of all the 36 public primary schools and assigning them a number. A table of random samples was then used to select the 7 schools using a skip routine of 3. In addition, 155 girls were selected using the same method. This included obtaining the list of pubescent girls in each of the selected primary school from the head teachers and using a table of random numbers with a skip routine of five to identify every 5<sup>th</sup> girl.

This was repeated until the sampled size of the 155 girls was obtained. For replacement of non-response, the same skip routine was continued from the last sampled number in the table of random samples. The researcher also utilized purposive sampling method in selecting 7 head teachers from the already sampled seven primary schools who participated in the study as key informants.

### **3.5 Study Instrument**

The primary data for the study was collected by use of a questionnaire and complemented by use of in-depth interviews guide.

Additionally, secondary data was obtained from sources which included scholarly journals, books, and papers by authorities in research. Information from internet sources, mainly Google scholar was also utilized.

#### **3.5.1 Questionnaires**

Fraenkel (2008) observed that use of questionnaires enables reaching of many respondents at a relatively short time and increases honesty due to the confidentiality that is almost guaranteed by using this form of instrument.

A questionnaire was used to interview the sampled adolescent girls on face to face approach and consisted of five parts which covered the following areas:

- 1) Demographic questions; These included questions about nationality, age, name of school, school grade, parents' educational level, and family monthly income.
- 2) Access to water for drinking and personal hygiene in schools. This section consisted of multiple-choice questions to investigate the prevailing state of water supply in targeted primary schools.

- 3) Hygiene education. This section included semi-open-ended questions (yes and No, why?) on sources of information on health education information and in what topics.
- 4) Safe to use latrines. This section consisted of multiple-choice questions to investigate state of sanitation coverage (number and conditions of latrines) in primary schools.
- 5) Sanitary materials. This section consisted of multiple-choice questions on what sanitary materials girls use during their menses and also find out whether the school administration provides sanitary materials to girls for use during their menses
- 6) Socio-cultural norms. This section included multiple-choice questions on existing socio cultural norms in regard to pubescent girls' education.

### **3.5.2 Interview Guide**

The interview guides in this study were used to interview head teachers as well as moderate focus group discussions for pubescent girls. The guide mainly comprised of open-ended questions.

## **3.6 Measurement**

According to WHO (2003), an important question in the research design is the decision on how measurements are made to ensure reliability and validity.

### **3.6.1 Validity**

Joppe (2000) explains that validity determines whether the research truly measures that which it was intended to measure or how truthful the research results are.

A study is valid if its results correspond to the truth; there should be no systematic error and the random error should be as small as possible. To ensure validity, the study tools were pre-tested as well as data collectors trained on use of study tools. Information obtained during pre-testing was used to revise the study instruments to enhance clarity and ease of use. In addition, Patton (2002) advocates the use of triangulation by stating that combining quantitative and qualitative approaches strengthens a study. To enhance validity, the study utilized both quantitative and qualitative approaches.

### **3.6.2 Reliability**

Joppe (2000) defines reliability as the extent to which results are consistent over time and an accurate representation of the total population under study. To ensure reliability and reproducibility of the study results, the researcher ensured that data collectors were well trained on use of study tools.

The whole field exercise was also coordinated and supervised by lead researcher with help from research assistants. Additionally, subjects' variability was reduced by ensuring that all interviews were conducted during morning hours to reduce effects of hunger, since data collection took place during the month of Ramadhan when teachers and older pupils were on fast.

### **3.7 Data Collection Procedures**

A study permit was obtained from the County Education Director in Wajir County and a copy shared with District Education Officer in Wajir South Sub-County. The researcher trained five research assistants as well as pre-tested the tool prior to roll out of data collection.

Raw data from pupils was gathered through structured questionnaires administered to girls who were randomly selected to participate in the study while interview guides were used to collect data from head teachers. Existing data was also obtained from school records and reports for triangulation purposes.

### **3.8 Data Analysis Techniques**

Quantitative data from questionnaires was entered to the computer using Microsoft Excel and cleaned before importing to Statistical Packages for Social Sciences (SPSS) Version 22 where statistical functions which included descriptive analysis were done. Descriptive statistics were utilized in generating frequency tables which provided exploratory data on each of the study variables. On the other hand, qualitative data from the open ended questions and interview schedules were analyzed and categorized and included as additional description on study findings.

### **3.9 Ethical Considerations**

Research ethics is a codification of ethics of science in practice (National Committees for Research Ethics in Norway, 2006). Under this study, the following ethical principles were adhered to:

To uphold scientific integrity, the researcher followed the due process in academic research which included following the university requirement of design of the project proposal with guidance of a supervisor (s) and submission to the university ethical review committee. This was accomplished and a letter of clearance issued before the commencement of field work. Research authorization was also obtained from government. Copies of both of these are included as appendices to this study report.

Lastly, the researcher has ensured that information in the report which has been obtained from literature review has been rightfully credited to the authors and source, as well as full citation source included in the reference section of this project report.

The researcher also informed the District Education Officer in Wajir South Sub County of the study and consulted head teachers before conducting research with any pupils in each of the sampled school. In addition, permission from the school head teachers to conduct face to face interview with pupils. Lastly, each child was informed that they had choice to participate in the study, or terminate at any stage of the interview.

The researcher made effort to preserve confidentiality of information that was obtained through this study. Identifiers such as name for pupils were not included in the survey tool. For school patrons and head teachers where names and designation were required, this information was not later included in the analysis of qualitative data.

## **CHAPTER FOUR**

### **DATA ANALYSIS, PRESENTATION, DISCUSSIONS AND INTERPRETATION**

#### **4.1 Introduction**

This chapter presents the analysis of the data collected, presentation and its interpretation in relation to the objectives and aim of the study. As a summary to the data collection procedure, a total of 148 interviews were conducted with pubescent girls in Wajir South Sub-County.

#### **4.2 Background Information**

This section presents the key findings from the study. It is organized according to the research objectives and questions on pubescent girls' access to water, hygiene education, sanitation facilities, sanitary materials as well as positive social cultural support. To start with the researcher administered questionnaires to 155 respondents randomly sampled to participate in the study. A completion rate of 148 ( 95.4 %) was recorded which is indeed adequate for the study based on De Vaus (1986) who suggests that eighty percent is good and adequate for the study. The study findings are presented in subsequent sections of this chapter.

##### **4.2.1 Age Range for Respondents**

The age range of study respondents is summarized in Table 1 below;

**Table 1: Age of the Respondents**

<b>Age in years</b>	<b>Frequency</b>	<b>Percent</b>
13-15	123	83.1
16-19	25	16.9
<b>Total</b>	<b>148</b>	<b>100.0</b>

The results on Table 4.2 show that 123(83%) of the total respondents were of 13-15 years while 2(25 %) were 16-19 hence an indication that few girls beyond the age of 15 years remain in primary school. This finding indicates children in adolescent stage of life are still in primary schools; including some in lower primary schools in the Wajir South Sub- County.

#### **4.2.2 Respondents Level of Schooling**

The study sought to know which class the survey respondents were currently attending; their responses are summarized in table 2 below.

**Table 2: Education level of the Respondents**

<b>Class</b>	<b>Frequency</b>	<b>Percent</b>
8	27	18.24
7	19	12.83
6	22	14.86
5	68	45.94
4 and below	12	8.10
<b>Total</b>	<b>148</b>	<b>100.0</b>

From the findings, 80 pupils (54%) of pubescent girls were still in class 5 and below, while a lower number, 68 of them (46%) were in upper primary. From group discussions, this was explained to be as a result of late entry for pupils to formal schooling system.

Group discussions with selected pubescent girls as well as in-depth interviews with head teachers from the target primary schools indicated that children of either gender of ages 7 years and above are responsible for herding family animals, especially small animals such as calves, goats and milk producing animals which do not migrate with adult herders.

In-depth interviews with head teachers revealed that the persisting low number of pubescent girls in upper primary school is also mainly due to negative socio-cultural practices among the Somali community which marry off young girls soon after reaching puberty. According to one of the head teachers, “*we are dealing with cases of girls as young as 9 years old getting are married off soon as they experience their first menstrual period*”.

#### **4.2.3 Years in current school**

The study sought to find out the period the respondent has been in school. Table 3 summarizes the results.

**Table 3: Respondents’ years in school**

<b>Years in school</b>	<b>Frequency</b>	<b>Percent</b>
1 year	5	3.4
2 years	3	2.0
3 years	7	4.8
4 years	11	7.5
5 years	19	12.8
6 years	45	30.4
7 years	21	14.2
8 years	18	12.1
Over 8 years	19	12.8
<b>Total</b>	<b>148</b>	<b>100.0</b>

From the findings, close to a third of respondents (30.4%) had spent 6 years in school. However, the number of pubescent girls who have been in school for a period beyond 6 years reduced by over a half, to 14.2%. Only 12% of pubescent girls had been in school for a total of 8 years and above (considering repetition of some classes). It is evident that a significant number of pubescent girls drop from school after class 6.

#### **4.2.4 Respondents Absenteeism in the last 1 Month**

The research sought to find out the number of days respondents missed school in past 1 month. The data is tabulated in table 4.

**Table 4: Respondents’ absenteeism in the last 1 month**

<b>Number of days missed school</b>	<b>Frequency</b>	<b>Percent</b>
Less than 1	61	41.2
1-5 days	80	54.1
6-10 days	6	4.0
10 days and over	1	.7
<b>Total</b>	<b>148</b>	<b>100.0</b>

From the findings, 58.5% of respondents had missed school in the last one month for duration of 1-5 days. Schools with a water point (mostly wells), latrines and also provided sanitary pads to girls had respondents reporting that they did not miss school in the previous one month, which constituted 41.2% of responses. However for schools that did not provide similar interventions, respondents reported high number of absenteeism in the category of 1-5 days. A higher number of days ranging from 6-10 days were also reported in some of these schools too.

#### 4.2.5 Respondents' Reasons for Absenteeism

The study tried to establish why respondents had missed school in some days in the past 1 month. The reasons are presented in table 5.

**Table 5: Respondents' reasons for absenteeism in the last 1 month**

No of days missed school	Frequency	Percent
Did not miss school	61	41.2
Migrated with parents	2	1.4
Herd family animals	2	1.4
Visit hospital	51	34.4
Did not have sanitary materials	32	21.6
<b>Total</b>	<b>148</b>	<b>100.0</b>

From the findings, 41.2% of respondents had not missed school in the last one month. This was mostly in schools that had interventions on water, sanitation as well as provision of sanitary materials to girls. For those who missed school in schools with adequate WASH services, they provided the main reason as health related, i.e. visit hospital. However, the main reason given by girls in schools without similar interventions was that they did not have sanitary materials for use during monthly periods. This demonstrated that lack of sanitary materials for pubescent girls was the second highest reason why girls missed school.

#### 4.3 Water Access in School

The study posed various questions related to respondents' access to water for use while in school. The responses are presented in sub sections below:

##### 4.3.1 Water point in school

The study sought to find out whether pubescent girls in schools had access to water point in the school compound. The findings are summarized in table 6.

**Table 6: Presence of Water Point in School**

<b>Water point in school</b>	<b>Frequency</b>	<b>Percent</b>
Yes	131	88.5
No	17	11.5
<b>Total</b>	<b>148</b>	<b>100.0</b>

From the findings, majority of respondents (88.5%) had access to water point in school. However, in some schools, the water point was located in the school compound while in others; they had to obtain water from a community source utilized by the village where the school is located. Schools without water point in the compound purchased water from vendors who delivered it using hand carts or donkey carts, or requested pupils to come to school with containers from home. These schools also benefited from charitable work where government and relief agencies trucked water to institutions such as schools and health facilities by during dry spells.

The main uses of water in school included preparation of lunch (under the government supported school feeding program) as well as for drinking purposes.

#### **4.3.2 Type of Water Point**

The study posed a question on the types of water point schools had access to. The findings are presented in table 7 below;

**Table 7: Type of water point**

<b>Type of water point</b>	<b>Frequency</b>	<b>Percent</b>
None	17	11.5
Piped water in compound	17	11.5
Wells	46	31.0
Roof harvesting and storage	68	46.0
<b>Total</b>	<b>148</b>	<b>100.0</b>

The most reported type of water point in schools included rain water harvesting which mainly included a plastic water tank connected to roof gutter for harvesting rain water during the wet season, (46%), followed by hand dug wells (31.0%). A total of 17 respondents (11.5%) indicated that they did not have access to a water point in the school compound. For the intervention of water supply in schools to be effective, the type of water point should be well thought out to ensure continuous supply of adequate water to meet the pupils' needs. This could be in form of connection to a piped water system or a well dug in the school.

From the study findings, majority of schools continued to depend on roof harvesting, which is not suitable for an area which is considered as arid lands and receives annual rainfall that ranges between 150mm and 550mm.

#### **4.3.3 Months Schools had Access to Water**

The study requested information from respondents on number of months the school had water in the past 12 months. This information is presented below:

**Table 8: Number of months with water**

<b>Months water point had water</b>	<b>Frequency</b>	<b>Percent</b>
No water at all in school( depended on pupils bringing water)	9	6.1
Less than 1 month	30	20.2
1-3 months	46	31.1
7-9 months	17	11.5
10-12 months	46	31.1
<b>Total</b>	<b>148</b>	<b>100.0</b>

From the findings, only 46 (31.1%) of respondents reported having over 10 months of access to water while in the school, and a similar number had access for between 1 and 3 months. A total number of 39 (26.3%) had access to water for less than a month, including schools which had no access to water and thoroughly depended on pupils bringing water to school.

The schools that reported to have over 10 months of water supply were those that had water supply interventions in the school in form of connection to an existing pipeline or a dug well in the school compound. The schools that did not have water point in the compound reported that they had fitted water storage tanks for harvesting rain water and also storage of water trucked to the premises from government and relief agencies during dry spells. This underscores the fact that lack of water in schools (which mainly is common during the dry spell) affects school attendance in the region.

#### **4.4 Hygiene Education**

The study also explored whether pubescent girls had access to hygiene education, the main sources of this information and whether girls perceived that they needed extra information on the same. The responses are presented sub-sections below:

##### **4.4.1 Prior Information before Menstruation Onset**

A question was posed to respondents on whether they had prior information on managing menstruation before onset. All respondents from (100%) indicated that they had prior information on menstruation before their onset. They reported that they obtained the initial information on menstruation mainly from their mothers. This underscores the role of mothers in providing this information to their daughters.

Respondents also reported that other sources of this information included aunts, older sibling (sister) and grandmothers.

Surprisingly, teachers were not reported as primary source of this information to the pubescent girls, despite having daily contacts with pupils in schools during the day. Group discussions with girls revealed that girls hesitated from contacting teachers with questions on menstruation because most of teachers were male. Another drawback was that the school curriculum did not contain comprehensive reproduction and sexuality education.

#### **4.4.2 Need for Additional Information on Menstruation**

A further question on whether girls needed additional information on menstruation was posed. Table 9 below presents the findings.

**Table 9: Additional information needed**

<b>Additional Information needed</b>	<b>Frequency</b>	<b>Percent</b>
Yes	123	83.1
No	25	16.9
<b>Total</b>	<b>148</b>	<b>100.0</b>

Despite having basic information from mothers on managing menstruation, majority of respondents (83.1%) indicated that they still needed additional information. From group discussions, girls indicated that the school teaching curriculum for science subject lacked depth on the subject. This was also confirmed by head teachers.

#### 4.4.3 Right Person to Provide Additional Information

Respondents who indicated that they needed additional information were asked to state who they thought was the right person to provide additional information on menstruation. The findings are as follows:

**Table 10: Right Person to Provide Information**

<b>Person to provide information</b>	<b>Frequency</b>	<b>Percent</b>
Mother	54	43.9
Elder sister	14	11.4
Grandmother	1	.8
Teacher	45	36.4
Other girls in school	1	.8
Health worker	8	6.7
<b>Total</b>	<b>123</b>	<b>100.0</b>

Majority of respondents who indicated they needed additional information mostly singled out their mothers as the right source, (43.9%). This further affirmed the role of mothers in mentoring daughters as they transition to adulthood. Teachers were reported as second top source (36.4) despite having not been cited as primary source of information. From group discussions, girls explained why mothers were preferred over teachers because most schools had male teachers only, which girls were uncomfortable to approach. Head teachers also confirmed the girls' position although they indicated that girls openly confided with them especially when asking for assistance with sanitary materials when girls menses commences while in school.

#### 4.5 Sanitation Facilities

The study assessed whether pubescent girls had access to sanitation facilities while in school, whether the facilities were separated for girls and boys.

Factors such as access to water and soap for hand washing after using latrines were examined too. The findings are presented in sub-sections below:

#### **4.5.1 Presence of latrines in schools**

A question explored the availability of latrines in the school compound. All respondents, 148 (100%) indicated that they had latrines for pupils use while in school. This demonstrates that all schools had made attempt to conform to government requirement that schools provide toilets for pupils.

This is also in line with the Kenya National Schools strategy (2010-2015) that asserts that improving water, sanitation and hygiene in our learning institutions generates considerable benefits in terms of improved child-health, attendance, retention, performance, and transition of all learners including girls, boys and children with special needs.

#### **4.5.2 Separate latrines for boys and girls**

A question was posed to respondents on whether the latrines are separated for use by either girls or boys exclusively. The results are as indicated in table 11.

**Table 11: Separate latrines for boys and girls**

<b>Separate latrines for boys and girls</b>	<b>Frequency</b>	<b>Percent</b>
Yes	139	93.9
No	9	6.1
<b>Total</b>	<b>148</b>	<b>100.0</b>

Majority of the respondents (93.9%) indicated that their schools had separate latrines for girls and boys. Additionally, latrines were segregated for girls and boys as well as constructed on different direction to enhance privacy of users, especially girls. This is in line with construction standards and guidelines as provided by the Kenya national government as well as internationally. During group discussions, girls

indicated that they felt more comfortable using latrines which were farther from boys since they did not fear boys peeping on them. This is a good progress in ensuring privacy for users, especially pubescent girls who need to change sanitary materials during school hours.

#### **4.5.3 Lockable girls' latrines**

Respondents were asked whether the girls' latrines were lockable from inside. The results are as indicated in table 12.

**Table 12: Lockable girls latrines**

<b>Lockable latrines for girls</b>	<b>Frequency</b>	<b>Percent</b>
Yes	139	93.9
No	9	6.1
<b>Total</b>	<b>148</b>	<b>100.0</b>

For schools that provided separate latrines for girls, majority of the respondents, (93.9%) indicated that they were lockable from inside. It is important to ensure that latrines are lockable from inside to enhance users' privacy and security.

#### **4.5.4 Latrines sharing between lower and upper primary**

The study tried to find out whether latrines used in schools were separated for young girls and older girls. All respondents (100%) indicated that they share latrines with younger girls in lower classes while in school. However, the ideal situation should be to separate latrines for pubescent and younger girls to reduce queuing and waiting time before accessing the facilities. The study also found that most schools had limited sanitation facilities and only a few meet the national standard where one drop hole or toilet stance should be used by a maximum of 25 girls, or 30 boys.

This may have contributed further to the study finding that it was not possible to further segregate the few available latrines between young girls and pubescent ones.

#### 4.5.5 Older Girls' Perception of Latrines Sharing with Younger ones

The study tried to find out whether older girls were comfortable with existing practice of sharing latrines with younger girls. The results are as indicated in table 13.

**Table 13: Comfortable sharing latrines with younger girls**

<b>comfortable sharing latrines with younger girls</b>	<b>Frequency</b>	<b>Percent</b>
Yes	113	76.4
No	35	23.6
<b>Total</b>	<b>148</b>	<b>100.0</b>

Majority of the respondents (76.4%) indicated that they were comfortable sharing latrines with younger (non-adolescent girls) while in school. However, the (23.6%) that indicated they were not comfortable stated the reasons that older girls need much longer time in changing and cleaning especially when on monthly periods. Respondents also indicated that during break time long queuing was experienced when both younger and older girls needed to access the same latrines.

#### 4.5.6 Presence of water and soap in girls' latrines

The study sought to find out whether schools were providing water and soap in latrines used by older girls. The results are as indicated in table 14.

**Table 14: Soap and Water in Girls Latrines**

<b>Soap and water in girls latrines</b>	<b>Frequency</b>	<b>Percent</b>
Yes	63	42.6
No	85	57.4
<b>Total</b>	<b>148</b>	<b>100.0</b>

Majority of the respondents (57.4%) indicated that their schools were not providing water and soap in girls' latrines for hygiene purposes. This was mainly because schools did not prioritize providing water and soap inside or next to girls' latrines for hygiene purposes by users.

Although as earlier noted water was predominantly available in most schools, this water was mainly used for cooking and drinking. However, (42.6%) of schools provided water for use inside, or next to sanitation facilities which is a good attempt to promoting hygiene among pupils.

#### **4. 6 Provision of Sanitary Materials**

The study tried to find out whether schools were providing sanitary materials to pubescent girls and how girls were using them. The findings are summarized below;

##### **4.6.1 School Providing Sanitary Material**

The study enquired on whether schools management was providing sanitary materials for pubescent girls use. The results are as indicated in table 15.

**Table 15: Schools providing sanitary materials**

<b>Pubescent girls provided with sanitary materials</b>	<b>Frequency</b>	<b>Percent</b>
Yes	109	73.6
No	39	26.4
<b>Total</b>	<b>148</b>	<b>100.0</b>

Majority of respondents (73.6%) reported that they were provided with sanitary materials for use by the schools, mostly provided by national government, and charitable organizations. Provision of sanitary materials to pubescent girls in school is of great importance. This is a noble effort that should be up scaled since one of the main reasons why girls indicated that they missed school was lack of sanitary materials for use during menses.

This problem is also documented by the Kenya National School Strategy (2011-2015) which indicates that in primary and secondary schools in Kenya with an estimated population of 1 million menstruating girls, at least 3/5 or 872,000 of them miss 4-5 days of school per month, due to factors which include lack of sanitary pads and underwear, combined with inadequate sanitary facilities in their schools.

This further confirms other scholars' findings that demonstrate that provision of sanitary materials to pubescent girls influence the level of absenteeism considerably.

#### **4.6.2 Type of Sanitary Material Provided**

The study explored the type of sanitary materials schools were providing to pubescent girls. For schools that provided sanitary materials to pubescent girls, the most common type that was provided was sanitary pad. From key informant interviews with head teachers, sanitary pads were considered more hygienic and safer for use by girls. However girls from schools that did not provide sanitary materials reported that they used cotton wool which was considered affordable and available in local shops.

#### **4.6.3 Source of sanitary material provided by school**

Respondents were asked the source of sanitary materials they were provided by school with. The results were as follows:

**Table 16: Source of sanitary materials**

<b>Source of sanitary materials</b>	<b>Frequency</b>	<b>Percent</b>
Government	39	26.4
NGOs and FBOs	109	73.6
<b>Total</b>	<b>148</b>	<b>100.0</b>

Majority of respondents who used sanitary pad reported that they obtained them mostly from charitable organizations, (73.6) and the government (26.4%).

It was evident that schools that provided sanitary materials obtained them entirely from external sources. None of the schools was purchasing them as expenses from school budget.

However for schools that did not benefit from the charitable interventions, head teachers reported that they sacrificed personal resources to procure pad for girls and kept them in school office as part of emergency kit where they supplied them to girls who usually come to the office to ask for assistance on the same.

In one of the primary school which did not benefit from external support with sanitary pads, the head teacher reported that he and other teachers (all male) were incurring a monthly expense of between Kenya shillings six hundred to three thousand in purchasing sanitary pad for girls. Their appeal for the government was that they should be allowed to stock emergency kit with sanitary pads, which is not currently allowed.

A head teacher in one of the schools commented that *“After we started giving pads to girls, they do not miss school anymore”*.

Schools that received supplies from government also reported challenges which included unreliable supplies (some schools were supplied with pad for one month in a term) as well as inadequacy of pad to reach all needy girls. In some schools, only a handful of girls (10 in one school) were receiving sanitary pads, while the rest of 80 girls did not. This created a big challenge to head teachers in identifying which girls benefitted from the support. The challenge was attributed to the distribution plan that prioritized wider reach (cover all administrative units for perceived equity purposes) but benefit a handful of girls in each school. This was confirmed as a major challenge by Education Officers too.

#### 4.6.4 Months provided with sanitary material by school

Respondents were asked the number of months they received sanitary materials from the school. The results were as follows:

**Table 17: months provided with sanitary material**

Months	Frequency	Percent
1-3 months	5	4.5
4-6 months	41	37.6
7-9 months	17	15.6
10-12 months	46	42.3
<b>Total</b>	<b>109</b>	<b>100.0</b>

Although school provision of sanitary materials was reported by the majority of respondents, only (31.1%) had received them for 10 months and above. Further discussions with head teachers indicated that government supply of the sanitary pads was erratic, in that some months lapse before supplies were done. The reason for similar results from the sanitary pads provision through charitable organizations was attributed to the fact that this intervention has been recently introduced. In most of the schools, it has lasted for a maximum of 6 months by the time of the study.

#### 4.6.5 Materials used during school holidays

Respondents were asked about what they use to manage their menstruation during school holidays. The results were as follows:

**Table 18: Material used during holidays**

Materials used during holidays	Frequency	Percent
Sanitary pads	109	73.6
Old clothes	4	2.7
Cotton	35	23.7
<b>Total</b>	<b>148</b>	<b>100.0</b>

Majority of respondents, (73.6%) from both schools supplied with materials and those not, indicated they were using sanitary pads. This also coincides with majority of respondents that were provided with the sanitary material from schools, which also include materials for use even during school holidays. Consistency of use of similar sanitary material both during school terms and school break (holidays) is expected to promote consistency of use and ensure continuity of access to improved service.

#### **4.6.6 Regularity of Change of Menstrual Material**

Respondents were asked about how often in a day they change materials for managing menstruation. The results were as follows:

**Table 19: Regularity of change of material**

<b>Regularity of change</b>	<b>Frequency</b>	<b>Percent</b>
Once in 24 hours	4	2.7
Twice in 24 hours	72	48.6
Thrice in 24 hours	70	47.3
Others	2	1.4
<b>Total</b>	<b>148</b>	<b>100.0</b>

In relation to menstrual hygiene practices, majority of the respondents (95.9%) indicated that they changed the sanitary materials at least twice in a day. This is in line with the hygiene requirement of changing soiled sanitary materials regularly and at least after every six hours depending on flow.

#### **4.6.7 Regularity of bathing during menstruation**

Respondents were asked about how often in a day they take a bath in managing menstruation. The results were as follows:

**Table 20: Regularity of bath**

<b>Regularity of bath</b>	<b>Frequency</b>	<b>Percent</b>
Once in a day	41	27.7
Twice in a day	90	60.8
Don't take a bath	15	10.1
Others	2	1.4
<b>Total</b>	<b>148</b>	<b>100.0</b>

In addition to regular changing of sanitary materials, (60.8%) of respondents indicated that they took a bath twice a day during their monthly periods. Taking a shower at least twice a day during menses is a personal hygiene measure against bad body odour and reduce incidences of infections in genital areas.

#### **4.6.8 Disposal for Soiled Sanitary Materials**

Respondents were asked about where they dispose of used sanitary materials. The results were as follows:

**Table 21: Disposal for soiled materials**

<b>Disposal for soiled materials</b>	<b>Frequency</b>	<b>Percent</b>
Inside pit latrine	138	93.2
In rubbish pit	1	.7
In containers placed in girls latrines	9	6.1
<b>Total</b>	<b>148</b>	<b>100.0</b>

Majority of the respondents (93.2%) indicated that they disposed soiled sanitary materials inside pit latrines. Since the study setting was purely rural, the disposal of sanitary pad using the only available means, pit latrines was considered sufficient since the area is not served by private waste management companies that mostly provide these services in private institutions and urban settings.

## 4.7 Social Cultural Support

The study explored pubescent girls' general perception on menstruation. The responses are reported as follows:

### 4.7.1 Perception of support

The study tried to establish whether girls perceived that schools and homes provided needed support during pubescent stage. The results are as indicated below;

**Table 22: Perception of support**

<b>Perception of support</b>	<b>Frequency</b>	<b>Percent</b>
Very supportive	106	71.6
Supportive	29	19.6
Little supportive	10	6.8
Not supportive at all	3	2.0
<b>Total</b>	<b>148</b>	<b>100.0</b>

Majority of the respondents (71.6%) indicated they felt supported both at home and school during their menses. Discussions on support revealed that provision of materials for use during menstruation was the highest rated form of support. In this study, majority of girls reported that they received support on menstrual management from their female relatives at while at home and mainly head teachers while in school. The choice of head teacher was based on the fact that sanitary pads including other emergency kit for use in school were stored in school store which also doubled up as head teachers' office.

### 4.7.2 Perception about Onset of Menstruation

The study tried to establish how girls perceived the onset of menstruation. The results are as presented below;

**Table 23: Perception about onset of menstruation**

<b>Perception about onset of menstruation</b>	<b>Frequency</b>	<b>Percent</b>
Very afraid	13	8.8
Somehow afraid	64	43.2
Not afraid at all	71	48.0
<b>Total</b>	<b>148</b>	<b>100.0</b>

48% of the respondents indicated that they no longer felt afraid about experiencing onset of menstruation. However, (43.2%) of them reported feeling somehow afraid and a further (8.8%) reported feeling very afraid. This indicates that a significant number of respondents still experienced some level of fear during menstruation.

#### **4.8 Comparison of findings with findings from other scholarly studies**

This section compares findings of this study with other scholarly findings and is organized in line with the study objectives.

##### **4.8.1 How access to clean water contribute to girls' school attendance**

From the study findings, regular access to water while in school influences pubescent girl's attendance. This implies that availability of water in school had some influence on pubescent girls' school attendance. The finding concurs with a study done in Cambodia by Hunter et.al (2014) which found a strong association with provision of free water and reduced absenteeism.

However, the findings also noted that although the mechanism for the association was not clear, they were partly attributed to improved hydration leading to improved school experience for the children. This also agrees with WHO (2004) that asserts that if everyone in the world had access to a regulated piped water supply and sewage connection in their houses, 1,863 million days of school attendance would be gained.

In addition, the main uses of water by pubescent girls while in school were reported as washing, drinking, and hand washing after visiting latrines, as well as cooking in schools which required had ongoing school feeding program.

#### **4.8.2 How Access to hygiene education contributes to pubescent girls' school attendance**

It was evident from the study, that many respondents had prior information on menstruation before onset. The respondents indicated that their mothers were the main source of this information. This finding agrees with a study by UNICEF in Rwanda where girls were found to have good knowledge levels about menstruation and menstrual hygiene, which they indicated that they initially obtained primarily from their mothers as well as teachers and peers (UNICEF 2012b). The finding however contradicts UNESCO (2014) that asserts that despite the variety of potential sources of information available, studies have regularly shown that in a range of countries, significant numbers of girls begin their menses without knowing anything about it.

When asked whether they needed additional information on menstruation, majority responded in affirmative and went on to indicate that they expect this information mainly from their teachers, as opposed to parents and health workers. However, teachers reported that the curriculum in primary schools is not adequately designed to meet this need since most pubescent girls are mostly expected to be in secondary schools. The respondents' challenge of inadequate information on menstruation concurs with findings of UNESCO (2014) which indicates that pubescent girls' have low level of knowledge about their bodies and about sexual and reproductive health and rights.

The UNESCO study continues to state that after puberty, girls are faced with challenges related to management of menstruation in public places, which include lack of information. In most schools, there is lack of both individual and social learning around puberty and menstrual hygiene management, and the need for skills based health education to promote a healthy school environment.

#### **4.8.3 How Access to adequate and safe to use latrines affect pubescent girls' school attendance**

Findings from the study indicated that pubescent girls had access to latrines in schools which had lockable doors from inside to ensure privacy and security for users. This agree with recommendation from Mitchell (2009) that toilet facilities must also have doors and locks inside, to ensure girls can privately and for them to safely manage their menses.

This also affirms UNICEF (2012b) that states that girls who have reached puberty as well as female school staff need privacy. The available latrines were also segregated for use by pupils of different gender. This also further agrees with UNICEF (2012b) on fact that providing female students and staff with private and safe facilities for menstrual hygiene management enables them to be in school more often.

This also concurs with findings from Njuguna, et. al (2008) which indicates that classes where more than 90% of the girls had access to toilets when in school, tended to have fewer daily absences among girls ( $p < 0.048$ ).

The finding also related to WHO (2009) which indicates that girls and female teachers are affected by lack of sanitary facilities which prevents them from attending school during menstruation.

#### **4.8.4 How access to adequate and affordable sanitary materials affect pubescent girls' school attendance**

Schools that provided sanitary materials to pubescent girls did not report high level of absenteeism as compared to those that did not provide. In schools that provided sanitary materials, the main reason that was attributed to absenteeism was ill health (visit hospital). The study finding is in agreement with Montgomery (2012) in a study that was conducted in Ghana for 120 girls between the ages of 12 and 18, and which found that providing pads with education significantly improved attendance among participants by up to 9% in only five months. However, in schools that did not provide interventions, the main reason for absenteeism was lack of sanitary materials for use during menses. This finding also agrees with findings by Muvea (2011) that reported that menstruation causes Kenyan adolescent girls to lose an average of 3.5 million learning days per month. Sanitary pad was reported as commonly used material. This also concurs with UNICEF (2012b) which found that girls reported sanitary pad as most commonly used material for managing menstruation. Girls in schools that did not provide sanitary pads mostly used cotton wool.

The average number of days that pubescent girls reported to miss school due to menstruation was 1-5 days. This demonstrates that provision of sanitary materials to pubescent girls significantly influences the level of absenteeism considerably.

This concurs with UNICEF (2012b) which reported that although most girls agreed on the importance of school attendance, girls who reported missing school because of their periods said that they were absent during menses for about 1-5 days over the previous three months.

Explanations for their absences included menstrual-related pain or discomfort; fear of leakage, shame or heavy blood flow; and lack of facilities for menstrual hygiene management at school.

#### **4.8.5 How Positive Social Cultural support contributes to pubescent girls' school attendance**

The study found that pubescent girls perceived that adequate support during menses was provided both at home and school. They described the support that they received as provision of sanitary materials for use during menstruation either at home or at school. However, the study also found that a significant number of respondents still experienced some level of fear during menstruation. This was mainly related to uncertainty and discomfort which comes with monthly periods.

This finding relates to a study by UNESCO (2014) which indicated that many myths and taboos still hover around menstruation and lead to negative attitudes toward this biological phenomenon and women experiencing it. These myths and misconceptions as well as negative attitude among communities to menstruation negatively affect the self-image of girls and mostly among those experiencing menses for the first time. This affirms the need expressed by respondents that they required material, social and emotional support during their menses. The finding further affirms UNESCO (2014) which estimated that one in 10 African adolescent girls miss school during menses and eventually drop out because of menstruation-related issues. These mainly include inaccessibility of affordable sanitary protection, the social taboos related to menstruation, and the culture of silence that surrounds it.

## **CHAPTER FIVE**

### **SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS**

#### **5.1 Introduction**

This chapter presents a summary of the study main findings and compares with findings from other scholarly studies. It also presents the conclusions and recommendations drawn from the findings of the study. Implications for further research are also discussed at the tail end of this section.

#### **5.2 Summary of Findings**

The study found out that all respondents had access to water while in the school, although some had water point in the school compound while other obtained from external sources, including buying from donkey cart water vendors. In some schools, access to water was reported on regular basis mainly due to the fact that they had reliable and permanent sources which included a dug well in school or a pipe connection. In other schools, roof water harvesting facilities were installed for capturing rain water but due to low and erratic rainfalls in the area, these were deemed unsuitable for providing reliable water. These schools mainly depended on water brought daily to schools by pupils or buying from donkey cart vendors. They also once in a while benefitted from emergency water trucking from government and relief agencies.

In examining how access to hygiene education influences school attendance for pubescent girls, it was evident that girls had access to hygiene education in topics that mainly included first aid, food and nutrition, child rights, HIV/AIDS, as provided through the government curriculum. However, responses from key informant interviews indicated that the information in the curriculum was not adequate to meet the pubescent girls' specific needs.

Respondents also indicated that their mothers were the main source of information of menstruation but also indicated that they had information gaps that could be met by teachers.

In terms of sanitation, the study found out that all schools provided latrines for use by pupils and teachers while in school. The latrines were also segregated for use based on gender. However most of the schools did not have adequate latrines to meet the recommended government ratio of 1:25 girls and 1:30 boys. This resulted in long queues during break time when all pupils require accessing the facilities. The problem of inadequate latrines also prevented segregation of latrines between pubescent girls and younger girls which could have provided adequate times for users especially during menses.

All schools attempted to provide sanitary materials in form of sanitary pads for pubescent girls' use while in school. However the main source of these sanitary pads were not from schools budgets but from external sources which included government distribution (which met just needs for a few, and which supply was reported as irregular) as well as charitable organizations in form of non-governmental organizations as well as faith based organizations. In schools that were not benefitting from external support, respondents also indicated that they were using cotton wool provided at home by parents, as well as sanitary pads provided by teachers from school emergency kit equipped from teachers' personal resources.

Finally, in assessing the perception of girls in regard to whether they received adequate support to cope with menstruation, majority of them responded in affirmation. They described the support as available from both home and school and in the form of provision of sanitary materials for use during menstruation.

However, the study also found that a significant number of respondents still experienced some level of fear during menstruation which they described as mainly related to uncertainty and discomfort which comes with onset of monthly periods.

### **5.3 Conclusions of the Study**

From the study, it is very evident that provision of water, hygiene education, sanitation facilities, provision of sanitary materials and positive cultural support to pubescent girls influences school attendance. Several possible causal mechanisms may underlie this association between WASH inputs and outcomes on the one hand, and reduced girls' absenteeism on the other. From the study, the following conclusions were arrived at;

Access to reliable safe water for use by pubescent girls while in school enables them to attend school regularly. This water is mainly used to cater for diverse needs which included washing, drinking, and hand washing after visiting latrines, as well as cooking in schools which had ongoing school feeding program. Prior knowledge on menstrual hygiene before the onset of menses is important to girls as it prepares them beforehand. The main source of this information was reported as mothers were the key source of this information, with teachers coming a close second. However a significant number of these girls still indicated that they needed more information on the topic for them to be fully comfortable. The depth of information provided by the school curriculum was considered inadequate by both teachers and pubescent girls to fully empower them.

Access to adequate and safe to use latrines in schools is important in reducing absenteeism of pubescent girls from school.

Findings from the study indicated that although pubescent girls had access to latrines in schools which were segregated for both gender, the ratio for latrine users did not meet the recommended government ratio of 1:25 girls and 1:30 boys. This resulted in long queues for users during break time.

Schools that provided sanitary materials to pubescent girls reported lower level of absenteeism as compared to those that did not provide. Sanitary pads from government or charitable organizations were the main material that was used followed by cotton wool.

Positive social cultural support is important in enabling girls cope with menstruation. The study found that pubescent girls perceived that adequate support during menses was provided both at home and school. They described the support that they received as provision of sanitary materials for use during menstruation either at home or at school.

However, the study also found that a significant number of respondents still experienced some level of fear during menstruation.

In conclusion, the associations realized above suggest that in one way or another, the successful implementation of the water, sanitation and hygiene, including provision of sanitary materials and positive support to pubescent girls in primary schools significantly reduces absenteeism.

## **5.5 Recommendations**

From the study findings and the conclusions drawn above, the following policy recommendations are made to contribute in reducing pubescent girls' absenteeism in schools:

1. Stakeholders supporting interventions in water and sanitation in primary schools with pubescent girls should consider implementing the whole package (water, sanitation, hygiene education, including provision of sanitary materials and social support as main interventions.
2. Parents should be sensitized on need to continue providing information on menstruation to their daughters, as well as prioritize provision of sanitary materials to their daughters during menses.
3. The state ministry of education should consider rolling out the comprehensive sexuality education including menstrual hygiene management as recommended in UNESCO 2014, to bridge the existing knowledge gap.

#### **5.6 Suggestion for Further Research**

This study was limited to assessing pubescent girls' school absenteeism in relation to access to water, sanitation facilities, hygiene education, provision of sanitary materials and positive social cultural support. Further studies, should be carried out to assess the effects of the same variables on pubescent girls' academic performance and retention.

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## APPENDICES

### APPENDIX 1

<b>STUDY QUESTIONNAIRE FOR PUBESCENT GIRLS</b>									
<i>Questionnaire number</i>									
<b>DATE.</b>	D	D	M	M	Y	Y			
<b>Start time</b>	H	H	M	M	<b>Finish time</b>	H	H	M	M
<b>A. Personal Information and Demographics</b> ( <i>Circle as appropriate</i> )									
<p><b>CONSENT FORM</b></p> <p>Good morning/afternoon/evening. My name is.....from University of Nairobi. I am conducting a survey on school girls' attendance in Wajir South Sub-County.</p> <p>All your opinions will be treated confidentially and used for research purposes only, that is, details of this exercise will not be released or shared with anybody other than for purposes of the research. I will <b>not</b> quote any individuals by name in my report.</p> <p>I request your permission, therefore, to carry out the interview which will take about 30 minutes.</p> <p>Date _____</p>									
<b>QUESTIONS</b>			<b>RESPONSES</b>				<b>INSTRUCTIONS</b>		
Q1. Sub-County			Wajir South-----1				If other, terminate		
			Other -----2						
Q2. Name of school			(write full name of the school)						
Q3. What is your nationality			Kenyan-----1				Circle one		
			Another-----2						
Q4. What is your current age (years)?			[13-15]-----1				Circle one		
			[16-19]-----2						

Q5. What class are you currently attending?	8-----1	Circle one
	7-----2	
	6-----3	
	5-----4	
Q6. What is your religion?	Muslim-----1	Circle one
	Traditionist-----2	
	Christian-----3	
	Other(specify)----- -4	
Q7. What is your father's highest level of education?	Primary-----1	Circle one
	Secondary-----2	
	Tertiary/college-----3	
	Other (specify)-----4	
	Don't know-----5	
Q8. What is your mother's highest level of education?	Primary)-----1	Circle one
	Secondary)-----2	
	Tertiary/college)-----3	
	Don't know )-----4	
	Other (specify)-----5	
Q9. What is the main work that your father does?	Take care of animals-----1	Circle one
	Businessman-----2	
	Employed by government-3	
	Employed by other -----4	
	Other (specify)-----5	
Q10. What is the main (occupation) work that your mother does?	Businessman-----1	Circle one
	Employed by government-2	
	Employed by other -----3	
	Heard small animals(goat, sheep and calves) -----4	
	Other (specify) -----5	

Q11. How many years have you been in this school?	Less than 1 year-----1	Circle one
	1 year-----2	
	2 years-----3	
	3 years-----4	
	4 years-----5	
	5 years-----6	
	6 years-----7	
	7 years-----8	
	8 years-----9	
	Over 8 years -----10	
Q12. How many days did you miss school last month?	0 -----0	Circle one
	1-5 -----1	
	6-10-----2	
	Over 10 days-----3	
Q13.What reason(s) made you miss school last month?	Not applicable-----0	Tick all applicable
	Migrated with parents-----1	
	Herd family animals -----2	
	Visit hospital -----3	
	Did not have materials to use during monthly periods-----4	
	Others(specify) -----5	
<b>Section B : Access to Water in school</b>		
Q14. Do you have a water point in this school?	Yes -----1	If No Skip
	No -----2	
Q15. What type of water point is it?	Piped water in compound....1	Circle one
	Borehole -----2	
	Hand dug well-----3	
	Roof harvesting and storage tank-4	
	Other (specify) -----5	
Q16. What do you use water from the school water point while in	Drinking -----1	Circle applicable
	Washing hands -----2	

school for?	Cleaning the classroom---3	
	Cleaning latrines -----4	
	Washing my body-----5	
	Other (specify) -----6	
Q17. How months last year was water available from the school water point?	Less than a month -----1	Circle one
	1-3 months-----2	
	4-6 months -----3	
	7-9 months-----4	
	10-12 months -----5	
<b>Section C: Hygiene Education</b>		
Q18. Did you have information of managing menstruation before you started your period?	Yes-----1	Circle one
	No-----2	
Q19. Who provided you with the information about menstruation?	Mother -----1	Circle all that applies
	Elder sister-----2	
	Aunty-----3	
	Grandmother-----4	
	Teacher-----5	
	Other girls in school---6	
	Health worker -----7	
	Other (specify) -----8	
Q20. Do you think you need more information on managing your monthly periods?	Yes -----1	If No skip to 22
	No -----2	
Q21. Who do you think is the right person to provide this additional information?	Mother -----1	Circle one
	Elder sister-----2	
	Aunty-----3	
	Grandmother-----4	
	Teacher-----5	
	Other girls in school---6	
	Health worker-----7	
	Other (specify) -----8	

<b>Section D: Sanitation</b>		
Q22. Do you have latrines in this school?	Yes -----1	Circle one <b>If No, Skip to Que 29</b>
	No-----2	
Q23. Do you have separate latrines for girls and boys?	Yes -----1	Circle one
	No-----2	
Q24. How many latrines are used by girls only?	1-3-----1	Circle one
	4-6-----2	
	Over 6 latrines-----3	
Q25. Do the girls' latrines have lockable doors from inside?	Yes -----1	Circle one
	No -----2	
Q26. Do girls in lower school share the same latrines with girls in upper primary school?	Yes -----1	Circle one
	No-----2	
Q27. Are you comfortable with sharing latrines with girls from lower primary school?	Yes -----1	Circle one
	No-----2	
Q28. Do girls latrines have water and soap for girls to clean themselves?	Yes-----1	Circle one
	No-----2	
<b>Section E: Provision of Sanitary Materials</b>		
Q29. Does the school provide you with any material for use during your monthly periods (menstruation)?	Yes -----1	Circle one <b>If NO Skip to Que 33</b>
	No -----2	
Q30. What type of sanitary material is provided by the school for use during your monthly periods?	Sanitary pad -----1	Circle one
	Underwear (pantie) -----2	
	Cloth napkin -----3	
	Other (specify)-----4	

Q31. Where do these sanitary materials provided by the school come from?	Donation from the government--1	
	Donations from Non-Governmental Organizations (NGOs) and Faith based organizations (FBOs) -----2	
	Others (specify)-----3	
	Don't know-----4	
Q32. For how many months in the last year did you receive the sanitary materials for use during your monthly periods?	1-3 months -----1	Circle one
	4-6 months -----2	
	7-9 months -----3	
	10-12 months -----4	
Q33. During school holidays, what material (s) do you use for your monthly periods?	Sanitary pads -----1	
	Old clothes -----2	
	Cotton wool-----3	
	Others (specify) -----4	
Q34. How regularly do you change of sanitary pads when on monthly periods?	Once every 24 hours-----1	Circle one
	Twice every 24 hours-----2	
	Thrice every 24 hours-----3	
	Other(specify)-----5	
Q35. How often do you take a bath when on monthly periods?	Once in a day-----1	Circle one
	Twice in a day-----2	
	Don't take bath -----3	
	Other (specify) -----4	
Q36. Which day(s) during your monthly period do you take a bath?	First day only-----1	Circle one
	All days-----2	
	Last day only-----3	
	None of the days-----4	
Q37. Where do you dispose used sanitary material while in school?	Inside pit latrine-----1	Circle one
	In the rubbish pit-----2	
	In a container placed for this use in girls latrines----- 3	
	Other (specify) -----4	

**Section F: Social Cultural Norms**

Q38. In your own judgment do you consider people around you at home and school supportive during your monthly periods?	Very supportive-----1	Circle one
	Supportive-----2	
	Little supportive-----3	
	Not supportive at all ----4	
Q39. How do you personally feel about the occurrence of monthly periods?	Very afraid -----1	Circle one
	Somehow afraid -----2	
	Not at all afraid-----3	

## APPENDIX 2

### HEADTEACHERS INTERVIEW GUIDE

<b>CONSENT FORM</b>	
<p>Good morning/afternoon/evening. My name is.....from University of Nairobi. I am conducting a survey on school girls' school attendance in Wajir South Sub-County.</p> <p>All your opinions will be treated confidentially and used for research purposes only, that is, details of this exercise will not be released or shared with anybody other than for purposes of the research. I will <b>not</b> quote any individuals by name in my report.</p> <p>I request your permission, therefore, to carry out the interview which will take about 45 minutes.</p> <p>Date _____</p>	
<b>District</b>	
<b>Name of the School</b>	
<b>Name of Respondent</b>	
<b>Designation</b>	
<b>Name of Interviewer</b>	

#### Access to Water

<b>Que1: What is the main source of water for this school?</b>	
Response:	
Comments :	
<b>Que2: What are the various uses of water in the school?</b>	
Response:	
Comments :	

<b>Que3: How many months last year was water available from the school water point?</b>	
Response	
Comments	

### Hygiene Education

<b>Que4: Briefly explain what topics are covered in health education lessons</b>	
Response:	
Comments :	
<b>Que5: Does this school provide hygiene education specifically to adolescent girls and which areas are tackled?</b>	
Response:	
Comments :	

### Sanitation

<b>Que6: Does this school provide adequate and separate latrines for both girls and boys?</b>	
Response:	
Comments :	
<b>Que7: Does this school provide water and soap for handwashing and personal hygiene for all pupils including adolescent girls?</b>	
Response:	
Comments :	

## Provision of Sanitary Materials

<b>Que8: Does this school provide sanitary materials for use by adolescent girls?</b>	
Response:	
Comments :	
<b>Que9: What material does this school provide to adolescent girls?</b>	
Response:	
Comments :	
<b>Que10: What is the source of the sanitary materials that this school provide to adolescent girls?</b>	
Response :	
Comments:	
<b>Que11: Where do girls dispose soiled sanitary materials while in school?</b>	
Response :	
Comments:	
<b>Que12: Do you think school staff members in this school provide adequate support to adolescent girls including managing their menses?</b>	
Response :	
Comments:	

End of Interview

### APPENDIX 3

#### PUBESCENT GIRLS' GROUP DISCUSSION GUIDE

<b>CONSENT FORM</b>	
<p>Good morning/afternoon/evening. My name is.....from University of Nairobi. I am conducting a survey on school girls' school attendance in Wajir South Sub-County.</p> <p>All your opinions will be treated confidentially and used for research purposes only, that is, details of this exercise will not be released or shared with anybody other than for purposes of the research. I will <b>not</b> quote any individuals by name in my report.</p> <p>I request your permission, therefore, to carry out the interview which will take about 1 hour and 45 minutes.</p> <p>Date _____</p>	
<b>District</b>	
<b>Name of the School</b>	
<b>FGD Group Number</b>	
<b>Name of FGD Facilitator</b>	

#### Access to Water

<b>Que1: What is the main source of water for this school?</b>	
Response:	
Comments:	
<b>Que2: What are the various uses of water in the school?</b>	
Response:	
Comments :	
<b>Que3: How many months last year was water available from the school water point?</b>	
Response	
Comments	

### Hygiene Education

<b>Que4: Have you been taught hygiene education in this school?</b>	
Response:	
Comments :	
<b>Que5: Which topics are covered in hygiene education?</b>	
Response:	
Comments :	

### Sanitation

<b>Que6: Do you have adequate latrines in this school?</b>	
Response:	
Comments :	
<b>Que7: Are there separate latrines for girls and boys in this school?</b>	
Response:	
Comments :	
<b>Que8: Do you have access to water and soap for handwashing and personal hygiene while in school?</b>	
Response:	
Comments :	

### Provision of Sanitary Materials

<b>Que9: Do you get sanitary materials for use from school?</b>	
Response:	
Comments :	

<b>Que10: What sanitary material do you get from school for use during your monthly periods?</b>	
Response:	
Comments :	
<b>Que11. Who provides the sanitary materials to this school for use by adolescent girls?</b>	
Response :	
Comments:	
<b>Que12: Where do you dispose soiled sanitary materials while in school?</b>	
Response :	
Comments:	
<b>Que13: Do you think school staff members in this school provide adequate support to you in managing monthly periods?</b>	
Response :	
Comments:	
<b>Que14: Do you think your family members provide adequate support to you in managing monthly periods?</b>	
Response :	
Comments:	

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End of Interview
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**APPENDIX 4**

**LETTER OF TRANSMITTAL**

**The Head Teacher,**

.....

.....

**Wajir**

**Dear Sir/Madam,**

**RE: REQUEST TO CONDUCT SURVEY INTERVIEWS WITH SELECTED STAFF AND PUPILS IN YOUR SCHOOL**

I am a postgraduate student at the University of Nairobi pursuing a Master degree in Rural Sociology and Community Development. As a key component in fulfilling the requirement of this course that, I am required to carry out field research in an area related to the course.

I have obtained clearance from the University of Nairobi and County Education office (as per attached copies).

I therefore kindly request you to allow me interview you (the head teacher), the school patron in charge of the health as well as selected girls who are in their adolescent stage. Attached are also copies of my national and college identity cards.

Thank you in advance for your cooperation.

Yours Faithfully

Ms. Christine Wambui Banga

Master of Arts Student

University of Nairobi

## APPENDIX 5

### LETTER OF RESEARCH CLEARANCE FROM UNIVERSITY



**UNIVERSITY OF NAIROBI  
DEPARTMENT OF SOCIOLOGY & SOCIAL WORK**

Fax 254-2-245566  
Telex 22095 Varsity Nairobi Kenya  
Tel. 318262/5 Ext. 28167

P.O. Box 30197  
Nairobi  
Kenya

11<sup>th</sup> June, 2014

TO WHOM IT MAY CONCERN

RE: BANGA CHRISTINE WAMBUI – C50/P/9122/2004

Through this letter, I wish to confirm that the above named is a bonafide postgraduate student at the Department of Sociology & Social Work, University of Nairobi. She has presented her project proposal entitled;

**“Influence of water, sanitation and hygiene interventions on pubescent girl’s education: A comparative study of public primary schools in wajir south district.”**

**Christine** is required to collect data pertaining to the research problem from the selected organization to enable her complete her project paper which is a requirement of the Masters degree.

Kindly give her any assistance she may need.

Thank you.

A handwritten signature in blue ink, appearing to read 'Robinson Ocharo'.

**Dr. Robinson Ocharo**  
Chair, Dpt. of Sociology & Social Work

Cc: Dr. E. Ontita - Supervisor



APPENDIX 6

LETTER OF RESEARCH AUTHORIZATION FROM COUNTY GOVERNMENT

MINISTRY OF EDUCATION, SCIENCE & TECHNOLOGY

Telegrams: "schooling", Wajir  
Telephone: 0722240248  
E-mail: hassanduale1@yahoo.com



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

WJR/C/ED/ADM/VOL.1/55  
REF:.....

8<sup>th</sup> July, 2014.  
DATE:.....

**DISTRICT EDUCATION OFFICER  
WAJIR SOUTH**

**RE: RESEARCH AUTHORISATION FOR BANGA CHRISTINE WAMBUI-  
C50/P/9122/2004**

I am writing to introduce to you Christine, a Post graduate student at the Department of Sociology & social work, University of Nairobi undertaking a study *on the influence of water, sanitation and hygiene interventions on pubescent girl's education: A comparative study of public primary schools in Wajir south district.*

She will be required to collect data pertaining to the research problem using guided questionnaires and interviews.

I hope you will accord her the necessary support

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

HASSAN A DUALE  
COUNTY DIRECTOR OF EDUCATION  
WAJIR